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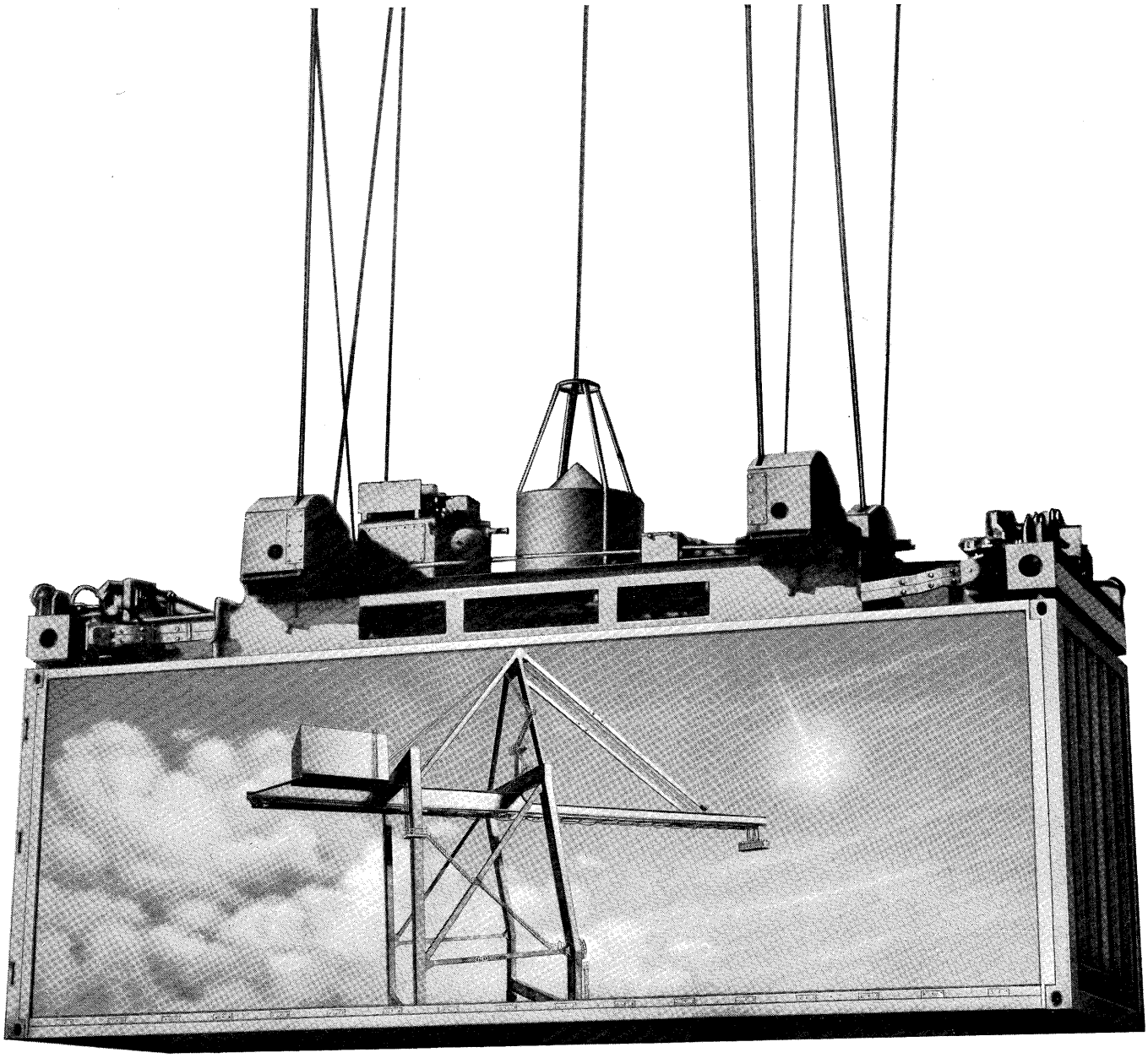

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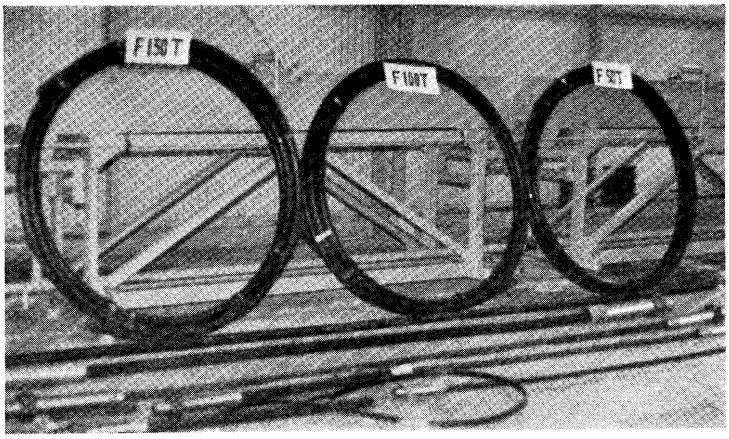

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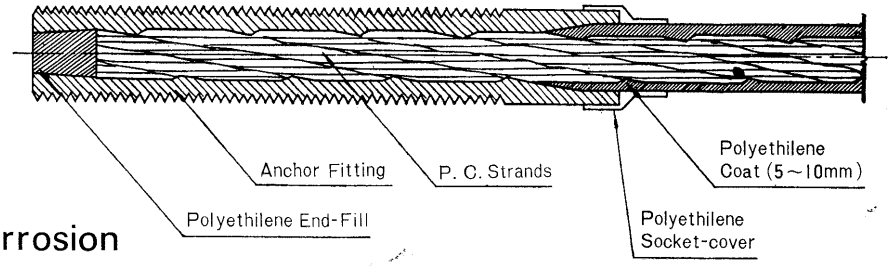

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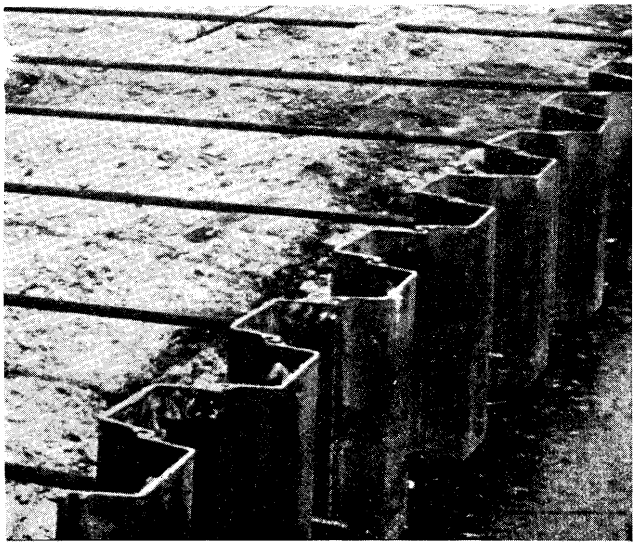

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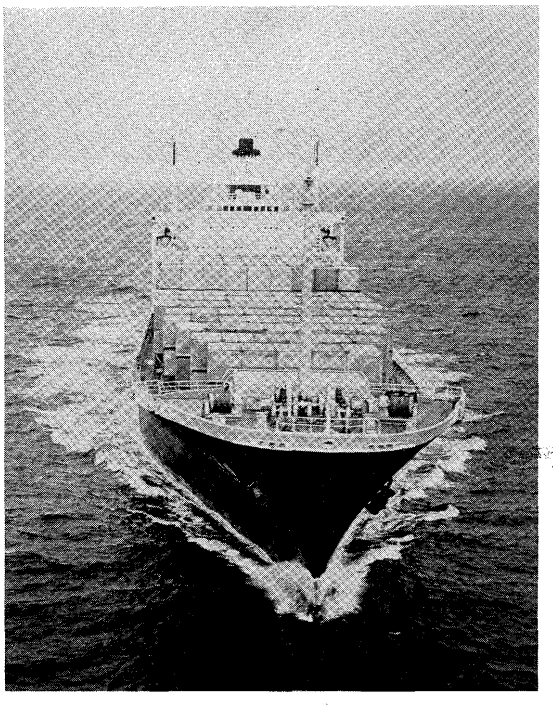

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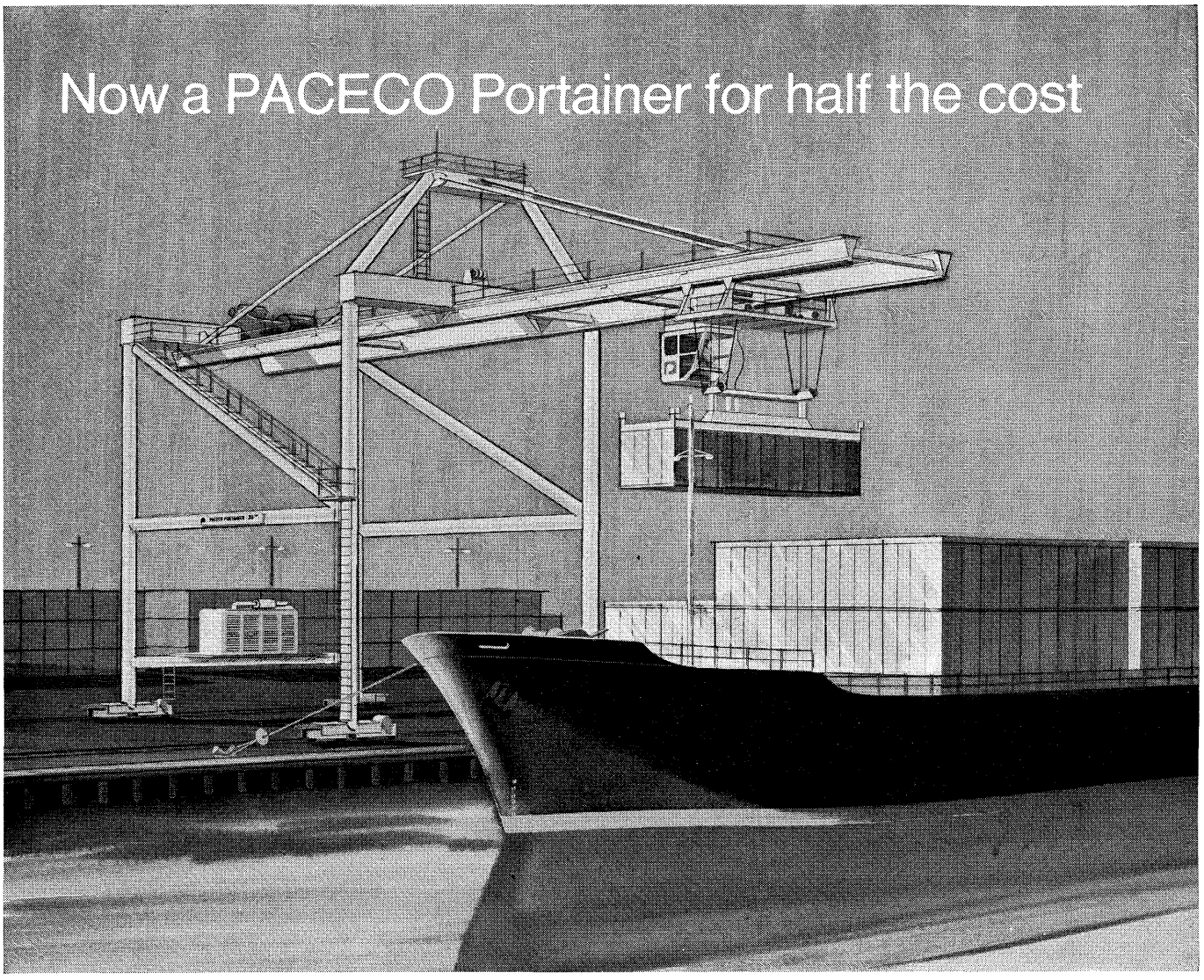

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January, 1972 Vol. 17, No. 1

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The Cover:

Artist's rendering of Consolidated Passenger Ship Terminal under construction by The Port of New York Authority on the Hudson River at the site of existing Piers 88, 90 and 92, from 48th to 52nd Streets. The new terminal, designed to accommodate all passenger vessels calling at the Port, will provide heated and air-conditioned lounges and galleries, roof-top parking areas and efficient Customs facilities. There also will be a ramp and roadway system adjoining the terminal for the convenient and rapid loading and unloading of passenger vehicles and taxicabs. **(See also story on page 32.)**

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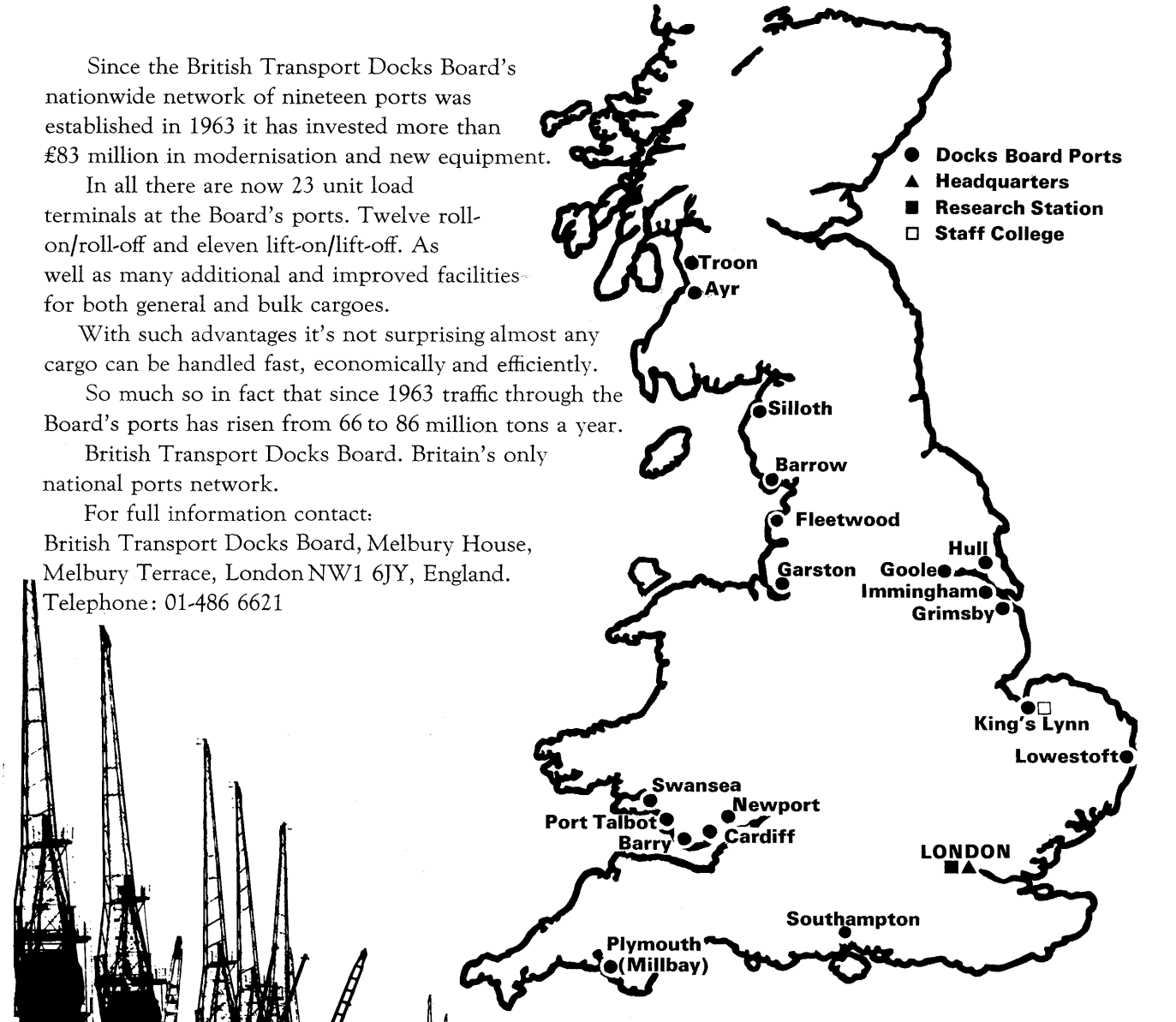

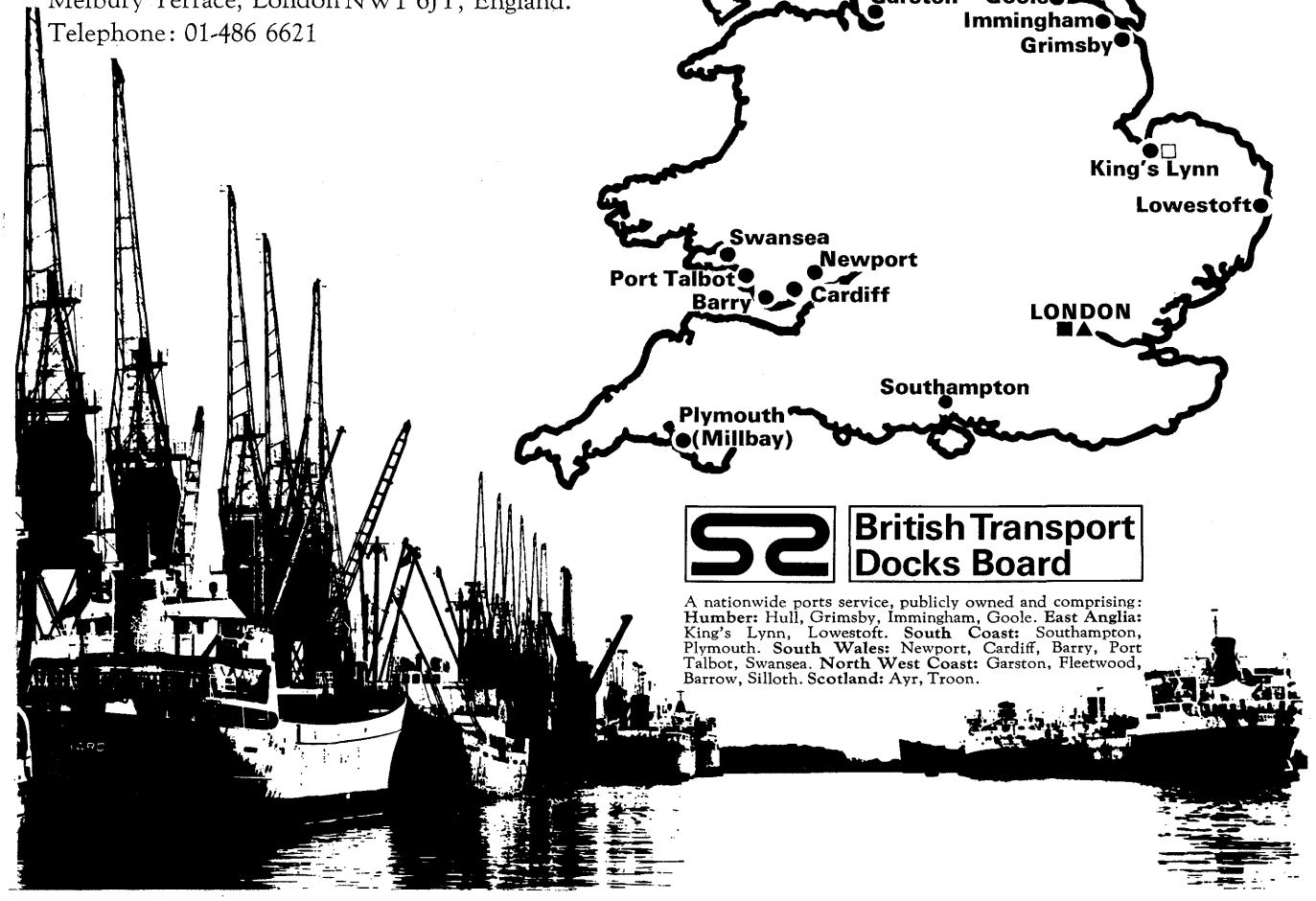

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PORTS and HARBORS

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(6)

IS COOPERATION BETWEEN PORTS POSSIBLE?

BY

R. VLEUGELS

GENERAL MANAGER
PORT OF ANTWERP

Introduction

"Cooperation between ports is in fact quite possible and exists in various forms". This would be the simplest answer to the question. However, in many countries and on many coasts such cooperation still seems to be little practised.

In this paper we shall attempt to examine the principles, limitations and forms of possible cooperation between ports.

1. Cooperation

The definition given in the French encyclopaedia "Encyclopédie Larousse au XXième siècle" seems to me to provide a suitable approach to a discussion of the meaning of the concept of "cooperation".

In the field of political and social economics it is a "*method of action* (1) by which *individuals* (2) *having the same interests* (3) enter into parthership *with a view to their common benefit* (4)".

These elements can be transported in terms of port economics.

1.0. "Individuals".

The possible partners are not the ports themselves but those persons who can make decisions concerning the administration and a number of the essential functions of a port.

1.0.1. In the first place these are the *port authorities*. It should be mentioned in this connection that the actions of these authorities are precisely aimed at making the ports function efficiently by cooperating with other authorities and with the clients using the ports. By cooperating with each other they would be able to serve the interests of their respective ports.

