

# PORTS *and* HARBORS

DECEMBER 1965

Vol. 10 No.4



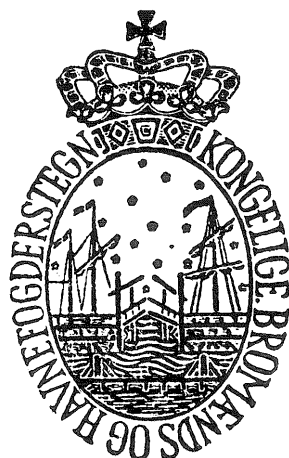
**THE INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS**

# *Introducing The Crests of Ports*

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(Each Issue One Port)

## THE PORT OF COPENHAGEN



Port of Copenhagen Inner and Outer Harbours

# PORTS *and* HARBORS

DEC., 1965 Vol. 10, No. 4

*PORTS AND HARBORS is quarterly published by the Central Secretariat of the International Association of Ports and Harbors as an official journal of the Association, to provide its members with information concerning port and harbor developments in the world.*

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## INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS

President; **Viscount Simon, C.M.G.**, Chairman, Port of London Authority

Chief of the Central Secretariat; **Gaku Matsumoto**

Editor; **Kenzo Matsuo**

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**The Central Secretariat;** Room 715-A, N.Y.K. Bldg., Marunouchi, Chiyoda-ku, Tokyo

# From the Central Secretariat

## **Fifth Port and Harbor Seminar Held in Tokyo**

With the Japanese Government and the Overseas Technical Cooperation Agency as organizers and the Central Secretariat of IAPH as coordinator, the 5th Seminar on Ports and Harbors under the Colombo Plan for South and South-east Asia, the Technical Cooperation Program for Latin America, the Technical Cooperation Program for the Middle and Near East and the Technical Cooperation Program for Northeast Asia was held in Tokyo for 45 days from October 1 to November 15, 1965. The Seminar consisted of lectures, discussions and field trips to major Japanese ports.

Attended by 18 participants from 16 countries, the Seminar was a great success. They included: 2 (U.A.R.), 1 (Ceylon), 1 (Chile), 1 (Republic of China), 1 (Ecuador), 1 (Republic of Korea), 1 (Malaysia), 1 (Mexico), 1 (Nigeria), 1 (Peru), 1 (Philippines), 1 (Singapore), 1 (Syrian Arab Republic), 1 (Thailand), 2 (Indonesia), and 1 (Saudi Arabia).

## **Meeting by Correspondence of Board of Directors**

In accordance with the provision of Sec. 39, Art. IX of the By-Laws, a meeting by correspondence of the Board of Directors was called on October 5, 1965 under authorization of President Lord Simon with November 5, 1965 as the voting date, to approve the election of all 6 applicants to the membership as follows:

### **REGULAR MEMBERS**

The Hamilton Harbour Commissioners, Hamilton, Ontario, Canada  
Dublin Port and Docks Board, Dublin, Eire  
Nissin Transportation and Warehousing Co., Tokyo, Japan  
Niagara Frontiner Port Authority, Buffalo, N.Y., U.S.A.  
Port and Navigation Organization, Tehran, Iran  
Freie and Hansestadt Hamburg, Hamburg, Germany

## **Executive Committee Meeting to be Held**

At the call of our President, Lord Simon, the 4th meeting of the Executive Committee will be held in Los Angeles, Calif. U.S.A. from

13 through 17 February 1966 for the purpose of deliberating on the preparations for the 1967 Tokyo Conference and other important affairs.

## **Tobin Committee Meets in London**

The first meeting of the Committee on International Port Development, with Mr. Austin J. Tobin as Chairman, was held in London on October 8 in order to carry out the resolution adopted at the London Conference in May, 1965.

Present at the meeting were Lord Simon, President of I.A.P.H., Committee members Ir. F. Posthuma of Rotterdam, Sir Arthur Kirby of London, Mr. Terai, proxy for Mr. Gaku Matsumoto, Chief of the Central Secretariat and Mr. Austin J. Tobin of New York while communications approving the agenda were received from Messrs. W. J. Amoss of New Orleans, M. Chandrasoma of Colombo, M. Samakosus of Bangkok, V. G. Swanson of Melbourne and L. E. Palacios of Bogota.

## **Visitors to Tokyo**

The Central Secretariat had a visit of Dr. J. D. McCullen, Division of Nuclear Power and Reactors, International Energy Agency, Vienna on November 30 when Mr. Gaku Matsumoto, Chief of the Central Secretariat and officials of the Ministry of Transportation and the Scientific and Technical Agency concerned with nuclear energy had the opportunity of talking with him on many matters.

Late in November 1965, Los Angeles trade mission including Los Angeles City mayor and Los Angeles Port executives visited Tokyo to promote trade relations with Japan. The mission contacted Japanese representatives of commerce, industry, government and other circles.

*The Chief and Members  
of  
The Central Secretariat of IAPH  
send  
Best Wishes  
for  
the New Year*



# Ports and Harbors and Human Relations

By Hajime Sato

*Dr. of Engineering Science  
Director of the Port and Harbor Bureau  
of the Ministry of Transportation*



Dr. Hajime Sato

Immediately following the end of World War II, ports and harbors in Japan made an unusual experience in going through a period of no ships and no cargo.

War damaged and destroyed ports and harbors were virtually deserted and received little care and maintenance. But with the restoration of the nation's economy, they all become busy again.

The total of cargo handled by all ports in this country during 1953 totalled 220 million tons. This figure indicates the restoration of activities of the nation's ports and harbors as they existed in the pre-war years from 1934 to 1936. Since then business activity has risen steadily, and both Production and Trade have expanded.

Along with these trends the volume of cargo handled at all ports in this country has increased year after year.