Since the competence and sphere of action of the port authorities are restricted to a greater or lesser degree there is a limit to the possibilities of such cooperation.

a.– Port authorities which are in fact landlords and only provide the infrastructure of the port, can hardly enter into consultations on every subject with port authorities which also operate the installations of the port and which may even be responsible for the loading and unloading of cargo.

b.– Even when not directly administered by the central authorities, most ports seem to have connections with higher authorities. These relations can influence cooperation between port authorities, either favourably or unfavourably.

They can, for instance, be hindered in a joint, policy aimed at raising certain charges to a comparable level if the prices policy of the higher authorities does not allow this.

1.0.2. From the broader point of view of "cooperation between ports" the *national authorities* too can be mentioned.

The aim of a national port policy is to form a rational basis and to take the appropriate measures in order to allow national port functions to develop as a harmonious whole.

If various national authorities are endeavouring to coordinate their respective port policies, then this provides a strong incentive for cooperation between the port authorities themselves.

Reference can be made here to the growing agreement between the Belgian and Dutch governments which also covers transport and port problems. Moreover the Benelux Treaty of 1948 (the Customs Union of Belgium, the Netherlands and Luxemburg) includes the following clause:

Art. 69: "The Parties to the Treaty undertake to shape their joint policy in order to promote the harmonious development of an active cooperation between their seaports".

Within the framework of the European Economic Community (1958) attemps are being made to harmonize the transport sector. The ports are naturally feeling the influence of this.

We are forced to conclude that the "port policy" pursued by national or even supra-national authorities has many more aspects and deals with larger matters than just the problems concerning which the local port authorities can take decisions. Transport policy, the development of transport infrastructure, the market organization of transport etc. are all factors situated outside the direct sphere of action of the ports but which nevertheless exercise a very great direct influence upon them.

1.0.3. *Private firms* can also appear as possible partners in cooperation between ports. In fact the prosperity of ports depends largely upon the firms which are active in the ports.

Such firms can decide to which ports they prefer to deliver or in which to receive their goods. They thus create ties between certain ports, which promotes mutual understanding between the port authorities concerned.

Is it not logical, for instance, that when a certain specialized type of traffic is organized between two ports, complementary facilities should be made available at each end of the route? It is in the common interest of both authorities to inform each other in detail about the technical characteristics, conditions governing operation and organization, in other words about all the problems which are connected with the new facilities and the traffic in question.

1.0.4. In this paper I shall limit my remarks to possible cooperation between ports from the point of view of the *port authorities*,

Although on account of their own statutes they have to take certain limitations on their competence into consideration, they can take initiative and promote schemes and are at the same time the most interested parties. By their actions they can both inspire other, even higher authorities and also influence private firms in a favourable way.

1.1. "Having the same interests"

Fundamentally the interests which all port authorities have to promote and to defend are the same. For in the first place they must all *administer in the best possible way a port* and the port zone belonging to it and ensure the efficient functioning of the port.

Since a port has a far-reaching influence of the economic development of the region served by it and on its national or international hinterland, the task of the port authority includes more than just managing the port. The port authorities must also try to develop the role of *the port as a generator of prosperity*.

Their endeavours thus go further than trying to balance the debits and credits of the annual balance-sheet. This means that at the level of cooperation between port authorities it is not always the same considerations which predominate as, for instance, those of the share-holders of two competing companies who decide at a joint meeting to merge into one company. In relations between ports both micro-economic and macro-economic factors play a role.

1.1.0 It is obvious that port authorities have the *same* sort of *interests*. Nevertheless these are not *necessarily common ones*. Spurred on by self-interest the individual port authority will naturally place the interests of its port above those of other ports. This relationship is most distinctly expressed in *competition*, a rivalry of interests which, however, acts as an incentive to progress.

Competition between a series of ports does influence the mutual relations between the port authorities

concerned. It does not, however, exclude cooperation. On the contrary. The greater the number of common spheres of action they have, the greater the number of objects of potential cooperation.

1.1.1. For all port authorities there are many interests which they can promote jointly *without any regard to considerations of competition*. The following examples will illustrate this:

- The promotion of a trade policy which favours or at least does not hinder overseas trade.
- The simplification of customs and other formalities concerning the transport of cargo and the use of port facilities.
- The promotion of navigational safety.
- Safety precautions in the handling and transport of dangerous products.
- The combating of theft in ports.
- The improvement of port installations at the technical and organizational levels.
- The safeguarding of the right to equitable payment for the services provided by the port authorities for their clients (shipowners, shippers, investors, etc.)
- The development of a common attitude with regard to the policy and recommendations of international or supranational organizations (e.g. I.M.C.O.)

This list could be considerably extended.

1.1.2. In fact it is more extensive when the parties concerned are *ports which serve more or less the same hinterland* and are to a greater or lesser extent *competitors*. They can be jointly interested in such things as:

- The promotion of the construction of or the modernization of transport routes by which the ports are served.
- The development of a transport policy and of the organization of the transport market which will facilitate the freedom of movement of traffic flows.
- The protection of and care for environmental conditions.
- The application of operational norms ensuring fair competition.
- The coordination of certain port functions. One port can carry out functions on behalf of another (feeder services, pipelines, etc.)
- The coordination of investments in port infrastructure and equipment.
- The operation of a joint-off-shore harbour for supertankers or possibly other types of traffic.
- The harmonization of port charges.
- The harmonization of conditions for the establishment of industries in the port zones.

1.2. "With a view to their common benefit"

Cooperation is only possible when the partners each consider that they can benefit from it. If their individual advantage is small or insignificant then the efforts made for the cooperation will be limited.

Cooperation presupposes that both partners will be able to benefit equally from it.

This is also true in the case of port authorities.

Cooperation between ports – especially competing ports – does not sometimes come to fruition because the "common advantage" is interpreted as "one's own advantage" and because the old saying "live and let live" is all too easily ignored. One partner cannot ask for any concessions from the other unless he offers fair compensation.

1.2.0. To the extent that the characteristics of maritime transport, the competitive relationship between ports and the individual role which each port can really fulfil are clarified cooperation between port authorities is facilitated. *The benefit of cooperation must be obvious to the decision makers.*

Scientific investigation can and must serve them in order to justify all decesions taken, and in those cases where it is impossible to make an accurate study the wise judgment of the port authority must come into its own.

Even if the object of cooperation is important to the ports concerned, the port authorities must nevertheless also take into consideration the fact that the measures taken must also be "acceptable" to public opinion, to the private firms which have been established in the port and, of course, to the "higher authorities" as well.

1.2.1. Two or more ports can aim at obtaining common benefits. Plural cooperation is possible between the ports of one and the same economic zone, of one country, of one range.

Several facts and problems are of importance to all or to numerous ports. For them the International Association of Ports and Harbours is the organization which must take it possible to undertake joint action. An example of this is the successful campaign against the tonnage mark for shelterdeck ships.

In its recommendations and motions the I.A.P.H. can express the joint opinion and influence of its members to the benefit of port interests.

1.3. "Methods of action"

Finally the ideas set out above must be transformed into action in accordance with a formula or "method" to be workded out.

1.3.0. *The way of cooperating* can naturally vary greatly with regard to the objective and the attitude which the partners wish to adopt. The limits of such variations are:
– minimal : the exchange of data
– maximal: the undertaking of joint projects or even the merging of ports.
There are no patent formulas available. Port authorities themselves must ascertain how best they can serve certain common interests. Moreover, various methods each of which is adapted to a particular objective can be employed at the same time.
Regular contacts between the responsible authorities or their representatives are extremely important. Talks between well informed port specialists lead to better mutual understanding and comprehension. Thanks to the exchange of ideas and data such talks frequently open up perspectives the existence of which was previously not even suspected. On the basis of this, joint decisions can be reached and finally the conviction can grow that cooperation in a form to be worked out can be beneficial for all involved.

2. CONCLUSIONS

After this general discussion which dealt more with the basic reasons for and justification of cooperation between ports than with giving an inventory of possible objects of such cooperation, it is necessary to give a succinct summary of the conclusions.

2.0. *Cooperation* is quite *possible* in many different forms in the countless spheres of action in which ports have common interests. While a sort of contradiction in terms, it nevertheless appears to be the case that *cooperation* can be most extensive between *competing ports* provided that their common interest is "discovered" by means of investigation.

2.1. The obvious promotors of such cooperation are the *port authorities*. They are also the first to benefit from it.

2.2. In every sector of the economy in which ports form a link forms of cooperation or planning are to be found: groups of clients form associations both in the transport sector (e.g. shipping conferences) and in the cargo sector (consignors' and shippers' organizations).
In addition to this international agreements which lead to legislation at national level frequently contain provisions affecting the administration and running of ports.
Thus *cooperation between ports* – and especially between port authorities – is *necessary* in order for them to be able to defend their own individual positions and their common interests.

(7)

THE MODERN CHALLENGE TO PORT MANAGEMENT

BY

HARRY C. BROCKEL

FORMER DIRECTOR OF THE PORT OF MILWAUKEE

Ports at large population centers are increasingly involved in the arena of social problems: Water pollution; recreational use of waterfront lands; threats to wildlife and fisheries; redevelopment of waterside areas; rapid transit programs; vessel sanitation and oil spills; major highway systems in waterfront areas, and others. Ports with airport jurisdiction face all the problems of the super-jet age.

In addition to these sticky problems, the ports must adapt to a world shipping revolution. Large areas of

high-value waterfront lands are needed, on a scale hitherto unknown, to accommodate container-ships or large-scale automated handling of bulk commodities. The super-ship needs deeper channels and much larger maneuvering areas, and if these accommodations cannot be centralized at ports, offshore discharge facilities are called for at more remote locations.

Competition for the tax dollar is very sharp, with local governments tending to respond to social pressures, and to make capital needs subordinate. For the autonomous port, bond costs have escalated, making the ordinarily sound capital venture, marginal or impossible of achievement.

Port management, always unique in the range of skills required, has moved into a new era of complexity and challenge. Massive capital expenditures for land and improvements call for penetrating economic judgments. Changing technology requires great adaptability. Computerization, automation and mechanization are the more obvious elements in a rapidly changing port scene. All of these forces are at work in Hong Kong and Rotterdam, as much as they are in San Francisco, New York and Montreal. The key words for port management today are economics, environment and adaptation.

The Port and the Environment

Around the world, "coastal zones" are critical in the solution of environmental problems and the preservation of ecological resources. It is in coastal waters that nature and man collide. These are the waters used for shipping, for recreation, for waste disposal, for resource exploitation and other uses. These are the waters most visible to the public, and the emerging conflicts between economics and environment center in these waters.

Early in 1971 a blue-ribbon commission appointed by the Governor of California recommended a two-year moratorium on *all* development in the 1,264 mile coastline of what is now the most populous American state. The proposed two-year ban on all construction in the coastal zone is proposed to provide time to draft a comprehensive plan and zoning regulations to control future development along the Pacific Coast. In effect, state control is proposed to supersede local development and authority. The major recommendation was for creation of a state "super agency" with authority to review or reject any state or local project which might degrade the environment.

In the single state of California the coastal zone has been the subject of public policy battles over national parks, national seashores, nuclear power plants, land fills, oil spills, waterfront sky-scrapers, and the competition for port development versus other uses. Ports are in the coastal zone, and the coastal zone is where the action is, in the environmental battles now under way, and those to be fought in the future.

There must be an accommodation as between the economic needs of a nation and the saving of its natural environment. This accommodation will be forged in the white heat of debate, and can only be resolved by public opinion and sound legislative action.

Ports and port cities are already in the thick of this battle, and will be more so in the future. Port expansion must be buttressed not only by sound economics, but by the highest arts of diplomacy, public relations and a recognition of public concern for the environment, as well as for economic growth.

The Competition of Land

As a kind of by-product of the environmental concerns of our times, comes the new public awareness of water as a resource and as an esthetic feature of life. After a generation of disinterest in waterfronts, there arises a public demand for seashore access and waterside parks, and a closer human relationship with the water. All over the United States, and in many other ports of the world, are imaginative plans for apartment complexes, marinas, shoreside restaurants, and other amenities to bring peoples to the shore.

More than one port has found its area the center of controversy. Community planners, by the nature of their training, tend to emphasize esthetics, rather than economic considerations. They tend to favor parks over ports, or people over piers. They would prefer a limited economic stimulus from a recreational undertaking, rather than a major economic stimulus through commercial shipping and port development.

Given these traditional responses by community planners, and the public concern over the environment, port management must be armed with the soundest economic projections for port expansion, and equally armed with the highest skills of diplomacy and public persuasion. More than one port expansion proposal has encountered stormy seas, when it competes with the emotions of the environmentalist.

The Dredging Dilemma

The maintenance of channels and port maneuvering areas, and the deepening of channels to serve larger and deeper ships, is basic to the operation and indeed to the survival of any port.

In recent years, the fresh waters of the Great Lakes have been the testing ground for a head-on struggle between the needs of commerce and the environment. At issue is the long-standing practice of dredging lake harbors, either for maintenance or for improvement, and disposing of the silt by hauling it to designated dumping grounds in

deep open waters of the various lakes. This long-standing practice of the Corps of Engineers has been challenged, on the grounds that silt from centers of population tends to be highly polluted, and that its transfer to the open lake would present a new source of pollution. The actual risk is debatable, since the handling process might very well tend to minimize the pollutants, and the transfers from one point to another may not really affect a total situation. Nevertheless, the environmental viewpoint has prevailed, and the Corps of Engineers has ceased the open-water disposal of dredging spoil; nor will it permit localities or contractors to use open-water disposal.

The immediate problem in the Great Lakes is the requirement that dredging spoil be placed in reservoirs, behind suitable retaining walls, or disposed of by some other method – for example, truck haul or pipeline to inland areas. As to the latter, if the silt is considered to be, or is in fact, highly polluted, the same objections may arise to introducing it into swamps or other situations where the pollutants might affect groundwater supply, run off into streams, or create some other nuisance.

As to retention behind retaining walls, there is the obvious possibility of making new land to enlarge port areas, to create shoreside parks, or industrial lands. Two concomitant problems: the high costs of impervious bulkheads, and the problems of stabilizing dredging spoil which may range from high grade, to the lowest grade of muck or plastic clays.

Another dilemma confronting freshwater ports thus arises – the Corps requiring revetted or bulkheaded areas, and localities seeking the dredging to maintain their ports, but resisting the cost burden of building bulkheads, and then in turn launching new campaigns for new federal funds, not only for the necessary dredging but for the new requirement of retention areas.

The solution here would seem to be to retrieve the situation by selective land fills, to create new public assets for development. Since localities will become the owners of such new properties, many of which can be high-value, and since they are the beneficiaries of federal dredging programs, they should be willing to bear a substantial part of the cost of retaining structures. These comments apply particularly to the Great Lakes, and to United States ports. However, there is a growing concern over abuse of saltwater coastal zones, the effect of pollutants upon shellfish beds and beaches, and similar concerns. Both freshwater and saltwater thus may be grappling with the basic problem of how to get rid of polluted bottom material.

It should also be noted that land fills should be soundly planned; should have good prospective uses; and that shorelines should not be mutilated or unduly disturbed by the suggested process.

The World Transport Revolution

Port management is confronted with a rapidly changing technology and an undeniable revolution of all forms of transport, land, water and air. Expressways and pipelines criss-cross continents. Even in the remotest parts of the world, the highway vehicle has its impact, and large cities are almost strangled by vehicular volume. Railway operations have changed dramatically in recent years, with successful innovation of many kinds in the freight field, and in the United States, the practical abondonment of the passenger trains.

Twenty years ago the jet plane was in the idea stage. Today it is commonplace and the question are: How big the jet will become, how fast it will fly, whether we can design airports to serve them, and what is the public tolerance for this very efficient mode of transport, which annoys the public in various ways. Many port authorities are in the midst of this kind of conservative

The traditionally conservative field of ocean shipping has been totally revolutionized. Twenty years ago, a 25,000 ton freighter would have stood out in any port merely by its size. In May, 1967, when this group had a splendid meeting in Japan, many of us had the privilege of seeing in Yokohama the handsome IDEMITSU MARU, of 210,000 tons, then the largest ship in the world. Two years later the IDEMITSU MARU was the eighth largest ship in the world, having in that short time been surpassed by seven other ships in the range of 250,000 tons to 360,000 tons. The first 400,000 tonners are on the way; Japan is building a 500,000 ton dry dock; and the Japanese Ministry of Transport recently ordered a feasibility study of a million-ton tanker.

Bulk cargo carriers in numbers have crossed the 100,000 ton mark in size. The containership, a striking concept less than 10 years ago, moves steadily upward in size and speed, and is expected soon to carry at least half of the world's general cargo. LASH ships, in numbers, are on order, and the first ships of this innovative type are in service. Cities far from sea, in the Mississipi Valley, energetically plan to become international ports, served by LASH barges, inland waterway barge lines and "mini" ocean vessels.

The public ports of the world have never been without their problems and challenges, but today they are confronted with the major question of successful adaptation to a land and water shipping revolution. Much deeper channels and maneuvering areas are required; automated handling dominates the shoreside process; large assemblies of land are required for container berths; and for large-volume bulk operations. Labor responses to the revolution in technology present grave problems.

As port development becomes more sophisticated and costly, venture capital for port expansion must be secured in an era of cost inflation; high interest rates; changing cost-benefit ratios. Where ports are under local

governments, these governments are responding to social and political pressures, and ports and parks are suffering for lack of capital and recognition. Cities as never before need broader economic bases, and in throttling their ports, they are shrinking their own economic opportunities.

In summary, ports today need huge capital resources, great skill in adaptation, and the sharpest kind of marketing know-how, in a changing and competitive world. Even with all of these problems it is nevertheless clear that ports will have a vastly larger role to play, with predictions that the current 2 billion tons of shipping afloat on the oceans each year will rise to 5 billion tons early in the 1980's and to perhaps 35 billion tons when the year 2040 rolls around.

As dramatic evidence of what is happening on the oceans, witness the shipping world's response to the closing of the Suez Canal. Witness also the projections for a new sea-level canal at Panama. We meet in Montreal on the shores of the St. Lawrence River. Opened only 12 years ago, the St. Lawrence waterway, penetrating into the heart of North America, faces critical questions as to its future, in terms of its capability to serve a world fleet constantly increasing in size and in draft requirements.

A New Breed of Port Managers?

Port management has always called for special abilities and leadership. Many of the great ports of the world have uniquely reflected the qualities of their leadership and the broad horizons of the men who have guided their destinies, as managers or as far-sighted commissioners. The future calls for leaders of even greater sophistication, resource, capacity, technical knowledge and adaptability.

In the next 25 years, we may see a total revolution in port concepts, as well as in shipping and transport. There is already discussion of regional port complexes or of special purpose ports. There is discussion of local ports going to a metropolitan concept, to broaden their service area and their financial base. To survive, many ports under local or district political control, must seek autonomy of varying degrees, so that they may have flexibility, managerial discretion, and be able to meet the challenges of these times and of the future.

In addition to being financier, engineer, economist, diplomat and public relations expert, the new port managers must be environmentalists, since ports will be focal points of the environmental conflict.

What research and training sources are available to fill these new needs? Needed is a successful merger of the resources of government, of business, of transport technology, of the computer world and of education. The American Association of Port Authorities has successfully conducted a series of port management seminars, with emphasis on solving practical port problems, all drawn from actual experience in many ports in several countries.

The 1970 annual meeting of AAPA scheduled a stimulating discussion, participants being Dr. Joseph Carrabino of the University of California at Los Angeles, Dr. John Hazard of Michigan State University and Admiral Edward O'Donnell of the New York Maritime Academy. The writer was privileged to moderate the session. These distinguished educators were substantially in agreement that port management calls for great talent, but in relatively small numbers of people. The numbers of people involved probably do not justify special curricula or formalized courses at university level. It was agreed that there was needed a bridge between the port world and the academic world, with seminars and institutes, and perhaps ultimately, academic programs in the techniques and problems of transportation and port management.

The British Transport Staff College at Woking is conducting comprehensive 12-week mid-career courses designed for men of potential in the 30-45 age group. Six sponsors support these courses, including the National Ports Council, the others being national transport groups representing all forms. Shipping companies are becoming involved. The theme of the current program is "Transport and the Future". Two of the current topics are design for a model port, and forecasting the most important technological changes in transport in the next ten years. This British venture in professional stimulation, aimed at people in port and transport management, may serve to stimulate similar ventures elsewhere.

Many aspects of ecology must become familiar to port management; and it is of course traditionally interested in commerce, economics, finance, engineering, political science, management science, oceanography and the new techniques of analysis and model studies.

Perhaps from the resources both of the ports and of the academic world, there may emerge an expanded literature, to keep pace with the change and challenge so obvious in the ports, in the coastal zones, in the oceans and along continental waterways.

The world population explosion so often predicted will obviously be paralleled with an enormous growth of commerce and probably with total exploitation of global resources on land and in the oceans. Commerce will move in volumes now undreamed of. The needs of the world will be great, and the need of the ports will be even higher levels of skill in planning and execution of the port mission. Certainly, in port development terms, the future calls for new high levels of leadership and competence, not only at the top managerial level, but with competent professionals in every aspect of port development – planning, building, operating, marketing and financing.

Super-ports and super-ships may indeed call for super-men at the controls!

(8)

METHODOLOGY OF STUDIES OF CARGO HANDLING IN PORTS

BY

JACQUES GRUOT

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In this presentation we are not trying to come to grips with every problem encountered in the field of in-port cargo-handling. It deals with neither the handling of bulk cargoes, nor with those new handling techniques whose arrival coincided with that of specialized vessels, container-carriers, LASH . . . This study is restricted to the handling of general cargoes which, in spite of its traditional role, frequently continues to represent the largest share of port traffic, perhaps not in volume, but certainly in time and therefore in value, both in the industrialized and in developing countries.

A study of the in-port handling of general cargoes must produce such recommendations as will lead to the improvement or modification of techniques and methods already employed. Logically, it will start with a detailed analysis of handling routines. However, the technical aspect cannot be separated from the administrative, social, financial and economic considerations, and the recommendations will cover the multiple areas of port policy: policies on personnel, work-planning, equipment, capital investment and rates. In this way, a handling survey will include all elements touching on the existence and operation of a port. There are, however, very few examples of integrated studies. Handling problems are touched on most frequently either in part, as an appendix to other problems – be it a question of social conflict or of the introduction of very specific new techniques – or in the course of much more general simulation studies, where they represent only one element. In either case, they are not the object of a direct approach, so cannot be treated as a whole.

As cargo-handling is the key to the entire port operation, we can surely ask ourselves why there has not been more advanced systematic study of this item. In the majority of ports in industrialized countries, cargo handling remains in the hands of private enterprise, over which the port authorities have very limited control. The companies will not willingly give the authorities the benefit of the knowledge they have gained through their own handling activities. Moreover, the workers in the ports are themselves hostile to any survey of work-planning. The prospect of social conflict frequently discourages the port authorities from undertaking time-studies or a breakdown of labour distribution.

Comparisons between ports are difficult and often meaningless: the routines reported on do not show under what conditions they were assessed, and there is no mention of other operating considerations liable to influence these routines. It should be added that the organizational schedules in various ports across the world differ extensively and that the practices followed in the handling of general cargoes are remarkably diverse. Loading and unloading for example may, depending on the port, be controlled by two separate companies, one working on board and the other on shore, or by one single company who is responsible for the entire operation. The concept of a routine can only be given consideration in so far as facts are available on work-planning.

Any systematic study od the handling of general cargoes must start with close observation of both technical and administrative fields.

On the technical level, the first step is to classify the products moving in and out into groupings and secondary groupings, putting together those products calling for the same handling and storage procedures. One then comes up

with the following groupings, for example: bags, cartons and boxes, bales, drums, sawn timber, heavy and cumbersome packages, vehicles, bulk products moved by conventional means, products moved on pallets, miscellaneous (adjustments). Within each grouping, and for each product, one obtains a certain number of indications by means of investigation and timing of the handling procedures over a period of approximately two hours. These dock-side observations may be conducted for two or more months, depending on the significance of or the seasonal variation in the traffic.

Then, in each group or secondary grouping one or two of the most representative products are selected, and a handling-record is set-up for each of these products. This handling-record consists of two parts: a first sheet shows a qualitative and quantitative analysis of the various present handling procedures for the product under consideration; a second sheet gives identical information on the revised procedures to be recommended. Observation of the technical aspects is, among other things, designed to obtain the information shown on the first sheet. This latter is divided into six sections:–

1. The caption carries data relative to the grouping applicable to the product, as well as to the general cargo classification table: particulars on the grouping, the product, annual traffic, percentage of total in-coming and outgoing traffic, unit packaging, weight and volume.

2. A brief description of the handling procedures.

3. A detailed analysis of the handling stages involved in the transfer of the cargo from ship to shore, or vice-versa. This shows the results of the on-board timing, broken down into stages (loading, heaved loaded, laying down, heaved empty), including waiting times, both in the hold and on the wharf; data on the type of handling machinery employed; sling and hoist (support, number of packages, weight); size and type of labour-force involved; the performance in tons/hour by team and by docker. It is accompanied by a diagram showing the hoist and its support.

4. A detailed analysis of the handling stages on shore, i.e. movement of the double-tackle to the platform or warehouse, or vice-versa, at this stage reference is made to the type of handling machinery employed, elevator, tractor-trailer, etc. . . . In addition to the results of the timing studies and the data on personnel and equipment, this analysis also provides an indication of the distance travelled and at what speed. The diagram gives an overall picture of the transport situation.

5. Information on storage conditions: location, stacked height tonnage per square meter, average length of stay; also illustrated by a diagram.

6. The marginal handling costs on shore for each ton of cargo.

Paralleling the technical observations, the administrative investigation aims to conduct a study of all the parties involved in port handling procedures: port authorities, customs, shipowners, consignees, insurers, cargo-handling companies, forwading agents, carriers, dockers' associations, watchmen, etc. . . Among other things, it examines the organization, the responsibilities, personnel and equipemnt of each; also the relationships between the parties; it gives special attention to the cargo-handling companies, and it would be advisable to also obtain their rates and costs.

Through a synthesis of the technical observations it is possible to extract certain quantitative data on the kind of handling procedures currently in use at the port under consideration. We will show the work-force and the composition of the various teams, the length of the cycles and the significance and frequency of waiting times, the performance in tons/hour by team and by docket, the performance in tons/day by team and by ship, the storage rates in tons/m^2 and handling costs.

Note that the performance in tons/hour obtained in this way is hypothetical, and does not take into account stoppages or other incidents. It should, however, be an improvement over the average performances obtained by collating the work-sheets of shipping agents and those of cargo-handling companies. A comparison reveals an efficiency coefficient for measurement of the significance of interruptions in the work-plan.

We now reach the point where, based on the results of the administrative and technical investigations, we put together a general picture of the quality of the services rendered and the way the work of handling is organized. Although comparisons with other ports can prove useful, they should be approached with caution. Even if we do know of ports which may be deemed "comparable" with the port under consideration, we should not lose sight of the fact that a reported performance of so many tons/hour by a team or docker can be considered significant only if all the particular conditions under which it was assessed are known.

The above analysis refer to the present situation. Before formulating recommendations for the future, it is advisable to examine the general direction in which each of the elements relating to cargo-handling is developing. The ship is involved in this development: conventional or specialized category, dimensions, equipment; the type of cargo, volume (projected traffic patterns by category in various spheres), packaging; handling machinery employed; and personnel. Whereas the first part of the study was designed to gather physical data, we now have to define the trends, together with the restrictions which could limit the effects of future proposals. To this end, we utilise the information obtained on-the-spot, and at the same time make comparisons with the changes effected in the same area in other countries.

Bearing in mind these trends, what basic guidelines should be established in order to arrive at a sound concept

of cargo-handling? In the course of this study, which deals with methodology and not with principles, we shall confine ourselves to the enumeration of some concepts which may appear self-evident, but which, as experience has shown, are only too-frequently not applied.

The basic element of any properly conceived port cargo-handling system must be continuity. Continuity first of all in the physical handling chain, which means the elimination of all unnecessary interruptions in the loading flow. Secondly, continuity in operating time, which means the elimination of some idle periods: in particular, this leads to a harmonization of the cycles, by establishing a primary cycle at the outset, together with one or more subsidiary cycles. Generally speaking, the primary cycle will be the on-board cycle, with the subsidiary cycle – often the on-shore cycle – being designed accordingly. In a more general way, the need for continuity makes itself felt in the assignment of functions. In this respect, we can assume that any organization based on parallel lines of responsibility on the wharf (cargo-handling on-board – shore – warehousing – delivery) is not desirable and should be replaced by a flow line distribution at the wharf, so that the same agent is responsible, over a small area, for all lighterage operations.

A second objective concerns optimum use of the facilities at our disposal. The platforms must be used rationally and not extensively, and the wharf zones must be used prudently but to best advantage. The work structures must not be too rigid: it must be possible to increase the capacity of a team when necessary, or to change the assignment of equipment as soon as its operation no longer appears optimal.

If you are to have proper in-port cargo-handling, you must have competent, industrious, well-supervised personnel. The value of the labour-force can sometimes be greatly increased by the setting up and implementation of training, stabilisation and social promotion policies. Regarding the policy governing supplies, we must not only put a great deal of thought into establishing a purchasing policy, we must also pay considerable attention to use and maintenance, which areas are frequently neglected in developing countries. Finally, we should point out that the search for increased productivity cannot be separated from safety considerations.

The recommendations include both administrative and technical aspects. We do not propose to elaborate on the first, which includes, or can include, the division of responsibilities and functions among the various port organizations, their administrative structure, the planning of cargo-handling activities, the labour problems, particularly the hiring and training of dockers, the rates for lighterage operations, as well as a programme for the progressive implementation of the proposed measures.

In the technical field, the outline of a new system is added to the handling records. The second record sheet carries the same sections as the first one. The changes cover, or can cover, cargo-handling procedures, the composition of the teams, the equipment utilized and storage information. Delays due to faulty planning are systematically eliminated. The equipment required, the duration of the cycle and the handling costs for on-shore movement are calculated by using various hypothetical distances travelled. In addition to the new marginal costs, the handling costs include the supplementary costs incurred for storage (warehousing), receiving or shipping (palletizing) in accordance with the new system. The costing can be extended further and take into account other advantages: reduction in the costs of other functions, reduced damages and time, and increased rates for floor space.

In the last phase of the study, we finally determine the technical, social and financial implications of the suggested changes for the various types of handling, until we have an overall picture of the cargo-handling system. We will then have a valuable criterion and for the selection of improvements for establishing the best priorities.

This work is accomplished in two phases. The first consists in establishing a model of the current situation and in facing the results obtained with reality. This is effected by means of Program 1, which makes it possible to:

- define the distinctive elements for each group by using the data available on products included under this Program.
- check the accuracy of the man-hours and equipment time reported.

In the course of the second phase, it will be possible, by means of Program 2, to assess, for a given year, the annual man-hours and equipment-time as well as the corresponding costs, by using the distinctive elements for each group. This assessment is made group by group and includes a final total. Of course, the program allows for measurement of the incidence of changes applying only to specific cargo categories or including various possible levels of improvement. These various hypothesis make it possible to evaluate the labour-force as well as capital and operating equipment costs. A comparison of the results can enlighten those responsible on:

- the selection of working methods;
- collective bargaining with personnel;
- tariff studies;
- preparation of a capital equipment budget;
- assessment of port facilities;
- administrative reforms.

Despite the uncomplicated method used, we are thus in possession of a powerful and flexible tool whose interest goes far beyond the simple improvement of present cargo-handling methods.

Jacques GRUOT

(9)

INTERNATIONAL COOPERATION IN PORT POLICING

BY

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The security of waterborne freight in the ports and harbours of the world presents a serious problem. The problem is not unique to any one country. It damages the reputation of the seaports of the world and affects the economy of our countries.

Property crimes in the form of cargo theft, both of the opportunity type or planned, take place, the extent of which we seem unable to measure statistically because of the peculiarities in the method of doing business in the waterborne freight industry.

No other crime committed against society has such international similarity in its modus operandi or universal effect on the world's economy as does cargo theft. It is one crime about which the police forces of the world should be able to communicate clearly, even through the barriers of language.

As ships engaged in international trade move over the oceans of the world, the geographic aspect and languages spoken change. However, other things do not change. In most cases the ships and their crews are the same and the crimes usually found in port areas do not vary greatly.

The most common criminal offence committed in the waterborne freight industry is theft. Theft in these terms is stealing the whole package and pilferage is stealing part of the contents of a package.

Thefts which commonly take place in the movement of cargo in international trade are:

(a) High-value cargo for export or coastal trade moving through a port for loading aboard a ship is vulnerable to theft. Cartons, packages and even containers may be stolen or hidden elsewhere in the port area for disposal later. The cargo may be documented as having been placed on board a ship. While awaiting boarding the cargo is also subject to pilferage;

(b) Cargo on board a ship is also vulnerable to theft or pilferage by the crew or by port workers at intervening ports of call. At the port of destination a successful police investigation and recovery of the goods is very unlikely;

(c) Import cargo destined for discharge at intervening and final ports of call may be stolen. If there are several ports of call the investigation of losses is most difficult. The experienced thief will steal cargo desined for the last port of call, knowing that detection will be most difficult if not impossible. The problem is compounded when ships call at ports of several countries;

(d) Cargo which does not arrive at its port of discharge is listed as "shortlanded." It may well be that so-called "shortlanded" cargo has actually been landed and stolen;

(e) Some cargo is "overlanded" at the wrong port by mistake, or possibly by design, and it also may be stolen;

(f) Cargo in first class condition may be stolen and removed from the port under the guise of dunnage or salvage, or it may be removed by truck hidden under salvaged goods being legally removed from the harbour.

The increased use of containers to transport waterborne freight has created new problems in cargo security. There is a false sense of security in the concept that the use of containers eliminates theft. This is only true in respect to pilferage. There have been thefts of containers and their contents valued at many thousands of dollars. These thefts are carried out by professional criminals who have access to information involving the international movement of containers. A successful theft requires planning and cooperation to locate the containers and the heavy equipment to move them.

We in Canada have been quite fortunate so far in respect to the theft of containers. Some countries have not been so fortunate. One seaport in the United States suffered 25 thefts of containers in 1967; 41 in 1968; 50 in 1969, and expected greater losses in 1970.

On many occasions the police investigation of cargo thefts would be greatly facilitated by the exchange of information with the appropriate police agency at the port of origin or at intervening ports of call. Strangely, there is very little exchange of information between the police forces having jurisdiction in port areas throughout the world.

While it is not the complete answer to the problem of theft of cargo moving in international trade, the regular exchange of police information between police forces would help to identify the ships and crews most frequently involved in cargo irregularities. At present there is little information available and nothing much develops unless there is a major crime.

The fact that a ship has stopped at several ports en route makes the police investigation difficult to pinpoint where the loss occurred. Most ships are in port for a short period of time which underlines the absolute need for a method of rapid communication on a priority basis.

It is the general view of persons concerned with the security of waterborne freight that crime prevention and detection methods and techniques have not received attention at ports handling international cargo. The opportunity to commit crimes must be reduced. This can only be accomplished by the waterborne freight industry, labour force, and port management working with the police and security forces to correct the situation.

The need for an international forum where port police and other law enforcement agencies can meet to exchange ideas on crime prevention and detection methods affecting international cargo has now been recognized.

The International Association of Port Police was formed in 1970 and the Association held its first annual meeting in New York City in October of last year. The next annual meeting will be held here in Montreal in October 1971.

The aim of the International Association of Port Police is to tighten security for both air and ocean cargo at all points along the international route a shipment takes. By exchanging police and security information and ideas about cargo protection the Association plans to provide international freight with a more stabilized degree of security than is presently possible. It is the view of port police and security officers that there is no point in having good security controls at one port through which a shipment passes if protection is poor or non-existent at another port where it is handled.

A most important objective of the new Association at the moment is to identify the police agencies having jurisdiction in all ports handling international cargo. At present there appears to be a conglomeration of authorities involved in port policing, i.e., municipal police, state or provincial police, port police, or in some countries, the national police force. The International Association of Port Police is currently developing a directory of port police forces so they will be able to contact each other readily.

As the first President of the International Association of Port Police I would urge you to send your police representative to the next meeting here in Montreal. I am confident that with your help as port administrators this Association will become an important and vital factor in worldwide port security. Besides North American ports we had representatives from East Africa, Portugal and Britain at the first conference. We would like to see many more countries represented at the next conference here in Montreal, October 5, 6 and 7, 1971.

We have also enlisted the aid of the International Criminal Police Organization (Interpol). At my request, the Canadian delegate, as represented by the Royal Canadian Mounted Police, presented the problem of cargo security to the 39th General Assembly Session of Interpol at Brussels in October 1970. As a result that august body adopted a resolution suggesting that the authorities responsible for criminal investigation as seaports and airports contact the appropriate national authorities whenever the co-operation of a foreign police force is required.

In recent years Canadian ports have adopted a more professional approach to policing harbours handling general cargo. The National Harbours Board unified its several police forces into one national organization in 1968. The force functions under a central headquarters in Ottawa with field units located at major ports handling international cargo and a police service available to smaller harbours on a system-wide basis.

Within our own police structure we are developing a two-tier law enforcement organization.

The first tier is the professional police force and the second tier are security guards. The security guards are selected and trained by the regular police and function under their command and supervision.

Under this concept the security guards meet our own requirements for watchmen and gate guards and we may also rent their services to port users to perform their cargo protection duties.

As the port authority we control the physical security requirements of our ports.

We firmly believe there must be several levels of physical defences to control the movement of persons and vehicles for the safety and security of the port workers and port users, and the protection of our property and the property of others. This can only be achieved by one or more of a total security system which includes:

(a) perimeter fencing and gates;
(b) fencing and gating internal complexes of groups of wharves, sheds and piers;
(c) truck marshalling yards;
(d) controlling all locks and keys;
(e) good lighting;
(f) no parking of privately owned vehicles in or near the sheds or piers.

The number of gates at the perimeter of the port should be kept to a minimum and manned by security guards supervised by the port police. The gates should be closed and locked during silent hours and on weekends with the bare minimum kept open to traffic and controlled by security guards.

The gates at the entrance or exit to complexes should also be manned during business hours and closed and locked during silent hours.

Where needed there should be truck marshalling yards where all trucks must report and await a call to pick up or deliver cargo to terminals.

All keys and locks must be controlled by the port authority. When a lessee gives up a shed the locks should be changed.

There should be good lighting, particularly at gates and other vulnerable areas, and of all roadways in the port.

The privately owned vehicles of port workers and port users must be controlled and wherever possible there should be parking lots fenced off from cargo areas.

As the port authority we erect and pay for boundary gating and fencing. We will erect fences and gates at complexes at a cost to the lessee.

We have also assigned police officers at each unit to work closely with the waterborne shipping interests and terminal operators to liaise on all matters of mutual interest and to give advice on physical security and other forms of protection.

At the major ports we have implemented a system to give added protection to high-value cargo entering or leaving our ports. Steamship companies, freight forwarders and insurance underwriters notify us regularly on the movement of high-value cargo and we increase our police patrols and cargo checks in the area. The system has brought exellent results. Strangely, some companies fail to take advantage of this added protection and neglect to notify the police when they move high-value cargo through the port.

Our police force is hampered in its efforts by the lack of reports on thefts or suspected thefts of cargo and the statistical information which is a by-product of any worthwhile reporting system.

To overcome this problem we in Canada are developing, in co-operation with port users, the establishment of Port Information Centres at the major ports. These centres will collect reports on overlanded, shortlanded and damaged cargo, and collate, analyze and disseminate cargo information within the port community and between ports. The police would be immediately notified of those losses of a criminal nature for investigation, detection and prosecution of offenders. Under the arrangement envisaged the lessees and terminal operators would be compelled to report missing cargo. The system is being developed in co-operation with shipping agencies, marine underwriters and port users.

There is much activity going on at a number of seaports throughout the world to improve waterborne freight security. We need a regular means to exchange new security methods between our seaports so that all of those who want to may benefit. One way to do this is for each and every seaport handling international cargo to join the International Association of Port Police which has for its objectives:

(a) to prevent and detect criminal activity affecting the international shipment of cargo;
(b) to study and recommend methods and uniform practices for establishing safeguards against the loss of international cargo; and
(c) to encourage and develop the exchange of information and co-operation among law enforcement agencies concerned with criminal activities in the ports.

Once again, I cordially invite you to send a representative to the next Annual Conference of the International Association of Port Police which will be held here in Montreal, October 5, 6, and 7, 1971.

Handling of Containervessels Beyond the 3rd Generation

(As Proposed by Meeusen Consultants, June 1971)

Adapted from Rotterdam Europoort Delta, 71/2

Foreword

Few developments in world trade have provoked so much discussion and have had such a profound effect on port development, as the trend in shipping technology characterised by the simple word 'containerization'.

Already in the short span of less than two decades the containertrade has evolved to such an extent that the third generation containerships is now being built; ships with previously unheard of speeds; dimensions and load carrying capabilities.

Whether or not this generation will be, for a considerable period, the last generation nobody can say for sure. There are however very strong indications that the volume of world trade in the decades ahead will expand enormously and this in turn will obviously have its impact on shipping generally and will perhaps revolutionize shipping technology even more than it has to date.

It is therefore prudent to study new ideas and systems in this regard with a view of determining how they might fit in the existing pattern of a port and its infrastructure.

With this in mind we are pleased to present in this publication such a new system as it might perhaps be incorporated in one of Rotterdam's newest harbour projects, when conditions are right.

The system is one that has been developed by 'Meeusen Consultants' of Barendrecht, Holland and is what may be termed an 'integrated container handling system'.

There are no doubt still many questions to be answered and a number of problems to be solved before such a system can be realized at a particular location.

The publication of this article by Mr. P. Meeusen, Ing., hopefully, will contribute to the knowledge of what may be needed for the period beyond the 3rd generation containervessels.

Economy of scale

It is generally believed that the dimensions of the third generation containervessel will not be the absolute maximum. For practically all types of ships the economy of scale results in substantial savings. Only ten years ago an oil carrier of 30,000 dwt was a big ship. Today we are used to ships which are 10 times bigger. Containervessels similarly are becoming larger and larger. Fig. 1 shows that containerships have even grown relatively faster than tankers.

The third generation containervessel has the maximum breadth limited by the Panama Canal. Some people think that the third generation will be the final generation, but others believe the economy of scale will proceed further.

Ships that exceed Panama Canal limitations

One of those who think that the next generation containerships will exceed Panama Canal limitations is the American Eric Rath from California. He thinks the long-haul container route is the next step for the future international pool-ships owned by consortiums. They will provide the lowest costs world-wide cargo service.

For many years the Mexican Government has talked about the idea of replacing the Panama Canal link by establishing a transfer service via the Isthmus of Tehuantepec (see fig. 2). Mr. Rath suggests a container service from Rotterdam via the southern part of the United States to this Isthmus, lined up with a service from Mexico direct to Japan, Hong Kong and Singapore. For such a service the present system of container-handling, the present type of containerships and the organization of the terminals are not adequate.

The present cellular containership

The bigger the containership with vertical cells, the longer the hoisting height and horizontal transportation will be due to the depth and the beam of the ship.

The relationship between the necessary average time for one crane cycle and the ship's dimensions are roughly shown in fig. 3. It demonstrates that the cellular containership with a capacity of 3.000 container-units is no longer an economic proposition. According to this graph the average crane cycle for such a ship is about 3½ minutes. If 3.000 containers are discharged and loaded the total crane handling becomes:

$$\frac{2\times 3.000\times 3\frac{1}{2}}{60\times 24}=14\frac{1}{2}\text{ crane days.}$$

When using 4 cranes the port-turn-around-time would be about 3½ days. The number of days can perhaps be reduced by employing more cranes (or spreaders), but the risk of congestion behind the quay walls will be considerable.

Also from the technical point of view a super cellular containervessel is not ideal. The small block coefficient (d) makes that under the deck a relatively small number of containers can be loaded. Containers on deck are of great influence on the stability so that much waterballast must be loaded.

Due to the vertical cells the upperdeck is mainly open, resulting in problems for the ships' longitudinal strength and torsion. Heavy structural elements have to be used in order to compensate for the large openings in the decks. The weight of these heavy parts raises the center of gravity of the empty ship and reduces her stability.

The ship will not be stable enough without many tons of waterballast. Therefore cellular containerships bigger than the third generation will for most harbours have too much draught. Only ten percent of all harbours in the world have a depth of more than 43 ft. From this it would appear that the size of cellular containerships is limited.

The present container terminal

If with the present conventional terminals the throughput becomes much bigger, serious problems of congestion will arise. As the terminal enlarges, its internal transport distances increase and longer cycles for handling a container must follow. The problem will become even more serious if more trains and trucks must be loaded and unloaded in the shortest possible time by a human transport chain (with trailers, vancarriers, etc.) requiring a considerable number of personnel.

Because of this need for so much personnel, which will be subject to errors in carrying out the instructions of a computer, present container terminals will only be suitable for a restricted application of computers. So indications are that the large capacity of containerships and terminals of the future will require an entirely fresh approach.

The operator of a main terminal should have at his disposal mechanized and automated handling equipment. Labour should be reduced to an absolute minimum to eliminate as much as possible the effect of strikes and the occurrence of human errors. This goal can be furthered by the application of computer control. Ideally it should be possible to 'turn-around' a large containervessel carrying 3.000 containers within 15 hours. To achieve this the design characteristics of super containerships have to be more closely related to the loading and unloading phases of their operation.

Integrated ship and terminal

To attain this it is necessary to discontinue established methods of cargo-handling.

Present container—handling operations have altered these methods but little.

Meeusen Consultants consider that the centuries old vertical handling methods should be replaced to a maximum extent by horizontal transport systems to achieve speed and to gain better economy.

Also full integration between ship and transport system must be effected, involving a major change in ship design.

FIG. 1

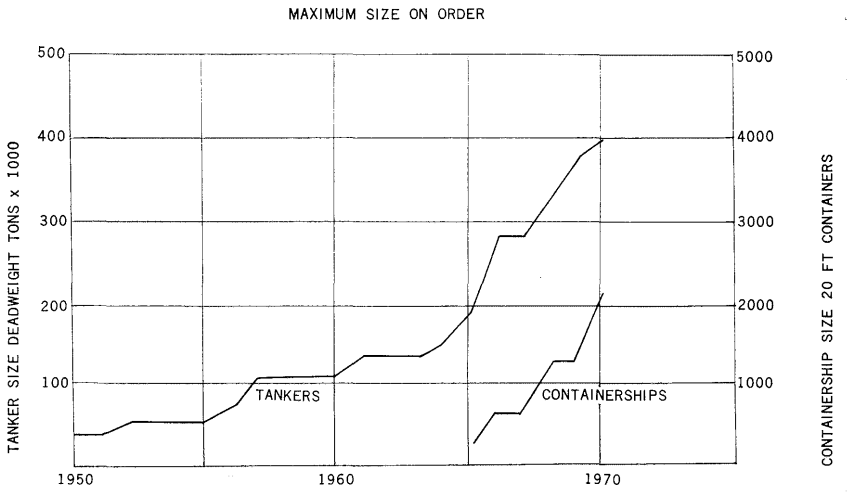


FIG. 2

FIG. 3

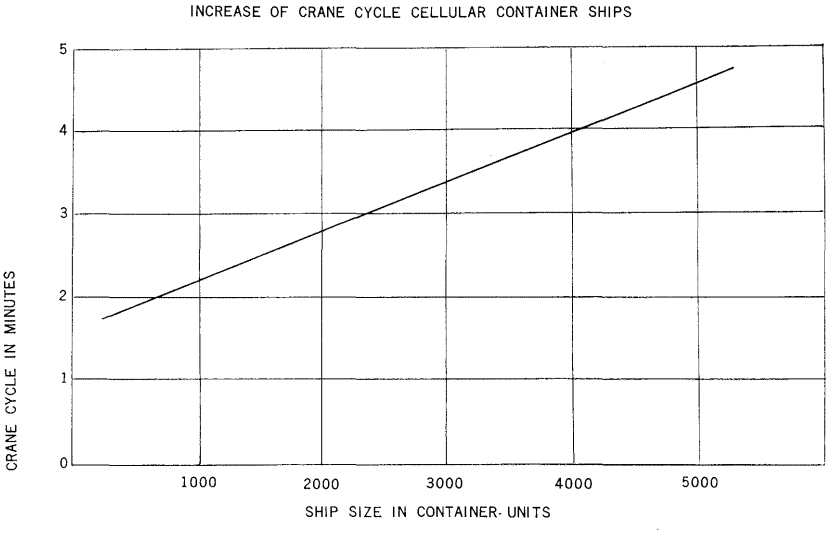


FIG. 4

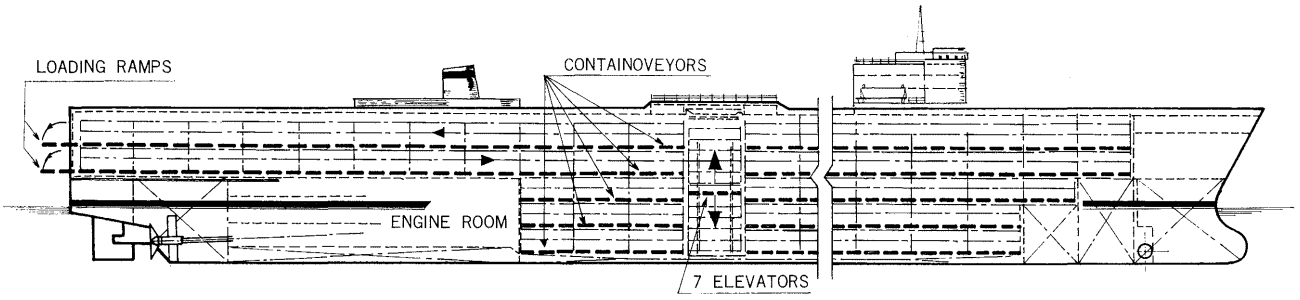


FIG. 5

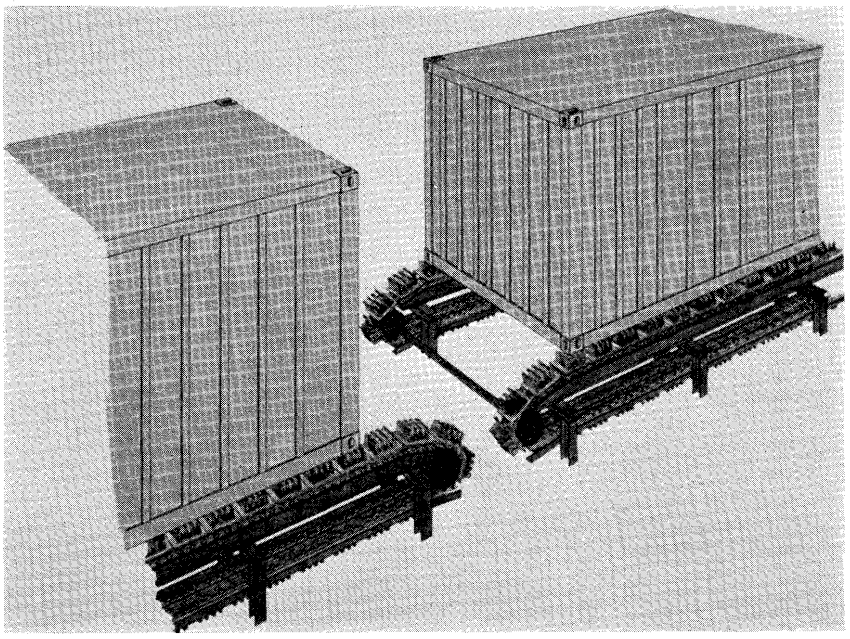
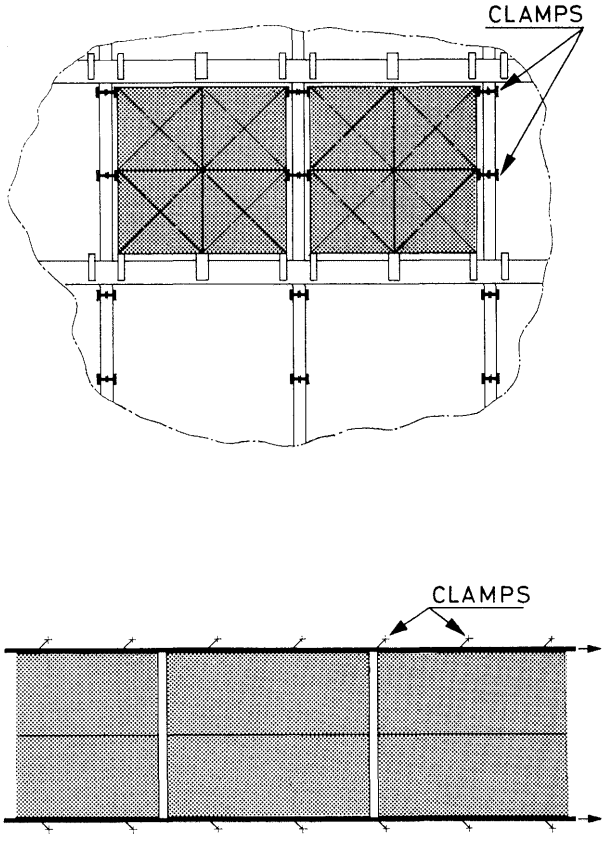


FIG. 6



Radical ship design changes

Instead of cellular containerships with open decks the new design containerships will have completely closed decks (see fig. 4). The ship will have no vertical cells, but horizontal, longitudinal lanes beside and above each other from the bow to the stern. The containers from the lower lanes are moved to the higher lanes and vice versa by means of elevators. Two lanes of the higher levels are used for loading and unloading the containers in continuous streams to and from the terminal.

All lanes are provided with heavy duty conveyor belts which will have to meet special requirements due to the heavy loads, different bottom constructions of the containers, the protruding corner castings and so on. The existing types of belts do not meet these requirements, so specially designed conveyor belts are to be constructed. A possible solution for this problem is the so-called containoveyor (see fig. 5), which is of a revolutionary conception. It is provided with rubber pads and is suited for any type of container, regardless of its bottom construction. Its energy losses due to friction are extremely low.

Each lane inside the ship has two containoveyors beside each other, upon which travel containers two-high in order to save space. On the containoveyor the containers can travel with practically no interspace in the longitudinal direction.

Between the containers in cross wise direction there is sufficient space for the guide-rails and the clamping arrangement. All containers are clamped simultaneously by excentrical rails (see fig. 6) controlled from a central position, saving many manhours and cubic space.

In the stern, ramps fitted with containoveyors on the inside cor-

respond when lowered with containoveyors in the ship as well as those on the quay side loading platforms.

With the integrated system the two highest decks correspond with two loading platforms one above another on the quay side.

After several lanes have been unloaded the loading can start via the uppermost platform, while the unloading is continued via the lower platform. Loading and unloading operations can thereafter proceed concurrently, thus the ship will have little change of trim. Eventually the platform can follow the trim of the ship. In one elevator cycle two containers stacked on top of each other are elevated and lowered within 6 minutes.

The number of elevators corresponds to the number of adjoining container lanes. In the example shown in fig. 4 there are 14 of these lanes. This means that the elevators can carry within 6 minutes: $2\times2\times14=56$ containers and thus in one hour about 500 containers.

The integration

In order to obtain the best economy during loading the ship must be integrated with the terminal. Just as the ship's containoveyors are to correspond with those on the platforms, also the system of transport on the terminal must correspond with the platforms (see fig. 7).

The example is slightly different from the Rijnpoort Container Terminal for which this study was made.

The containers stacked two-high on the containoveyors in the ship may have different destinations, so that on the terminal apron the containers are transported one high. Hence the containers are to be lifted one by one from the platforms. For this function special overhead cranes are proposed, which are very fast and able to place the containers on different belts according to destination i.e. road, rail, feeder, etc.

On the terminal-containoveyors the containers can be transported in different directions. The direction can be chosen according to destination. At first most terminal-containoveyors will be engaged for unloading but after some time of these containoveyors will be engaged for loading, others for unloading. When all units have been discharged, all containoveyors will be engaged in the loading direction.

FIG. 7

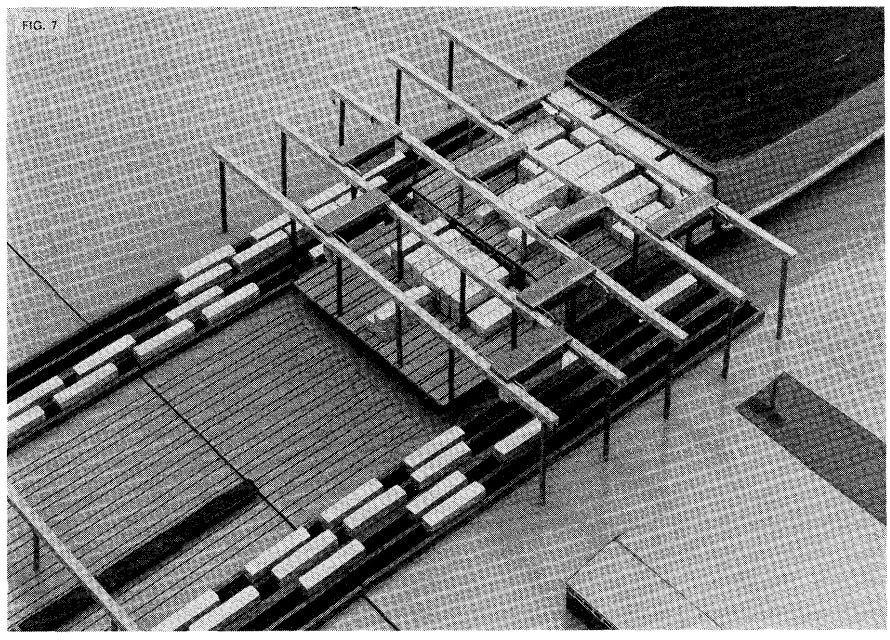


FIG. 8

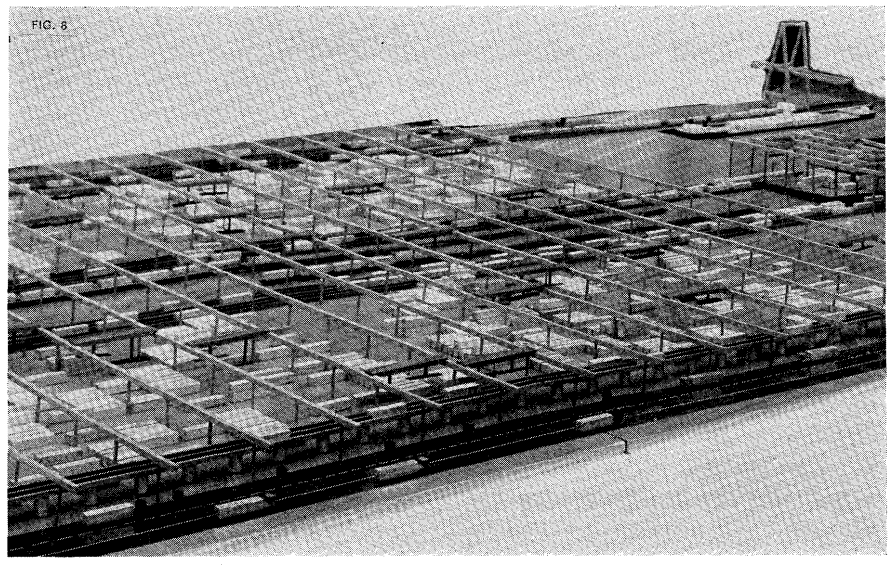
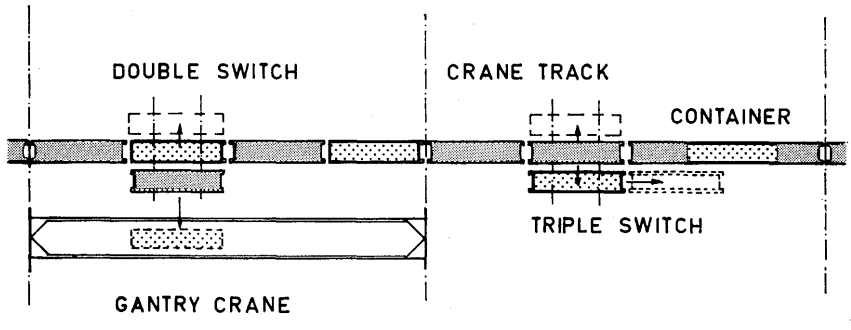


FIG. 9



Terminal layout

For fast transportation in cross direction over somewhat longer distances overhead cranes are most suited, as has been proven in the shipbuilding industry. An example of such a terminal is shown in fig. 8. Overhead cranes operate in the direction of the stacking bays. Containoveyors run perpendicular or under an angle to these bays. The overhead cranes take the containers to and from the containoveyors or

stacking bays and deposit these on trains or trucks.

In order to reduce the cycling time as much as possible the speed of the containoveyor must be relatively high. The overhead cranes can pick up the containers only when at the complete standstill and therefore congestion on the containoveyor must be avoided.

The containoveyors consist of sections of about 40 ft. each. At each stacking bay there is at least one switch on which containers can be moved sideways. A switch (see fig. 9), specially designed for this purpose, consists of two or more containoveyor sections beside each other fitted on one frame with driven wheels and cross rails.

If a container stops in a certain bay, it will be moved sideways while the other (empty) containoveyor section can come in its place, so that the chain of sections will be closed again. It takes only about 10 seconds to move a container sideways. The speed of the containoveyor is so high that eventual delay caused by the switches should not be a problem.

The special overhead cranes must allow a speed of 200 m/min. For this purpose electrically or mechanically controled antisway systems can be used. One of these systems frequently in use in shipbuilding industry and produced by Messrs. H. Nielsen and Son in Copenhagen has a spreader connected to a turntable hanging in 16 wires making 4 crosses at each side of the turntable, so that the container cannot sway during acceleration and strong wind.

The integrated system will be further discussed on the basis of the example for a possible application in the future Rijnpoort harbour in Rotterdam.

Handling capacity of proposed terminal

It is understood that Rijnport's throughput of containers will be built up in stages. Three stages are being envisaged, which can be outlined as follows:

1st stage:
annual throughput of 500.000 containers. Consideration should of course be given to the fact, that the capacity of Rijnport during this initial period will be enlarged only gradually.

2nd stage:
increase of annual throughput up to 1.000.000 containers.

3rd stage:
annual throughput of 1.500.000 containers or even more.

The geographic location of Rijnpoort

On the North bank of the 'Nieuwe Waterweg' about 5 miles from the North Sea, Rijnpoort's location is ideal for container liners and feeders Rijnpoort will be able to accommodate the biggest containerships now envisaged. A direct connection with the river opens the possibility to transport containers to and from the hinterland by riverbarges.

According to a published study made by Meeusen Consultants transportation of containers by riverbarges can be very efficient provided the right barges and system of inland terminals will be used.

Moreover first class roads and railways are available, while skilled people can offer service day and night.

Tenth Anniversary of The Israel Ports Authority

1961—1971

History in Brief

The Israel Ports Authority, which is marking its tenth year, has achieved much in managing, operating and developing Israel's ports.

With its establishment in July 1961, the Authority faced a great challenge fraught with responsibility. The rapid overall development within the various branches of the economy, the population growth and rise in standard of living, the expansion of foreign commercial ties, and the technological advances in world marine transport—created a vital need for a "general revolution" in the ports at that time. It was clear beyond any doubt, that immediate action was needed to bring the capacity, the pace of work and the cargo-handling methods of Israel's ports, up to world standards and latest development.

The development goal in the ports was based, in those days, on cargo forecasts which were themselves based on statistics received from various government offices, industries, importers, etc. Thus, for example, a forecast made in 1961 predicted that the total cargo volume to pass through Israel's ports in 1969/70 would reach approximately 6.7 million tons. Despite the fact that the forecast was made nine years earlier, it was nearly accurate: the cargo volume that year totaled 7 million tons. Based on these accurate forecasts, and anticipating future developments, the Authority could advance its plans in accordance with the changing needs of the ports, and thereby prevent unprofitable investments.

When the first organizational plans were begun in July 1961, the Ports Authority concentrated on building a deep-water port in Ashdod, developing the Haifa port, and building the new Eilat port. It was apparent even then, that the ports of Haifa and Ashdod would be a kind of unified Mediterranean port with each supplementing the other and enabling regulation of operations and optimum use of manpower and equipment, while the port of Eilat would become the bridgehead for commercial development with Africa and Asia.

Cargo Traffic and Development

The Authority's activities expanded from year to year, stimulated by the growth in cargo traffic. In ten years, cargo traffic has more than doubled, totaling nearly 8 million tons during 1970/71, as compared to 3.3 million tons in 1961/62, with citrus export via the ports having grown from 17.4 million crates in 1961/62 to 51 million crates in 1970/71.

The Authority concentrated on adopting new handling systems (pallets, Slings Containers and others) and accelerated the trans-

formation to "unitized cargo", which results in maximum productivity and minimal ships turnaround time in port.

The Ports Authority has functioned in two simultaneous channels: technological and physical development of the ports, and the establishing of tariff incentives.

During its ten years, the Authority has invested some IL 300 million in the development, expansion and deepening of the ports, and in the acquisition of modern handling equipment.

These activities have expanded the ports' capacity, increased work productivity, and enabled the modernization and efficiency of cargo handling. At the same time the Authority established reduced tariffs for "unitized cargo", as distinct from cargoes that are not unitized. This activity has given strong impetus to port users, with projected benefits for the ports and the economy.

Examples of the Authority's activities are as follows:

1. **Storage space** has increased, within the last ten years, from 249,000 sq. meters to 524,000 sq. meters in 1970/71.
2. **Quay length** in the ports has increased from 5,127 meters in 1962/63 to 7,025 meters in 1970/71.
3. **Ship calls** (freighters and passenger vessels) in the ports have increased from 1,975 in 1962/63 to 2,897 in 1970/71.
4. Growth in **unitized cargo traffic:** Total import and export of unitized cargo in 1969/70 was 255,000 tons; the forecast for 1971/72 is 700,000 tons. Total import and export of containerized cargo in 1969/70 averaged 24,000 tons; the forecast for 1971/72 is 250,000 tons.
5. **Citrus export** through the ports increased from 17.4 million crates in 1961/62 to 34.7 million crates in 1966/67, and 51 million crates in 1970/71.
6. **The Authority's income** increased from IL 49.5 million in 1962/63 to IL 181.8 million in 1969/70.
7. **The Authority's expenditures** increased from IL 44.9 million in 1962/63 to IL 180.4 million in 1969/70.

Vocational Training

During its ten years of activity, the Authority has emphasized the importance of offering vocational training to workers in the various ports. A network of training programs was initiated in the port professions and this training was an important incentive for job advancement while also increasing work productivity.

A total of IL 7 million has been invested by the Authority to date in vocational training, extended to more than 7,500 workers for various vocational courses. With the number of permanent staff at 4,500, each worker has therefore passed more than one course. Many workers have thereby advanced in their jobs and in their field.

The following chart shows the growth of professional training for workers during 1961/71:

The Port	Number of Trainees	Number of Classes	Hours of Instruction
Haifa	3,163	231	16,038
Ashdod	3,189	325	50,672
Eilat	806	70	2,327
Central Training	411	20	1,208
Total	7,569	646	70,245

The Port of Haifa

The Port of Haifa has been under the jurisdiction of the Ports Authority from July 1, 1961. In 1968 the Authority also took charge of the United Port Services, a private company which until then had provided stevedoring and porterage services. The port thus became self-operating.

The total investment in the Port of Haifa and the Kishon Zone since the establishment of the Authority, was approximately IL 40 million. The main quay was extended by 528 meters (in 1963), and the cargo quay in the Kishon Zone was extended by 258 meters. Work on the latter included the construction of the quay itself, marine dredging, pipe-laying, paving and fencing. The quay was operational in 1964, and in that year a 5,300 sq. meter transit shed was aslo built. The total area of transit sheds and open in the Port of Haifa, during the initial development phases of the Authority, was 18,000 sq. meters, which represents a 30 percent increase in storage area since 1961.

During the intervening years, the Port of Haifa acquired varied modern equipment. At present, it houses 25-ton bridge cranes, and by the end of 1972 a 40-ton bridge crane with complete back-up facilities for container handling will be operational. These specialized facilities will constitute an important turning-point in the Port's progress, and will mark its entry into the container era.

The Port of Ashdod

The Port of Ashdod is being developed in three phases according to a Master Plan. During the first stage, which encompasses the port today, a 2,200-meter-long breakwater has been built, with another 900-meter breakwater located north of it. At the southern end of the port a bulk pier has been constructed, with bulk-handling installations for phosphates and potash. A 680-meter-long pier was built near the northern breakwater, near which, at a distance of 150 meters, a 440-meter pier for citrus handling was constructed, the width of which measures 190 meters. In mid-1969, an additional 180-meter-long marginal quay along the shore was built. Here the water reaches a depth of 7 meters, and this quay is mainly for small and medium boats.

At present, the port can service 14-16 ships simultaneously. This capacity will increase when the expansion of the southern section of the citrus quay is completed, and with the construction of a specialized container-service quay will house 40-ton bridge cranes.

In addition to marine works developed in the port, a number of civil engineering projects have been completed, including the building of sheds, dining hall and services, offices, workshops, stores, a network of roads and railroad tracks, paved areas, etc. Portal cranes of 25 tons for containers have been installed recently. The total investment in the Port of Ashdod is about IL 200 million, which represents about 70 percent of all Ports Authority investment in Israel's ports since its establishment.

The Port of Eilat

The Ports Authority has long been aware that with the expansion

of commercial ties between Israel and the countries of Asia, the Far East, East Africa and Australia, the old quay in the Port of Eilat would no longer be able to handle the increasing cargo volume.

The length of the main quay in the new port today is 528 meters, as compared with 172 meters in the old port, enabling 4-6 ships to anchor simultaneously.

The overall cargo capacity of the port is over one-half million tons of general cargo, and 1.5 million tons of bulk cargo.

Today, the port is equipped with cranes with ample lifting capacity. The largest of them, soon to be operational, will have a lifting capacity of 25 tons. The port's considerable up-to-date mechanical equipment includes forklifts, tow-tractors and various handling devices. The port also has storage areas and refrigerator storage facilities. The number of cargo vessels passing through Eilat continues to grow: 52 cargo vessels called there in 1965/66, while 94 cargo vessels called there in 1970/71.

THE FUTURE

Increase in Cargo Traffic

During the next few years, a great increase is anticipated in cargo volume passing through Israel's ports. Forecasts predict that this growth will reach some 11 million tons in 1976/77. Simultaneously, container traffic is expected to increase rapidly, reaching 150-160,000 containers annually in three to four years. In a relatively short time, ships with a capacity of 1,200 containers, as compared to ships with a capacity of 400 containers today, are expected to call at Israeli ports.

Development of The Ports in The Near Future

In view of this rapid development, the ports' plans are being examined and updated to guarantee efficient handling of all of the outgoing and incoming cargo, and rendering proper service to shipping and commerce.

In the next five years, some IL 250 million will be invested in the development of the ports, expansion of their cargo capacity, and acquisition of specialized equipment for marine and land container handling. These development plans are based on assumptions made by the Authority and checked out with shipping firms. The plans comprise three phases:

PHASE 1: Installation of a container berth in each of the Mediterranean ports and equipping them to handle 20-foot and 40-foot containers in minimum time. Thus, the profitability of container ships will not be jeopardized by undue lengthening of turnaround time. During this phase, the appropriate berth in each port will be equipped with a bridge crane and an additional two cranes of 25 tons, which are being installed in the ports right now, and with the other necessary equipment for container handling on the quay and in storage. This phase has been initiated, with the equipment already ordered, and with plans for the development of the quays coordinated accordingly.

In the Port of Haifa, the western quay will be fitted out with equipment to handle boats with large containers during the latter half of 1972. The bridge crane to be installed there will unload and handle 40-foot containers; the 25-ton cranes now being installed on the quay can handle 20-foot containers (presently arriving at the rate of 1,000/month).

In the Port of Ashdod, ships with 20-foot containers will unload at quay no. 1 until the autumn of 1972, when the first berth on quay no. 7 will be completed and the bridge crane now on order will be operational. In this phase, each of the ports will have a handling capacity of 30-40,000 containers/years, using the new berths as well as all of the handling equipment of other cargoes.

The Port of Eilat, too, will undergo further development to expand its handling capacity. This expansion, already underway, includes installation of 25-ton bridge cranes for container handling and adequate specialized back-up equipment; expanding storage areas; and developing adjacent areas of the port.

PHASE 2: With the increased development of container traffic beyond the capacity described above, the specialized quay in one of the ports will have to be enlarged, and an additional bridge crane installed. A specific date for this phase has not been projected yet, although the Authority is making necessary preparations.

PHASE 3: With completion of Phase 2, a specialized quay will have been installed in one of the ports, and a berth with a crane will be installed in a second port. With continued increase in container traffic, a decision will be made on operating a specialized quay in the second port, or on an alternative solution. A special team within the Authority is now at work assessing all the factors relevant to Phases 2 and 3, before operational decisions are made. Initial investigations and studies are being carried out as a basis for these plans.

It becomes clear from the above outline, that the year 1972 will see Israel's ports completely prepared for handling containers. The ports will be able to easily handle specialized vessels—even vessels of 1,200 containers. In the Port of Haifa the western quay will serve temporarily as a specialized quay until the opening of the eastern quay specially designed for that purpose, at a later phase.

In the Port of Ashdod, the development plan for the specialized container quay is to be finalized soon, and in the Port of Eilat two 25-ton cranes will be operational, along with land equipment for container handling.

The Port Workers—Equipment Operators

Operating and maintaining this modern equipment will require considerable expertise above today's level. Most of the port workers will eventually become equipment operators, rather than stevedores. The effect of changes in status and job requirements will be vast.

Undoubtedly, realization of the development plans will bring about increased and better service, which is an essential element in the progress of the economy and the nation.

Along with this, the anticipated port revolution will affect not only the ports, but the port users. The turnaround time for ships in port will be reduced, and productivity will be increased—a fact which will compel the port users to supply faster and more reliable information

(Continued on Next Page Bottom)

Orbiter Probe

IAPH News :

Traveler

Mr. P. M. Fraenkel, partner of Rendel & Partners, Consulting Engineers, South Melbourne, Vic., Australia, visited Japan on his way from San Francisco, Calif., U.S.A., to Bangkok, Thailand. He dropped in at the IAPH Head Office in Tokyo in the morning of Tuesday, November 2, 1971 and exchanged views with the office staff there on port situations in the Far East.

IMCO Program

1971
November 1–5
Sub-Committee on Safety of Navigation—12th session
November 8–12
Sub-Committee on Fire protection—12th session
November 15–19
Working Group of the Legal Committee

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for more precise scheduling to take maximum advantage of the revolution in shipping.

Summary

There can be no doubt that vast development is anticipated in Israel's ports. At a later stage, in the 1980s, not only will the ports face technical and technological problems of development and equipment, but also the additional problems of regulating activities in the various ports. Another basic problem will be tied to the specific character of each port in relation to the nature of hinterland industry.

The Authority will have to decide, in cooperation with economic bodies, on cargo delivery policy and on the basic approach to the ports as a primary factor in Israel's economy and in the development of her transportation network.

November 22–26
Sub-Committee on Marine Pollution—11th session
November 29–December 18
Conference on the Establishment of an International Compensation Fund for Oil Pollution Damage and International Legal Conference on Maritime Carriage of Nuclear Substances—at Brussels

1972
January 10–14
Legal Committee—11th session
January 17–21
Sub-Committee on Radiocommunications—9th session
January 24–28
Working Group on Revision of the Collision Regulations—5th session
January 31–February 4
Sub-Committee on Safety of Navigation—13th session
February 7–11
Sub-Committee on Containers and Cargoes—13th session
February 14–18
Sub-Committee on Life-Saving Appliances—5th session
February 21–25
Sub-Committee on Safety of Fishing Vessels—12th session
February 28–March 3
Sub-Committee on Marine Pollution—12th session
March 6–10
Sub-Committee on Subdivision and Stability—13th session
March 13–17
Working Group of the Legal Committee
March 20–24
Maritime Safety Committee—25th session
April 24–28
Sub-Committee on the Carriage of Dangerous Goods—20th session
May 1–5
Ad Hoc Working Group on Facilitation—6th session
May 8–12
Sub-Committee on Standards of Training and Watchkeeping—1st session
May 22
Working Group on Technical Co-operation
May 23–26
Council—28th session
June 5–9
Sub-Committee on Ship Design and Equipment—8th session
June 19–23
Sub-Committee on Fire Protection—13th session
June 26–30
Working Group of the Legal Committee
*July 3–7
Sub-Committee on Radiocommunications—10th session

1972
*September 11–15
Sub-Committee on the Carriage of Dangerous Goods—21st session
*September 18–22
Legal Committee—12th session
October 4–20
International Conference on Revision of the Regulation for Preventing Collisions at Sea
*November 6–10
Maritime Safety Committee—26th session
*November 20–24
Council—29th session
*November 27–December 1
Sub-Committee on Ship Design and Equipment—9th session
*December 4–8
Sub-Committee on Marine Pollution—14th session
*December 11–15
Sub-Committee on Safety of Navigation—14th session
*December 18–22
Working Group of the Legal Committee
* Tentative
(IMCO PROG/41, October 28, 1971)

ICHCA

The 10th Biennial Conference of ICHCA (International Cargo Handling Coordination Association) was held June 14-18, 1971 in the Palace of Congresses and Exhibitions in Madrid, Spain. The conference theme was "Transport Co-

ordination in the Seventies". The 11th Biennial Conference will take place at Hamburg in June, 1973.

Bibliography

CONTAINERIZATION: A BIBLIOGRAPHY—1970, compiled by Dorothy V. Ramm, lists over 1000 U.S. and foreign references issued during the calendar year. It updated earlier bibliographies on containerization prepared by the library (Northwestern University, Transportation Center Library). Listing is by broad subject arrangement; among the topics covered are design and standards; packing, handling, terminals; customs and paperwork; data processing; air; motor; rail; inland water; marine; bibliographies.

The bibliography is available from the Transportation Center's Communications Division, 1818 Hinman Ave., Evanston, Ill. 60201, for $3. Earlier bibliographies are still available: the 1965–68 listing for $2, the 1968–69 listing for $3.

Boom in Halifax

Ottawa:—Halifax received a welcome boost in port activity during June when cargo handled jumped 50% over that of the same month last year. More than 60,000 tons passed through the port and port officials ascribed the increase entirely to Halifax's emergence as a major North American container port. (Canada Japan Trade Council Newsletter)

New Port Director

Hollywood-Fort Lauderdale, Fla., Sept. 21:—Capt. N. R. Bacon, U.S. Navy, (Ret.) was appointed port director of Port Everglades at a meeting of the board of commissioners Sept. 7.

A native of Iowa, Capt. Bacon enlisted in the Navy in 1939 and at retirement in 1961 was commanding officer of the Naval Photographic Center at Anacostia, D.C. In 1941–42 he was with the Flying Tigers in China as a member of the

In civilian life he was associated successively with AMF Inc., Kalvar American Volunteer Group.
and later Metro-Kalvar and American Dynamics International in executive capacities. He moved to Fort Lauderdale three years ago. (Port Everglades News)

Booming Port of Houston

Houston, Texas (Special):—The booming Port of Houston handled nearly 52 million tons of cargo for the first three-quarters of 1971, almost seven million tons more than the same period in 1970 which itself was a record-breaking year.

Inbound cargo amounted to more than 17 million tons, outbound cargo was almost 33 million tons and local traffic tonnage was slightly more than 1.75 million tons.

Of the total 51,772,246 tons registered at the end of September, 1971, some 16 million tons was in foreign trade, another 16 million tons was in domestic coastwise deep-sea trade and the remainder was on inland waterways by barge.

Ocean-going vessel arrivals at the Port of Houston during 1971's first nine months numbered 3,312, as compared to 2,974 for the same period in 1970, an increase of 338 ships.

Port of Houston Authority statistics also show that 1971 general cargo for this period was ahead of 1970's figures by more than one million tons. Of this particular traffic, foreign general cargo made up the bulk, ahead of 1970's figures by 750,000 tons.

Total foreign cargoes, including bulk commodities, was some 4 million tons ahead of 1970's first nine months.

Dollar-wise, machinery, mostly oilfield and refinery equipment, led in exports and accounted for more than $40 million. In imports, transport equipment, mostly automobiles, amounted to more than $46 million.

Other major exports included plastics and synthetic resins at almost $6.75 million, chemicals and chemical products, almost $6 million, and transport equipment at more than $4.75 million.

Major imports included coffee, tea, cocoa and spices valued at almost $25 million, and iron and steel at almost $24.3 million.

If the Port of Houston continued at the same pace set in the first nine months, Port Authority officials said the total 1971 cargo would approach some 70 million tons. The 1970 record was 64.5 million tons, according to the U.S. Army Corps of Engineers.

Officials, however, said various factors would probably tend to make 1971's last quarter below the first three-quarters' average, although they predicted that by year's end the Port of Houston will have exceeded by a large margin the all-time record set in 1970. (Port of Houston News Release)

Chief Wharfinger Named

Long Beach, Calif.:—Harvey H. Harnagel's appointment as Chief Wharfinger of the Port of Long Beach has been approved by the Board of Harbor Commissioners, effective immediately. He has been acting in that capacity since August 1, following the retirement of Francis Asbury.

Harnagel has been employed by the City of Long Beach since 1960, first in the Finance Department and then in Emergency Preparedness. He joined the Harbor Department in 1966 and served as wharfinger until being named assistant chief wharfinger in 1969.

Prior to launching his civil service career, he spent 26 years in the U.S. Navy, retiring in 1959 with the rank of Commander. Harnagel was Commanding Officer of several Navy tankers and Engineering Officer of an Essex-class attack carrier.

Port Operations Director Lee Sellers noted that in his new post, Harnagel will head a 56 member staff of wharfingers, security officers and other division workers.

A long-time resident of Long Beach, he and his wife Bunny have a daughter in college and a son in high school. (Port of Long Beach News)

Barbours Cut Dredging Started at Port of Houston

Port of Houston News Release

(See also article "New, Modern Port Complex Construction to Start Soon" Ports and Harbors, November, 1970, Vol. 15, No. 11, page 20.)

Houston, Texas (Special) — Dredging began last week on the Port of Houston's multi-million dollar container and barge/ship terminal at Barbours Cut half way up the Houston ship Channel at the head of Galveston Bay.

The dramatic new facility when completed will accommodate the huge container and barge carrying vessels now going into service and will place Houston in an enviable position for handling this growing traffic in the Gulf.

The dredging which got under way last week is the initial phase in what ultimately will be a $100 million project to be developed over the coming years.

The first work, which is expected to be completed in 150 working days, will deepen Barbours Cut to a depth of 42 feet and provide mooring dolphins, a T-head pier and walkways for the primary purpose of accomodating barge-carrying vessels, but will also have a secondary purpose of providing two lay berths for conventional ships.

Plans call for the entire first phase of the Barbours Cut facility to be ready by March 1st of next year to receive LASH (Lighter Aboard Ship) vessels now being readied for service.

A giant dredge of the Atlantic, Gulf and Pacific Company, is doing the dredging of an estimated 1.5 million cubic yards of mud and clay which is being deposited nearby to build up the banks around the cut. Cost of the dredging is right at $675,000 and it is estimated that initial mooring facilities will cost an additional $450,000 to build.

Port Commission Chairman Fentress Bracewell, Commissioner R. H. Pruett of Baytown, in whose area Barbours Cut lies, and Commissioner W. D. Haden, II were on board the dredge when work got under way September 16th following issuance of a permit to dredge by the U.S. Army Corps of Engineers.

The Barbours Cut project was announced last year by the Port Commissioners as the Port of Houston Authority's answer to the challenge of containerization and barge-carrying ships. When completed it will cover more than 600 acres with a 1600 foot turning basin and berths for 20 of the gigantic 800 foot and longer container and LASH type ships.

At that time Port Commission Chairman Bracewell stated that the Barbours Cut facility had "distinct advantages over any other such facility announced or planned by any other Gulf port." He pointed to its location at the head of Galveston Bay with quick access to, but protection from, the open sea.

Barbours Cut is but two hours from Bolivar Roads, the entrance to the Houston Ship Channel in the Gulf of Mexico at the mouth of Galveston Bay, and vessels will have a straight run from the open sea to the new facility.

The area is strategically located land-wise, also, lying on the Interstate Highway System within 25 miles of Houston. It is serviced by more than 40 truck lines and the Port Terminal Railroad Association, a joint operation of the six major trunk line railroads already serving the Port of Houston.

Ultimately Barbours Cut will have two container terminals on either side of the Turning Basin as well as a large fleeting area for assembling and discharging barges from the LASH ships. A 200 acre industrial park just south of the Turning Basin will be available for marshalling or assembling cargo for any other port-orientated industry.

Veteran Pilot Honored

Long Beach, Calif.:—Captain J. A. "Jake" Jacobsen, president of Jacobsen Pilot Service, Inc. and Master Port Pilot at Long Beach Harbor for nearly half a century, is now officially an "Honorary Port Pilot" as well.

That special Port of Long Beach title has been bestowed on the still-active mariner by the Long Beach Board of Harbor Commissioners. Board president Llewellyn Bixby, Jr. presented Captain Jacobsen with a ship's wheel clock noting the occasion.

Jacobsen's long career started when he shipped out of Seattle aboard a sailing ship in 1906 at the age of 16. Within ten years he had his Master's papers and commanded a succession of whaling and cargo vessels before coming ashore in Long Beach and becoming a pilot for W. H. Wickersham Co. in 1923.

Shortly thereafter, Captain Jacobsen established his own pilot firm and has provided pilotage service to Port of Long Beach ever since. Among his accomplishments during those decades was aiding present Port general manager Thomas J. Thorley install the first shore-based radar-radio pilot control system in the Western hemisphere in Long Beach Harbor. He also devised the traffic guidance plan still in use today and a model for other ports.

During the 46 years "Capt. Jake" has directed the piloting of over 200,000 ships, there has never been a collision between two commercial vessels. This is a safety record regarded as being just as unique as the Honorary Port Pilot award, which is presented only to a few persons annually who have contributed significantly to seaborne commerce.

President Eisenhower was the first recipient of the award, estab-

lished in 1954 and bestowed on only 36 notables since. (Port of Long Beach News)

Small Craft Facility

Los Angeles, Calif., October 27:—Construction of a new launching ramp for small craft at Cabrillo Beach at the Port of Los Angeles was approved today (Wednesday, October 27). The Los Angeles Board of Harbor Commissioners authorized award of the contract to the Guy F. Atkinson Company of Long Beach.

John J. Royal, commission president, said seven firms bid for the work. Atkinson won the contract with a low bid of $278,260. The job must be completed around April 1, 1972, according to contract terms.

Financing for the project is being provided by the California State Department of Navigation and Ocean Development under a grant of up to $350,000. State engineers will make periodic inspections during the course of construction.

Since land for the facility is provided by the Harbor Department, there will be no land cost reflected in fees charged to the small craft owner using the ramp.

Royal said that construction will include, in addition to the ramp itself, grading and paving, a sanitary sewer and pumping plant, lighting, dredging, public toilet facilities, a protective groin, guide piles, floats, a boat washing facility and miscellaneous related work.

When completed, the launching ramp will be operated by the Department of Recreation and Parks with parking fee set at a minimum level sufficient to maintain the facility properly.

The four-lane ramp will handle an anticipated 20,000 launches (including recoveries) per year, or about 5,000 per lane per year. The statewide average is 3,000 to 4,000 per lane per year.

Construction of the rock groin will separate the boating and swimming areas and create a calm body of water in the boating area protected from southwest and southeast wind and water action. (Port of Los Angeles)

LASH Ship Launched

New Orleans, La., October 23:—The SS JAPAN BEAR was launched today for Pacific Far East Line, the San Francisco-based steamship company that has contracted for a fleet of six of the revolutionary LASH-type vessels.

The SS JAPAN BEAR is the fourth of six LASH ships to be launched for PFEL; the previous were the SS THOMAS E. CUFFE, SS GOLDEN BEAR, and SS PACIFIC BEAR.

Mrs. William G. White, wife of the president of Consolidated Freightways, had the honor of breaking a bottle of champagne across the bow of the SS JAPAN BEAR, sending the ship down the ways in one of Avondale Shipyards' unique side launchings. Congressman Edward A. Garmatz of Maryland was the dedication speaker.

Leo C. Ross, president of PFEL, and Henry Zac Carter, president and chairman of Avondale Shipyards, were among industry executives and shipping representatives who participated in the ceremonies.

The PFEL LASH fleet, including the SS JAPAN BEAR and her five LASH sister ships, will sail from West Coast ports to ports in the Orient and Southeast Asia.

The term LASH stands for the concept of Lighters (barges) Aboard Ship, one of the boldest innovations in cargo shipping in recent decades. The large, swift LASH ships move cargo from place to place in 61-foot seaworthy lighters (barges). Lighters, stowed with cargo, are lifted from the water by an onboard crane and lowered into holds. At their destination, the lighters are released into the water to be towed either to docks or inland facilities. Thus, the LASH ships are completely self-sustaining and do not have to rely on availability of dock space at congested ports. An entire ship can be loaded to its capacity of 1.3 million bale cubic feet in a period of 24 hours.

Following fitting out, the SS JAPAN BEAR will be delivered to PFEL in San Francisco. Between now and the middle of next year, other LASH ships to be launched for PFEL are SS CHINA BEAR and SS PHILIPPINE BEAR. (PFEL News Release)

WTC Tenant Directory

New York, Sept. 17:—The first World Trade Center Tenant Directory was issued today by The Port of New York Authority. It lists 100 international firms and government agencies engaged in world trade activities at the new complex in lower Manhattan.

The tenants, all located in the Trade Center's 110-story North Tower Building—One World Trade Center, New York, New York 10048—include exporters and importers, international freight forwarders and Custom House brokers, foreign government and state offices, manufacturers, steamship lines, ship brokers and marine insurance firms. Only firms involved in world trade activities are eligible to lease space in The World Trade Center.

The 1,500 employees now at The World Trade Center are the vanguard of the 50,000 people who will work at the Center every day when the project is completed in 1973.

The World Trade Center began operations last December 15, when its first two tenants—Irving R. Boody & Co., Inc., Room 1163; and Export-Import Services, Inc., Room 1019—moved into their new offices. The 100th firm, S. H. Pomerance Co., Inc., international freight forwarders and Custom House brokers, moved into Room 1429 earlier this week.

The Directory issued today is temporary. A new, updated edition is expected to be published early next year. The Tenant Directory is available upon request from the World Trade Center Development and Rental Division, The Port of New York Authority, Room 603, 111 Eighth Avenue, New York, New York 10011.

In addition to the North Tower Building, a twin 110-story South Tower Building, a nine-story Customs Building, and eight-story Northeast and Southeast Plaza Buildings are under construction by

(Continued on Next Page Bottom)

Construction of Consolidated Passenger Ship Terminal Was Started

(See front cover)

The Port of New York Authority

New York, Nov. 1:—At an abandoned passenger pier on Manhattan's west side this morning, the Mayor of the City of New York, the Chairman of the Federal Maritime Commission and the Chairman of the Port of New York Authority tugged on a 20-foot length of rope, and a heavy iron railing came tumbling down: it was the first step in the construction of the Consolidated Passenger Ship Terminal that will give the Port of New York the comfortable and attractive passenger facilities it has needed for so long.

Mayor John V. Lindsay, Chairman Helen Delich Bentley of the FMC and Chairman James C. Kellogg, III of the Port Authority joined in initiating the structural alterations that will permit rebuilding of old Pier 88, at the foot of West 48th Street, as part of the new terminal on the Hudson River. City and consular officials, representatives of the maritime industry, longshore labor, and civic and trade associations attended the ceremonies.

Mayor Lindsay, hailing the new facility, said: "The passenger terminal represents the keystone of the City's commitment to revitalize the west side of Manhattan and strengthen maritime improvement. The terminal, along with the Convention Center to be built immediately to the south, will jointly provide a worthy gateway to the City for the thousands of tourists, visitors and convention groups that come to New York."

The Mayor expressed his profound gratitude for the cooperation of the Port Authority, labor groups, and the shipping industry in making the terminal a reality.

Chairman Kellogg noted that the Port Authority had welcomed the opportunity of working with the City to meet the Port's desperate need for new passenger ship accommodations. "Achieving that goal," he said, "has required five years of intricate negotiations involving the most careful cooperation of the shipping lines, of longshore labor, of the City of New York and all its agencies, of the Port Authority and of the Federal Maritime Commission."

He added that, "In two years, the Port, for the first time, will have the kind of passenger facility it has long needed and long deserved. This will make a clear contribution to the growth, commerce and the world prestige of the Port of New York and the people it serves."

The Consolidated Passenger Ship Terminal, under development by the Port Authority at the request of the City, involves reconstruction of the barnlike and obsolete Piers 88, 90 and 92, between 48th and 52nd Streets, to provide six ship berths with the most modern passenger facilities. In addition, Pier 40 at Houston Street will be improved as a companion three-berth facility, thus providing a total of nine steamship berths to accommodate transatlantic and cruise liners.

When the terminal is completed by the end of 1973, it is estimated that 750,000 oceangoing travelers will use the facility during the first year of operation.

The new terminal will cost an estimated $35,900,000. The Port Authority will construct and operate the terminal under a 20-year lease with the City. The bi-state agency will collect user charges from the steamship lines to cover the rental payments to the City and operating and maintenance costs.

Piers to be Rebuilt

The exteriors of Piers 88, 90 and 92 will be rehabilitated and the interiors rebuilt. The second level of the piers; to be heated and air-conditioned, will be used for passengers and baggage. The ground level of each pier structure will be retained as a service area for the delivery of equipment and ships stores. Flat roofs will replace the piers' peaked roofs, with ramps leading to rooftop parking areas. The three piers will be able to accommodate about 1,000 cars.

A 1,700-foot-long roadway leading to the second, or passenger level of the pier will provide convenient access to the new terminal. This vehicular ramp will extend along the entire length of the three-pier terminal. Its 20-foot-wide sidewalk will permit convenient pickup and discharge of passengers and their baggage, thereby eliminating the present congestion on West Street during ship arrival and departure times. The sidewalk will have a concrete overhang and a glass windbreak to provide protection against the elements.

First Contract Awarded

The first contract for work on the new terminal covers the removal of the existing roof from the shed on Pier 88 and also the removal of approximately sixty feet of the inshore section of the Pier Shed, which is necessary for the construction of the access ramp. The $224,000 contract for this work has been awarded to the Demex Corporation of New York City, the low bidder. This job will begin immediately and be completed next February.

Temporary Passenger Facilities

Temporary passenger ship terminal facilities will be provided during the construction of the Consolidated Passenger Ship Terminal at Piers 84 and 86. The two piers will

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the Port Authority around an open plaza of almost five acres. These structures will be opened in stages over the next three years. (News from the Port of New York Authority)

be rehabilitated under a contract awarded to the V.R.H. Construction Corporation of The Bronx. The repair of roof drains, windows, cargo doors, heating, electrical and sprinkler systems, and escalators and elevators in the Pier 84 and 86 sheds are scheduled for completion next spring.

The Consolidated Passenger Ship Terminal was first proposed by Mayor John V. Lindsay shortly after he took office in January 1966. At that time, the Mayor requested that The Pork of New York Authority "undertake a major study of passenger ship terminal operations in the Port of New York and endeavor to formulate, on a realistic basis, a program for development of modern, efficient and attractive terminal facilities for passenger ships on Manhattan's Hudson River waterfront."

After several years of intensive work with the City Planning Commission, the Economic Development Administration, the City's Department of Ports and Terminals, the Office of Midtown Manhattan Development and other City officials and departments, with longshore labor, steamship lines and, U.S. Customs and other Federal agencies, plans for the Consolidated Passenger Ship Terminal were approved by the Board of Estimate of the City of New York on May 13, 1971. On October 22, the Federal Maritime Commission approved the agreement between the Port Authority and the City for the construction and operation of the new terminal.

2 More Cranes

Philadelphia, Pa., September 15: —As a result of increased general cargo business and in anticipation of future needs for handling containerized cargo at the Port of Philadelphia, the City will purchase two more general-purpose gantry cranes, City Representative and Director of Commerce S. Harry Galfand announced today.

One of the cranes will be installed at the Packer Avenue Marine Terminal and the other will be installed at the new Tioga Marine Terminal, making them the second such cranes for handling cargo at these two terminals.

Philadelphia, Pa., October 20:—Mayor James H. J. Tate was the principal speaker at the annual Ports of Philadelphia Day luncheon held on Friday, Oct. 15, in the transit shed of the Tioga Marine Terminal at Philadelphia's waterfront. Highlight of the event was the dedication of the Tioga Marine Terminal, the Port's new 75-acre terminal which is among the finest in the world. Some 900 people in the civic and maritime community attended the luncheon. (City of Philadelphia News Release)

Specifications are being prepared for the new cranes which are expected to be similar to the Kocks cranes presently in operation at the two terminals. The estimated cost is between $1.3 million and $1.4 million each.

While the Kocks cranes are used for all types of general cargo, Galfand said, they are especially suited for containerized cargo. In raised position, the cranes' boom extends about 200 ft. in the air, the equivalent of a 20-story building. They have a forward reach of 113 ft., beyond the outshore rail for loading and unloading ships, and a back reach of 94 ft., from the inshore rail for stacking shoreside cargo.

The cranes each weigh 700 tons, are 93 ft. long, travel on 32 wheels, and have a lifting capacity of 45 tons.

The new cranes will be leased by the City to the Philadelphia Port Corporation which will sub-lease them to a commercial operator. They should be in operation in about 18 months from now since it takes about that time for the awarding of the contract and setting up large cranes of this type.

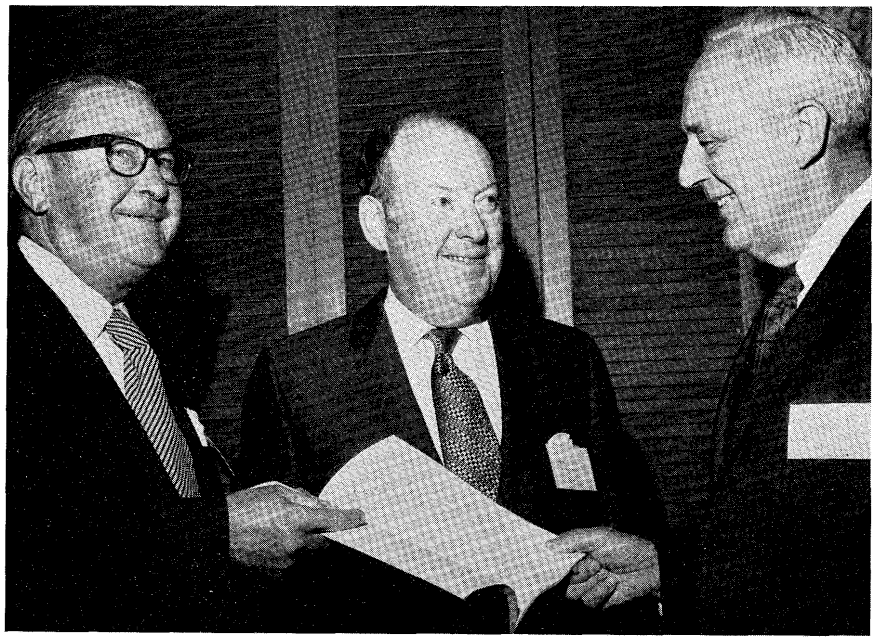
Galfand said the purchase of the two new cranes are part of the City's program to strengthen the Port's competitive position among other East Coast seaports for general cargo business including containers.

"Because of the new facilities at both Tioga and Packer Avenue terminals, we now have three regularly-scheduled containerized services from Philadelphia and serious negotiations are going on with other container operations," Galfand said.

"While the prospects are encouraging, this is a period of intense competition among Port cities. It is therefore vital to the economy of this entire region that the Port construction and development be continued. The new business which these new facilities will attract will favorably affect labor and many Port-related industries."

The Tioga Marine Terminal, the newly-completed all purpose terminal, is considered one of the finest in the world capable of handling all kinds of general cargo, and serving seven ships at one time.

The Packer Avenue complex is essentially a twin of Tioga in that it provides the same complete flexibility. In addition to the Kocks container crane, the Packer Avenue Terminal has a mobile LeTourneau all-purpose crane which works in combination with the Kocks crane.



San Francisco, Calif., October 7:—"Red tape"—including excesses of industry, carrier, financial and government paperwork—are imposing an annual $6½ billion load on U.S. world trade. Proof of this staggering burden is contained in "Paperwork or Profits"—a report summarizing a two-year study by the U.S. Department of Transportation and the National Committee on International Trade Documentation (NCITD). Receiving one of the first copies of the indictment of excessive documentation is John Page (right), Marine Exchange vice president and president of General Steamship Co., Ltd., San Francisco. Presenting the report are Charles H. Beard (left), NCITD board chairman, and Arthur C. Baylis, national director. The computer-analyzed study proves that a total of 125 different forms are used in U.S. exports and imports, involving on the average 360 separate pieces of paper, which cost over $350 per shipment. Some 28 recommendations—to industry and government—are made to reduce or eliminate this expenditure of 600,000 work years annually on paperwork. (Marine Exchange)

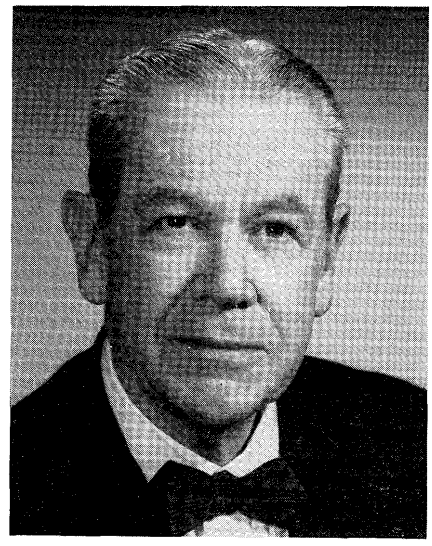
Both terminals are part of the City's $120 million Port development program, made possible by voter approval of City bonds in previous elections. Additional Port related improvements will be authorized by voter approval of bonds at the November 2 election. (City of Philadelphia News Release)

Re-Elected President

Portland, Oregon, October 19:—Thomas P. Guerin, retired general manager of the Portland Commission of Public Docks and now a ports and ocean transportation consultant in Portland, was re-elected to a second term as president of the Pacific Northwest Waterways Association (formerly Inland Empire Waterways Association) today. Election occurred at the Association's 1971 Convention in Seattle.

During the nearly twenty years of Guerin's management, Portland grew into one of the nation's major seaports. The growth culminated before his retirement in the establishment of trans-Pacific and other container ship services to Portland. He has held a number of responsible offices nationally and internationally including president of the American Association of Port Authorities, a public member of President Johnson's Blue Ribbon Maritime Advisory Committee, Executive Committee member of the International Association of Ports and Harbors and twice president of the Portland Freight Traffic Association.

The Pacific Northwest Waterways Association is the organization responsible for the planning and coordinating of the federally financed projects comprising the orderly development of the water resources of the Pacific Northwest. The Association is concerned with the harbors and channels of the Pacific Northwest seaports as well as with the multi-purpose programs of navigation, power generation, flood control, irrigation, etc. The geographical scope is Oregon, Washington, Idaho and western Montana. The membership is a broad spectrum of navigation companies, private power companies, general industry, banks, agriculture and governmental bodies such as port districts and local governmental units.



Mr. Thomas P. Guerin.

Boaters Must Behave

San Diego, Calif., 18 November:—"The Port of San Diego wants to be part of any program directed at correcting pollution of San Diego Bay", said Port Director Don Nay, "including that caused by overboard waste discharge from vessels."

In a presentation to the San Diego Port District Commissioners, meeting at Chula Vista Wednesday evening, Nay recommended that marina and yacht club operators be requested to install equipment in their facilities which can be used to pump out sewage holding tanks in pleasure craft. Provisions for making holding tanks necessary must be a matter of law or regulatory measure, according to Nay, and should be taken as a subsequent step in a program to solve the problem of borter waste discharge into Bay waters.

The presentation was the initial action taken to meet a request made in September 1971 by the Regional Water Quality Control Board that the Port District take whatever steps were needed to terminate sewage being dumped in the Bay by pleasure craft owners and operators of other privately owned vessels. Dennis O'Leary spoke before the Commission stating that the Port District staff has cooperated with the Water Quality Board from its inception adding that he was certain that adequate measures will be in force by the February 1972 deadline established by California law. State and Federal legislation action in this area has lagged over the past two years.

Nay noted that confusion exists in many parts of California and other states regarding policing of the dumping situation. He noted that in some areas stringent anti-discharge measures already exist, but littel or no attempt is made at enforcement, resulting in no control and sometimes abuse.

Commissioners agreed with Nay's plan to meet with representatives of the Navy, marina operators, yacht club directors and shipping officials to establish sources of pollution and reach agreement on most effective measures available. (Port of San Diego News Release)

Elected to Top Positions

Toledo, Ohio:—Louis C. Purdey, executive director of the Toledo-Lucas County Port Authority, and John A. McWilliam, general manager, were recently elected to top positions in two national organizations.

Mr. Purdey was re-elected to another one-year term as president of the National Waterways Conference, Inc., at the organization's annual meeting held in St. Paul, Minnesota. The Toledo port director has served as president of the Conference for the past two years.

The National Waterways Conference, Inc., is a nationwide group of businesses and industries utilizing water transportation, water carriers, water resource associations, port authorities and state development agencies.

John McWilliam, chief administrative officer for the Port Authority, was elected first vice president of the American Association of Port Authorities at the group's yearly convention in Portland, Maine.

McWilliam's election automatically places him in line for succession to the organization's presidency next year. The AAPA represents all public port organizations of the United States, Canada and Latin America with membership throughout the Western hemisphere being virtually unanimous. (Port of Toledo News, No. 4, 1971)

Navigation Light

Melbourne: — The Melbourne Harbor Trust Commissioners have installed a Directional Light which will mark the main approach navigational channel to the Port of Melbourne.

The light, known as the P.E.L. Navigation Light, is basically similar to a slide projector but all components are optimised for the particular purpose. It projects the image of a set of glass filters in three colours, red, white and green.

An observer looking towards the light from a position within the red boundary will see a red light only. Similarly, within the white or green sectors, he will be able to see a white and green light respectively.

It has a very narrow transition zone between sectors, normally less than one minute of arc (18 inches at 1 mile).

This Directional Light is the first to be installed within the port area and has a visibility range of up to 15 miles.

Built at a cost of approximately $3,000 the Directional Light is mounted in the rear leading light concrete tower located near Howe Parade in Port Melbourne. The tower is 80 feet high and is painted white.

The installation of the Directional Light will give additional assistance to Pilots and Mariners navigating the approach to the main Port Melbourne channel.

The light is shown BY DAY and is UNWATCHED. The owners of small boats are warned to keep well clear of the three sectors at all times.

A second similar light is to be installed at Webb Dock.

The light was developed in New Zealand, by the Department of Scientific and Industrial Research Physics and Engineering Laboratory and is widely used in New Zealand ports.

Interest is being shown in this light by other Victorian and Australian Port Authorities. (Melbourne Harbor Trust Port Gazette, Sept., 1971)

Botany Bay Oil Spillage

Sydney, 16th November:—Mr. W. H. Brotherson, President of the Maritime Services Board of N.S.W., to-day released details of the findings of the Committee set up by the Board under the chairmanship of Captain H. J. Harvey, Harbour Master, Sydney and Botany Bay, to enquire into the oil spillage which occurred in Botany Bay on the night of 25th/26th October last.

Mr. Brotherson said the spillage resulted from the fracture of three of the four pipelines leading from the A.O.R. Refinery at Kurnell to the terminal at Banksmeadow carrying processed products for distribution.

The Committee's report indicated that the damage to the pipelines had been caused by the trailing suction dredge "Willemstad" being employed by the Ballast Ham dredging group operating in the area at the time in connection with the development of the northern foreshores of Botany Bay for port purposes.

He said that evidence given before the Committee indicated that there had been an error in fixing the position of the pipelines on an instrument installed on the dredge for that purpose, and the instrument did not show the true position of the pipes as shown on the chart supplied by the Board.

Mr. Brotherson said the spillage was discovered at day-break on 26th October by the Board's staff patrolling the Bay at the same time as it was realized by the Refinery personnel that pressure had dropped in some of the pipelines leading to the terminal at Banksmeadow. Pumping from the pipelines was stopped immediately and steps were taken to

draw salt water into the lines so as to prevent the escape of further oil products.

The cleaning up process was commenced immediately after the spillage was discovered.

In commenting on the steps taken to clear up the spillage, Mr. Brotherson said that 11 vessels including the Board's own floating plant were engaged but he wished to make special mention of the speed and efficiency of the staff of Australian Oil Refinery Pty. Ltd., whose prompt action resulted in a minimum of damage and inconvenience being caused.

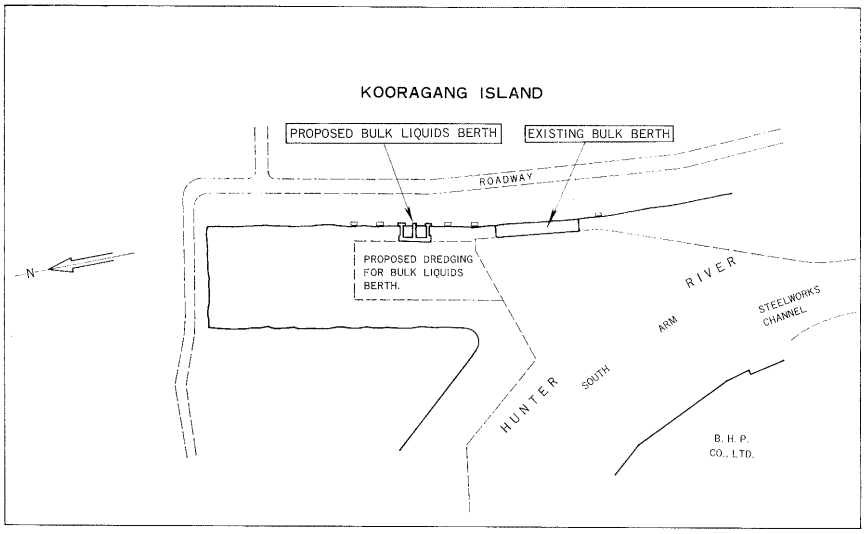
Mr. Brotherson said that a number of enquiries had been received by the Board as to the possibility of such an incident happening again in the future.

He pointed out that, whereas in the present case the pipelines, which had been installed some years ago, were laying on the bed of the port, the Board, in its specification for the Contract covering the relaying of the pipes once the dredging has been completed, requires that the lines be laid 10 feet under the bed of the harbour in areas where ships may navigate and 6 feet under the bed in other areas. He said that these specifications had been issued prior to the incident involving the breaching of the pipelines and, in these circumstances, the possibility of a similar occurrence could be regarded as very unlikely. (The Maritime Services Board of N.S.W.)

Newcastle

Sydney, 14th October:—It was announced today by the President of the Maritime Services Board of N.S.W., Mr. W. H. Brotherson, that the Board has decided to let a contract to the value of $370,000 to Societe Nationale de Travaux Publics for the dredging of a channel and associated loading basin into the area designed for the construction of a bulk liquid berth at Kooragang Island, Newcastle.

In making this announcement, Mr. Brotherson said that the dredge "Leie" would commence work on the project at the end of this month and it is expected that it will have completed its work in approximately 6 weeks.



He said that the location of the wharf will be to the north of the existing dry bulk berth at Kooragang Island.

In making the announcement, Mr. Brotherson said that the design of the liquid bulk berth is in its final stages and a commencement would be made on its construction as soon as the dredging has been completed.

He said that the location of the new liquid bulk berth would take away from the Newcastle City site the facilities which have been used for a number of years in handling liquid bulk cargoes, including black oil and inflammable liquids.

In the design of the new Kooragang Island facility, provision would be made to enable a floating boom being placed around the vessel to prevent any spillage which may occur moving from the immediate vicinity, thereby localizing any pollution problem and readily allowing of it being dealt with. He indicated that the new wharf would incorporate adequate facilities for fire fighting.

Further advice will be given of the decision in relation to the construction of the wharf, this release being designed to cover the Board's decision to let a contract for the dredging which is necessary prior to the construction of the wharf being commenced.

A sketch of the location of the facility is attached. (The Maritime Services Board of N.S.W.)

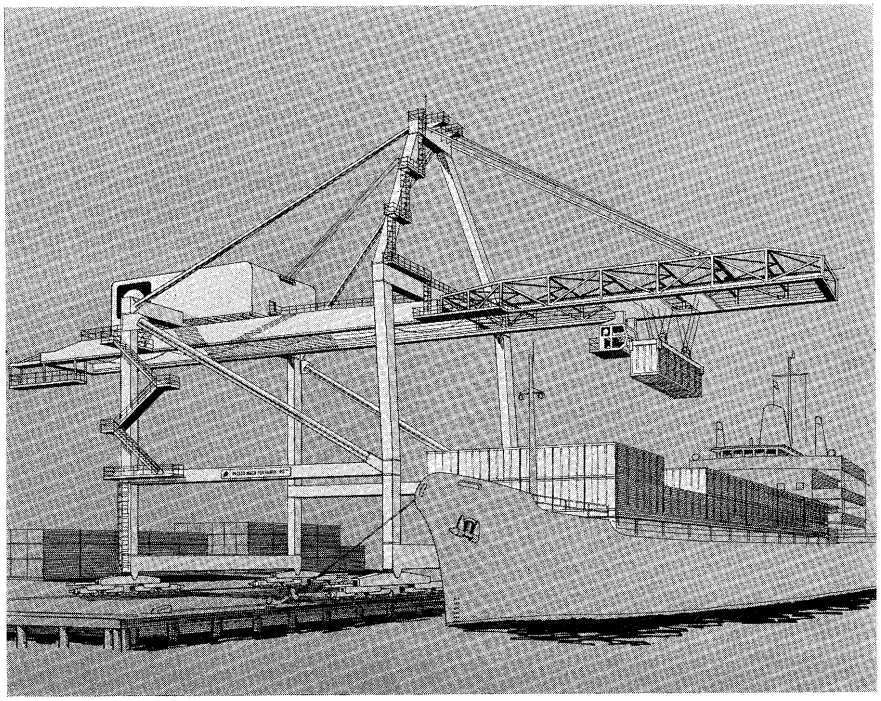
Symposium on Containers

Hong Kong, November 3:—The Hong Kong Productivity Council is to hold a symposium containerization from 15 November to 19 November 1971, under the joint sponsorship of the Hong Kong Government and the Asian Productivity Organization.

The forum will give shipping executives, port architects and managers of cargo departments an insight into the container concept. Experts from various countries which have already made the switch to containerization will offer their views on both the advantages and the problems involved.

The symposium will be led by Mr. M. G. Graham, an expert from Overseas Container Ltd. of London, he will be assisted by two Japanese and four leading local executives. Delegates from many Asian countries will attend the symposium along with local shipping managers and cargo handling executives. (The Week in Hong Kong)

3 "MACH" Cranes Ordered by Sea-Land for Hong Kong's Kwai Chung Container Terminal



Artist's concept of PACECO MACH PORTAINER similar to those to be installed at Kwai Chung facility in Hong Kong.

Alameda, Calif., October 26:—Earlier this year, PACECO, a Division of Fruehauf Corporation, took what it called "A Step into the Future" with the development of MACH (Modular Automated Container Handling) cranes. Today, with the announcement of a 4.5 million dollar contract from Sea-Land Service, inc. for three MACH PORTAINER cranes, Paceco steps into the foreground of a bright new future for container shipping in the Far East.

Sea-Land's subsidiary, Sea-Land Orient. Ltd., will operate the three MACH PORTAINER cranes, which will be equipped with the "Sway Stop and High Speed" modules, in the new Kwai Chung facility of Hong Kong. This will be the first Hong Kong terminal planned and developed exclusively for container handling. Hong Kong Government officials view the port as an important future trans-shipment center for the Far East.

The pattern for trans-shipment was set long ago. Hong Kong is a deep water port well established as a handling center for traders because of its free port advantages and the availability of cargo handling labor. Since most shipments in and out of the port are consolidated at dock side from orders involving a number of small manufatcurers, consolidation companies are already in business there to aid shippers in the breakdown and reassembling of containerized cargo coming in and going out of Hong Kong.

Paceco figured early in Hong Kong's development as a container port. A standard PORTAINER crane installed at Kowloon Wharf & Godown Company for Sea-Land and other steam ship lines was the first pier-side container handling crane in South East Asia for commercial trade, following two PORTAINER cranes installed at Cam Rahn Bay.

Three PACECO TRANSTAINERS (terminal cranes) were added at Kowloon Wharf because of the officiency of the TRANSTAINER system in a container terminal area.

The new 32 acre facility at Kwai Chung will service Sea-Land's present ships as well as their new super containerships. The new MACH PORTAINERS will be capable of handling both 35′ and 40′ containers.

The increased handling speeds possible with Paceco's MACH system are an important consideration at Kwai Chung. Since it was necessary for Sea-Land to purchase and reclaim the sea beds on which their berths will be constructed, the cost is substantial. Only very high throughput made possible with the help of faster container handling equipment will make Sea-Land's investment pay off.

An even greater future consideration is the fact that as the container traffic increases at Kwai Chung automated modules can be added to the MACH PORTAINERS to meet the requirement for even faster, more efficient loading and unloading operations. Thus, the shipping company is in an excellent position to capitalize on new trade developing in perishable and fragile items, which because of Containerization can now be transported safely by ship.

The first of the three MACH PORTAINERS will go into service at Kwai Chung next year, with the second and third cranes to be operational in January and March of 1973. All three cranes are being built by Paceco Licensee, Mitsui Shipbuilding & Engineering Co. Ltd., under a special subcontract. (PACECO News)

Royal Visit

Penang:—It was a memorable occasion for the Penang Port Commission when the D.Y.M.M. Yang di-Pertuan Agong and the Raja Permaisuri Agong, who were on a three day state visit to Penang, honoured the Port by their visit to the Butterworth Wharves.

Their Majesties toured the Harbour in one of the Commission's ferry vessels which was specially

decorated for the occasion, and visited the Butterworth Wharves. As Their Majesties' car drove into the Royal Ferry "Pulau Langkawi", they were received by the Commission's Chairman Tan Sri Abdul Jamil bin Abdul Rais. Accompanying Their Majesties were His Excellency the Governor of Penang and His Consort, the Hon'ble Chief Minister and his wife and the Hon'ble Minister of Labour, Tan Sri V. Manickavasagam. Their Majesties were then escorted by the Chairman to the Passenger Deck of the ferry and were introduced to the Director-General and other members of the Commission and Senior Officers. A bouquet of flowers was presented to Her Majesties by Miss Faizan binti Ismail, daughter of the Commission's Director-General.

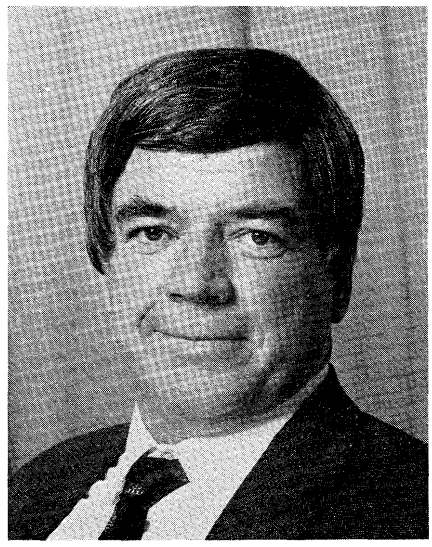
The Royal Ferry cruised around the Harbour and launches and ships sounded their sirens in salute. On arrival at the Wharves, the King and Queen were met by the Chairman, and the Director-General of the Penang Port Commission and their wives. Their Majesties were briefed on the operations of the Port by the Director-General and then observed the loading of tin slabs and rubber at the Wharves onto the "Santos Maru" of the Mitsui O.S.K. Line whose Penang Agents are the Malaysian International Shipping Corporation Limited.

Their Majesties were entertained to light refreshments in Godown W3 which was gaily decorated. A silver salver engraved with the Penang Port Commission's crest and suitable words was presented to the King and Queen by the Chairman as a momento of the Royal visit. (Berita Pelabohan, October)

New Board Chairman

Auckland, N.Z., November 16:—Mr. R. W. Carr was elected Chairman of the Auckland Harbour Board at its annual meeting in November, following the New Zealand Local Body Elections in October. Mr. Carr, aged 43, has been a member of the Board for 12 years, four as deputy chairman.

He succeeds Mr. R. C. F. Savory, who resigned from the post of Chairman after 11 years. Mr. Savory will remain a member of the Board.



Mr. R. W. Carr

Mr. Carr is chairman and managing director of an Auckland transport, container, customs and storage company, Carr and Haslam Ltd., and has interests in several other transport companies.

Mr. Carr's business activities have held him in close contact with the Auckland waterfront for most of his working life, and his knowledge of the port of Auckland and the transport business make him well qualified for the position of Harbour Board Chairman.

Mr. Carr's family has been associated not only with the waterfront, but also with the Auckland Harbour Board, for almost 50 years —his grandfather, Mr. E. J. Carr, and his father, Mr. G. E. Carr, were both Board members for 18 years.

Mr. Carr was born in Auckland and educated at Mt. Albert Grammar School and the University of Auckland. Before joining his father's trucking firm his experience included working as an accountant and a waterfront "seagull".

Mr. Savory at the age of 64, stands down from the position where he became one of Auckland's and New Zealand's foremost public administrators.

As Chairman of the Board he instigated the Board's Downtown Redevelopment Scheme—a complex buildings already under construction which will eventually represent the largest urban redevelopment scheme undertaken in New Zealand.

In the field of shipping Mr. Savory has a wide experience of port affairs. He serves on a worldwide organization of the International Association of Ports and Harbours and has represented New Zealand at various international conferences since 1965.

He is the founder and Chairman of R. Savory Ltd., building contractors, a company which has contributed greatly to the construction of large building works in Auckland.

He is a Director of the Auckland Building Display Centre, a fellow of the Institute of Builders of Great Britain, and a member of the Australian Institute of Builders.

The New Auckland Harbour Board consists of the following Members:

R. W. Carr	Chairman
J. Forbes	Deputy Chairman
H. J. Lichtenstein	
L. D. Nathan	O.B.E., J.P.
C. G. Palmer	
R. C. F. Savory	C.B.E., F.I.O.B.
B. E. Turner	O.B.E., D.S.C.
N. F. Sadgrove	
E. W. Turner	M.B.E., J.P.
L. Elsmore	J.P.
R. C. Dunlop	
A. R. Eyre	J.P.
A. J. MacDonald	
T. J. O'Dwyer	
J. G. Dillon	

(Auckland Harbour Board News Release)

39th Conference

Wellington, N.Z., 23rd November:—The Thirty-Ninth Conference of the Harbours Association of New Zealand is being held at New Plymouth during the week commencing 13th March 1972 and the Taranaki Harbours Board will be the host for the Conference.

The following is an outline of the

Correction

In reference to the new item "Food from Red China" on page 36 of Ports and Harbors, December, 1971, the last line of the second paragraph should have stood "China by Maru-ichi Trading Co., Tokyo".—Ed.

programme:—

Tuesday 14th March 1972

9 a.m. to 5 p.m.: Executive Officers' Meeting, Devon Lodge Motor Hotel Conference Room.

6 p.m.: Executive Officers' Cocktail Party.

Wednesday 15th March 1972

10 a.m.: Conference opens at Devon Lodge Motor Hotel Conference Room — Welcome by Chairman of the Tranaki Harbours Board; Welcome to the City of New Plymouth by His Worship the Mayor; Welcome to delegates by the President of the Harbours Association; Formal Opening of Conference by the Hon. Minister of Marine.

7 p.m.: Social Evening being arranged by the Taranaki Harbours Board.

Thursday 16th March 1972

Delegates and Ladies will be guests of the Taranaki Harbours Board at an all day outing being arranged by the Board.

(Evening Free).

Friday 17th March 1972

9.30 a.m.: Annual Meeting of New Zealand Harbour Boards Industrial Union of Employers.

10 a.m.: Conference Resumes.

1 p.m.: Conference Concludes.

2.30 p.m.: Inspection of the Port of Taranaki.

6.30 p.m.: Farewell function at Devon Lodge Motor Hotel.

For further details refer to Mr. R. E. Dawson, Chief Executive Officer, The Harbours Association of New Zealand, P.O. Box 1765, Wellington 1, New Zealand.

Visitors

Karachi:—The Chairman and the General Manager of the Penang Port Commission, together with the Marine Superintendent of the Malaysian Government visited the Karachi Port offices from 6th to 8th October 1971, for the purpose of interviewing candidates for the posts of Pilots for the Penang Port Commission.

They also took the opportunity of visiting the Port of Karachi and were shown the development schemes under execution in the Port. They were accompanied by Commodore Anwer Saeed, T.Pk., P.N., Chairman, Mr. Aftab Alam, Engineer-in-Chief, and Comdr. A.K.Y. Kazi, T.Q.A., Deputy Conservator, Karachi Port Trust. (K.P.T. News Bulletin, November 1)

Imperial Visit

Antwerp:—Within the framework of their European tour the Emperor and the Empress of Japan, accompanied by King Baudouin and Queen Fabiola, visited Antwerp. The programme mentioned a welcome at the townhall, the cathedral, the zoological garden, the diamond-industry and—combined with a lunch on the Scheldt—a port visit by boat.

At the townhall the Imperial visitors were addressed by Burgomaster Craey-beckx, who in the following wording devoted a part of his speech to the Japanese/Belgian relations:

"Thinking of commercial relations between our two countries I would like to say that trading-companies and transport-undertakings of all nations find in Antwerp a free market where it is easy to co-operate. In this way our harbour managed to develop into one of the most important world-ports. We greet with the greatest satisfaction the increasing interest of Japanese concerns for Antwerp as a harbour and distribution centre in order to extend their relations with the European Common Market. Antwerp is capable of rendering real services to the Japanese-European commercial relations and of contributing to their expansion. As a matter of course our port will always be happy to co-operate in this respect". (Antwerp Port News, October)

New Container Service

London, 25th November: — The Port of London Authority and Comar Container Line have completed an agreement for a new container service between Tilbury and Zeebrugge to begin in January 1972. The service will operate from No. 40 Berth, Tilbury Docks which in common with other container facilities at Tilbury, will offer year-round 24-hour working, every day of the week.

Comar will run 5 sailings a week from the berth with the ship being worked during the night shift. They will cater for Ford traffic in containerized components between Continental and Dagenham production lines. This new service becomes an integral part of Ford's production process and is an example of the port's importance, with Tilbury's ability and ideal position, to serve closer European commercial and industrial links. Tilbury, the major container port of the South East, is the closest to London being only 26 miles from the centre of the Metropolis.

PLA's Director of Tilbury, Mr. R. H. Butler, said: "We consider this to be an expanding trade and are pleased to see the excellent facilities at Tilbury serving an important Thames-side industry. Our talks with Comar have produced a working arrangement to meet the special requirements of their traffic. Tilbury's expertise in handling containers and giving year-round 24-hour working puts the Port of London and its users in a specially good position to take full commercial advantage of closer links with Europe. Our men concerned in the berth operation have been fully consulted and are confident that they can provide the necessary service." (News from PLA)

Symposium Day

Rouen:—Symposium day of the Institute of International Transportation Law on legal problems posed by river barge operation was held under the presidency of M. Jean Chamant, Minister of Transport at Port of Le Havre Authority on October 15, 1971. See also news "Symposium in Rouen" on page 26 of Ports and Harbors, December, 1970.

Container Service Wins

Bremen:—Fruit imports, in the form of Spanish melons, which originally came to Bremen over the sea route—and which was then superceded by the overland route—have now once again proved to be more advantageous by sea, with the Ro-Ro/Container service operating between Bilbao and Bremerhaven. The melons, which were filled into 'openside containers' in the village

of Bechi, near Castellon, were transported with the m.v. "Meteor" from Bilbao to Bremerhaven and—immediately upon arrival of the ship—onforwarded to the ultimate destination in Germany, where, on the same day, the receivers expressed great satisfaction as to the condition of the wares. Container experimentation is now to be made with other types of fruit. (Bremen Air Mail, October)

1970 Cargo Traffic

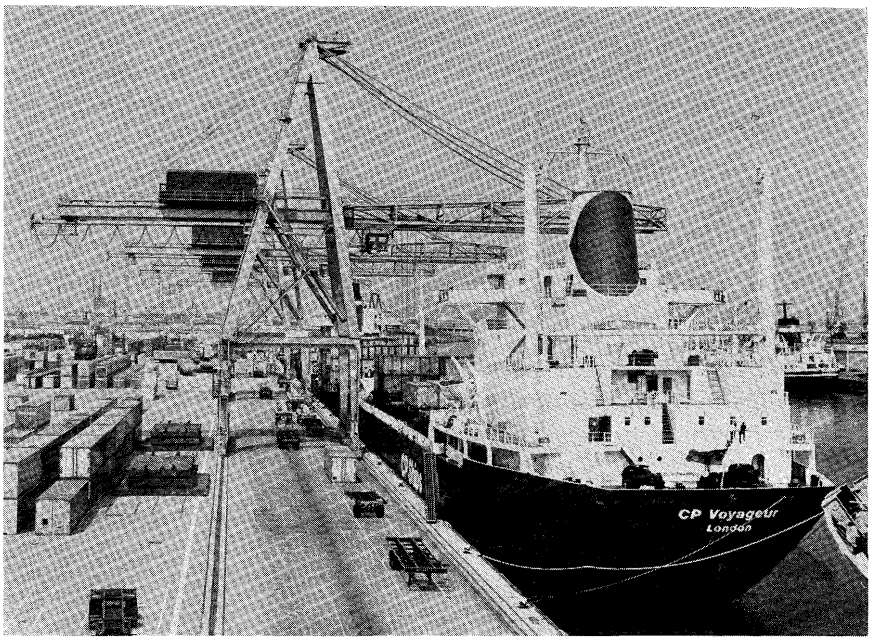
Bremen:—According to the official statistics now published, the Bremen ports in 1970, imported 14.7 million tons of goods (coffee, raw cotton, raw tobacco, ore, coal, crude oil etc.) to the value of DM 7.3 milliards and exported 5.8 million tons (vehicles, electro-technical products, iron and steel etc.) to the tune of DM 11.8 milliards. Together: 20.5 million tons — DM 19.1 milliards. (Bremen Air Mail, October)

Better Life for Dockers

Bremen:—Accepting the fact that the reason for strikes being virtually unknown in the Bremen ports of Bremen and Bremerhaven is due—above all—to the social security guaranteeing the docker a full weekly wage regardless of the actual amount of employment given; nevertheless the port senator, the port undertakings and the union are all concerned with the remaining problem of increasing the status of the dock-worker as well as that of protecting him from the dangers of increasing automation. This is the reason for the Burgomaster of Bremen, Hans Koschnick, giving stimulous to the creation of a commission—composed of representatives of the Senate, Employers' Association and the union—for the purpose of studying the possibilities existing for improving—in the general interest—the security of the jobs in the port, as well as those for a marked increase in the social status of the dock-worker. (Bremen Air Mail, October)

New Cranes at Rotterdam

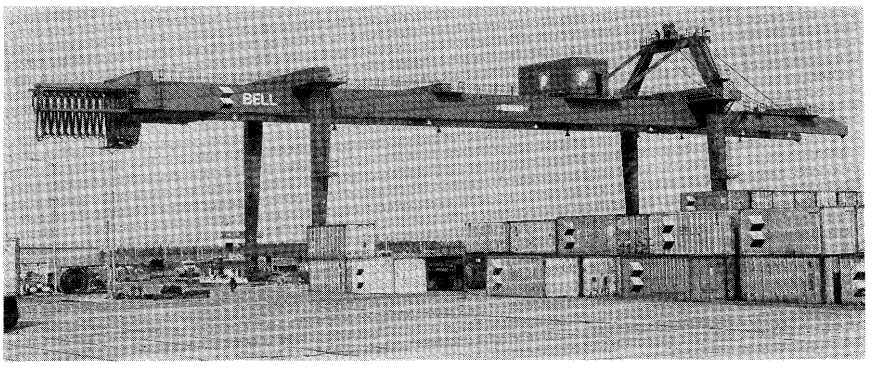
Alameda, Calif., November 12:—Four 30.5 metric ton PACECO



Portainer® cranes are now in operation at the E.C.T. Terminal, Port of Rotterdam, Holland. PACECO INTERNATIONAL LIMITED of London, England, a subsidiary of PACECO, a Division of Fruehauf Corporation, USA, is the source of these container handling cranes for E.C.T., one of Europe's major container handlers.

An unusual new feature is incorporated in the Rotterdam Portainer cranes. A full cab elevator runs up a leg of the structure lifting the operator approximately 87′ from gantry truck level to machinery house level, thus eliminating the ladder climb to the crane's cab.

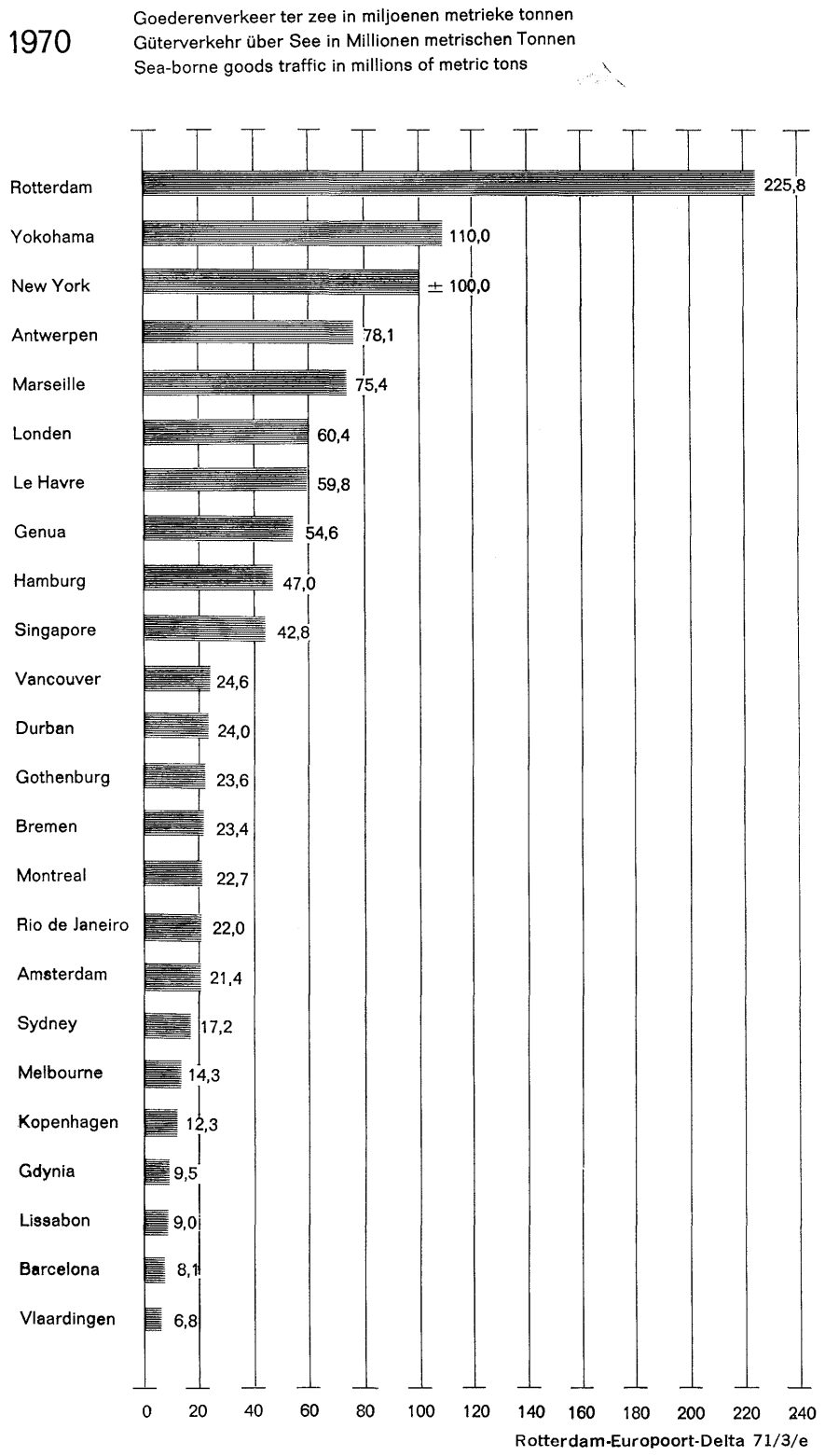
In addition, one of the cranes is provided with articulating gantry drives to enable it to traverse a 100 m radius bend. (PACECO News)



Rozenburg Terminal

Alameda, Calif., November 12:—A new PACECO long span PORTAINER crane adds dimension to the container handling facilities of the George Bell & Company Terminal at Rozenburg, Holland. Ordered from PACECO INTERNATIONAL LIMITED, London, England, the new crane can service the entire Rozenburg Terminal loading and unloading containers directly from ships to storage area without additional backup equipment.

The crane firm is a subsidiary of PACECO, a Division of Fruehauf Corporation, USA, and the Rozenburg Portainer is the fourth PACECO container handling crane for Bell. A similar PACECO Portainer crane began operations for Bell's Teesport Terminal last April. The British shipping company operates containership service between its ports at Bellport and Teesport, England; Waterford, Ireland; and Rozenburg, Holland. Bell inaugu-



rated its direct service between Bellport and Rozenburg last Spring. (PACECO News)

Port of Lisbon

Port activities during 1970—summary.

1—Incoming Shipping

In 1970, 6,259 ships came to the port of Lisbon; 1,654 of these ones were Portuguese and 4,605 were foreign vessels; the total growth was of 93 ships in relation to 1969. The corresponding Gross Registered Tonnage (G.R.T.) reached 34,829,-976 tons against 33,595,738 tons in 1969.

Of the tonnage moved through in 1970, 28,503,057 tons correspond to foreign fleet and 6,326,919 tons to Portuguese vessels; to these figures there correspond the percentages of 81.8 per cent and 18.2 per cent, respectively. April was the peak month followed by November and May.

2—Sea-Cargo

The port of Lisbon handled in 1970, 9,012,932 metric tons, 6,959,-679 tons being of unloaded cargo and 2,053,253 tons of loaded cargo.

In the whole there was an increase of 602,969 metric tons (5%) in relation to 1969.

The peak month was November.

3—Sea-Passengers

In relation to the preceding year there was a decrease of 4 per cent in the number of travellers arriving in th eport of Lisbon.

The peak months were September and May.

4—River Traffic

The monthly number of 2 million passengers was exceeded and, in July and August, over 2.5 million were registered.

In regard to vehicle traffic in 1970, there was an increase of 7.4 per cent in relation to 1969.

5—Budget Implementation

Ordinary and extraordinary revenue collected in 1970, in accordance with the Port of Lisbon Authority own budget totalled jointly 492,003,000 escudos; the figure for 1969 was 363,664,000 escudos; ordinary expenses attained during the economic year of 1970, 441,666,000 escudos against 340,478,000 escudos in 1969.

Besides these ones, the Improvement Plant expenses reached, in 1970, 131,693,000 escudos, showing an increasing of 47,084,000 escudos as regards to the previous year. (Boletim do Porto de Lisboa, Jan/Feb/Mar 1971)

New Service

Barcelona:—On the 13th of February, the ship "Lash Italia" of the Prudential Lines Company initiated its service. Even though it is true that this type of ship can operate perfectly well being anchored, in this journal as on all the successive ones, she was berthed at the Adosado Quay, and in this way the operations were greatly simplified. On

the other hand, this Quay which is together to the Outer port allows for easy and comfortable manoeuvering of the vessel.

6 barges and 24 containers (another reason which made the berthing necessary) were handled and the ship stayed in the Port for 10 hours.

The transfer of the barges to the zone where the loading company does all its work was undertaken by the tugboats belonging to the Port Authority and two special docks have been devoted to deal with this type of operation. One of these is in the second section of the Levante Quay for the operations of stuffing and the other, which is wider, is on the inner side of the "Martillo" in oder to speed up the operations of loading and unloading the barges. (Puerto de Barcelona Boletin Informativo, March/April, 1971)

3,500 Cars Loaded

Barcelona:—On the 11th April last, the operation of loading of 3,532 SEAT-600 motorcars to Finland took place.

The vessel that effected the transport was the "Dyvi Pacific" ideally designed for this type of operation so that by means of her two lateral gang-ways and adequate internal distribution (10 tweendecks and ramps designed for that purpose) the loading was able to be carried out in the record time of 12 hours.

In order to ensure the loading rhythm, the total cargo had to be previously placed on the quay, for which end the esplanade next to the breakwater was particularly adequate. A space of 18,000 m.^{2} was necessary in the use of the mentioned esplanade for the actual parking, supplementary equipment, etc.

The lashing of the motor-cars was effected using longitudinal and transversal chains that completely covered each of the tween decks in such a way that the bumped bars of the vehicles were tied down by means of ropes tensioned as tourniquets with small wooden stakes. (Puerto de Barcelona Boletin Informativo, March/April, 1971)

Weight-Lifting Record

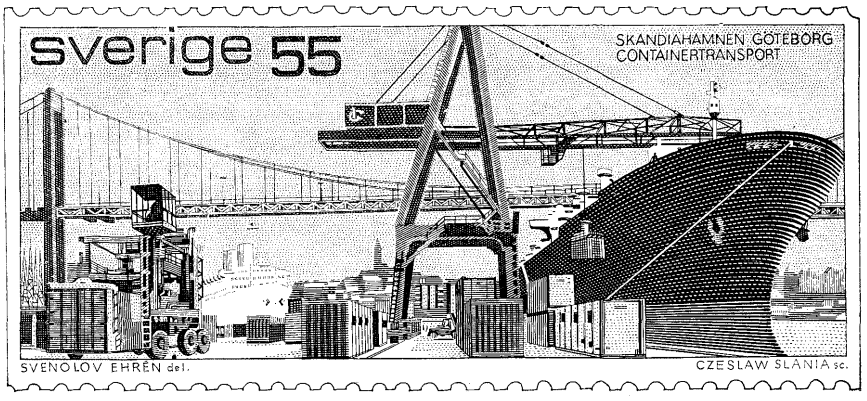
Vasteras, Sweden, October 5:—Against lively competition with the largest European transport and weight-lifting companies Kramo Montage AB, Västerås, Sweden, has been entrusted with an undertaking which is technically rather unique.

As far as is known, this is the highest hoist for a heavy steel construction ever to be made, at least in Europe.

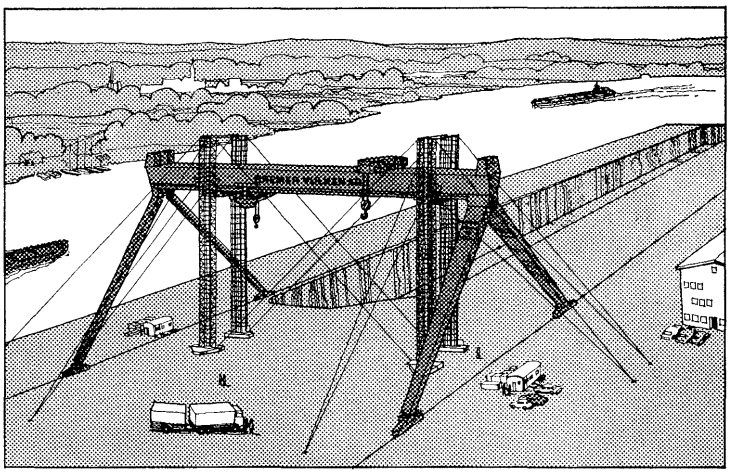
The West German Company Brember Vulkan is building a dock at Bremen-Vegesack, West Germany, to assemble mammoth tankers. Above the dock there is to be a gantry crane which can lift up complete ship sections. The dock is 117 m wide. The total weight of the hoist is about 1630 t. and the final lifting height 70 m.

The "Kramo Assembly System", developed by the company's own engineers, will be used for the hoisting process. With the help of masts on which hydraulic construction jacks climb, the weight in question will be lifted to a height of 70 m.

Development work on the method has been going on for 2 years. So many hoists have now been made that it is certain that the method is safer, quicker and cheaper than previously known methods. So far the highest loading weight has been 400 t. and the lifting height 36 m when 2 container cranes were assembled about 1 year ago in the harbour at Gothenburg. (Kramo Montage AB)



Alameda, Calif., October 19:—The PACECO Portainer crane operating in Sweden's Port of Gothenburg gets official recognition on this new "Swedish Industry" stamp, recently issued by the Swedish Postal Authority. Worth about ten cents in U.S. postage, the 55 ore stamp depicts the Skandia Harbour, considered Scandinavia's most important container port. The container handling crane from PACECO, a Division of Fruehauf Corporation, USA, has been in operation for almost six years. (PACECO News)



The picture shows the hoisting operation with the four erection masts which support the gantry crane weighing 1.630 t.

Not only are our big 40 foot aluminium containers tougher than steel ones, they are lighter.

And not only can you save on freight "weight" charges, you can save on freight "handling" costs, too.

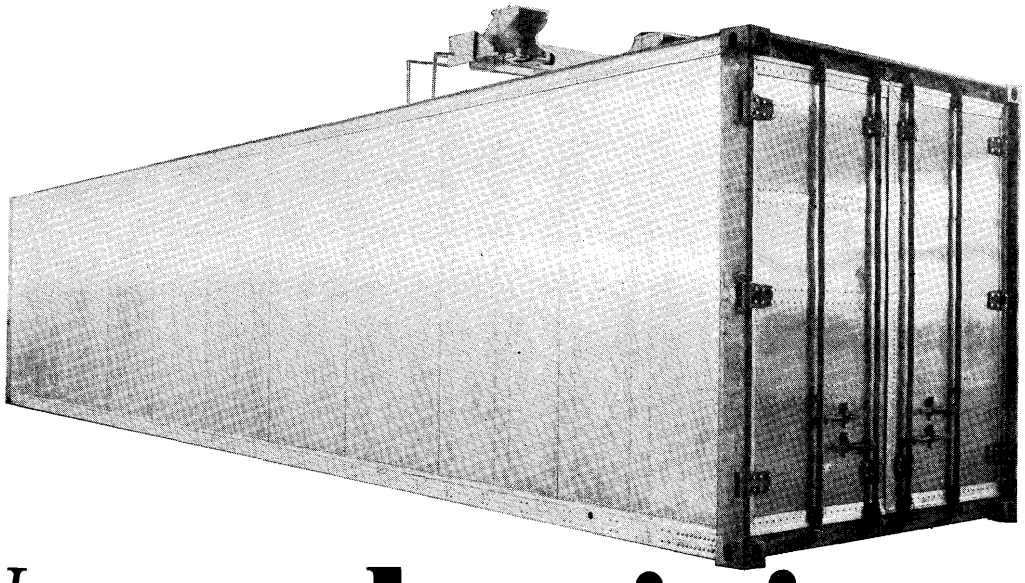
You see, our big 40 foot aluminium containers are six inches higher than conventional containers. You can pack more into them yet pay the same freight handling bill.

But if you have small shipments, our 20 foot containers (8′ × 8′ × 20′) may be what you need. And for extra small cargo, our compact 10 foot folding containers (8′ × 8′ × 10′) will do the job, too. Plus they collapse when you don't need them but are around when you do.

All our containers meet ISO standards in size, strength and safety.

And you get the extra assurance of extensive research, engineering know-how and quality control production methods that we put into all our products.

Interested? Please write:



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