For 1960 the cargo handled reached 440 million tons, doubling the volume registered for 1953. In 1964 it topped the 727 million ton level, a more than three fold expansion over the figure of 1953.

Moreover, one of the most conspicuous factors is the increased volume in foreign trade. The figure of 43 million tons, registered in 1953, climbed to 107 million tons in 1960 and reached 207 million tons in 1964. This reflects the astounding stride that Japan has made in this field. The reasons for this development are obvious. With

the progress achieved in heavy and chemical industries, bigger imports of petroleum and iron ore were necessary. To make these possible exports of industrial products and general goods had to be increased.

To discharge the raw material the heavy and chemical industries had no other choice but to construct own modern wharves. These have been quite satisfactorily completed.

Business firms engaged in importing wool, cotton and the like and those exporting sundry goods were compelled to build wharves whose construction were entrusted to the existing port management authorities.

At the major trading ports like Yokohama and Kobe, construction of modern wharves after the war started in 1953. The unexpected sharp rise in business activity had already taken place at that time. The result was an unusually heavy congestion of vessels in ports towards the close of 1961 until early 1962.

Actually over 20 per cent of all incoming ships to the 6 major ports of Japan had to wait an average of 93.5 hours before being able to dock.

With a view to relieving this acute situation, the government and port management bodies redoubled their efforts to build public wharves for ships engaged in international trading. Thanks to vast amounts of money allotted every year for this

purpose, quays with 12 berths for ships over 10,000 G.T. have been completed at the Yokohama Port since 1953 and further 14 berths are now under construction. They will be completed in a year or two.

Similar works have been conducted in the Kobe Port. There 13 berths have already been completed and 11 more, now under construction, will be finished in 1966 or 1967.

These new wharves, compared to those which existed in prewar years obviously afford up-to-date facilities including the depth of water which is now quite adequate for big ocean-going ships with up to 20,000 tons.

Moreover, ample space has been provided for parking zones and sheds, where fork-lifts can now be used; a container yard is also provided. All these facilities, skillfully devised and planned, have been built to ensure the smooth flow of cargo.

In presenting a new issue, I should like to reproduce conversations overheard from "cargo" going through these newly built and equipped wharves.

The engineers, who devised these facilities anticipated to hear from the "cargo", being handled through these new port and harbor installations expressions like "Domo Arigato—its fine, many thanks.". Unfortunately they hear many complaints. Here are a few examples.

Cargo "A": "Against my expect-

tation I received uneasy treatment. —I was bound for Europe on Boat "A", and overjoyed coming on a truck, and I am dumped here in the shed."

Yelled to the cargo arrived of them and asked:

Cargo "A": "Ho! you too are bound for Europe by Boat "A"?"

Cargo "B": "Oh, no, I am supposed to be loaded into Boat "B"."

Curious to know about its fate, Cargo "A" asked another who said: "I am going by Boat "C". After having spent several days in uncertainty, I was brought to an apron, but there was no Boat "A"; I grew worried, finally I was dumped into a barge, exposed to chilly winds, and towed by a tug-boat to Boat "A" berthing at a new and beautiful wharf. There we were brought to her broadside and lifted up by a huge crane and lowered to a hatch where I was originally supposed to be placed and from where we could not see the new sheds any more.

I only wonder why in the world I had to be hooked by the crane twice exposing me to extreme danger!"

Cargo "X": "I expected to be placed in a container van so that I can enjoy fine feeling of no sticky cratings. We all expected a good trip to the U.S. Against my expectation, I was hauled by a truck to the port without particular protections. At a customs shed, an inspection was conducted by a toughlooking uncle. After it was over we were packed back into the Van on the open quay blown by the winds. Then we got settled down finally. Now, why can we not be inspected and packed into a van at the factory and protected safely?"

If all the cargo were allowed to say straight-for-wordly what it experienced similar complaints would be heard.

I now suggest to hear what the Boats have to say about their fate. With deep sighs a Boat, may complaints as follows:

"Japan is adversely affected by a tight exchange control system and

the congestion of cargo is noted at the month-ends. For these reasons we often call at Japanese ports towards the end of the month. It looks as though all the ships are thinking the same thing, and as a result, as we approach a port we find it all filled with our sister ships. Thus nothing else is left to us but to stay outside the breakwater and wait for an open berth. Some crew members may be allowed to go ashore, but we, after a long sea-voyage would like to rest along the berth instead of having to wait for days at a buoy outside the harbor. Why are the Japanese unable to ensure a more smooth flow of cargo on an even schedule?"

These imaginary voices are, indeed, almost unbearable to hear for those devotedly engaged in the renovation task for all port and harbor facilities in the country, who think they are being insufficiently rewarded for their endeavors.

The writer is now brought to recall a truth expressed by a noted scholar in descriptive geography. He said: "All geographic causes do affect human life only through medium of various social causes". When applied to the ports and harbors the following may be said: "The facilities can produce effective results for the handling of cargo only through medium of various social causes."

Those who plan and execute the construction of modern port and harbor facilities should, before lamenting over the fact that they are not being used to the fullest extent as had been anticipated, re-examine the question of human relations developing from the running of any port and harbor.

Enterprises in ports and harbors engaged in freight movements include the following: shipowners, shipping agents, importers, exporters, land transportation companies, forwarding agents, insurance companies and-agents, bankers and others. It is quite apparent that the interests of all these enterprises are not always converge. In some cases amongst themselves, there are certain traditional managerial relationships in existence, while certain sharp competitions are also noted

among those in a specific category of business.

In addition to these private enterprises, there are a number of official organs with power of control over the affairs of the port and harbor. At all ports and harbors, the movement of people and cargo is checked by the immigration office and the customs office respectively, both being national government agencies. Livestock and plants are examined by the quarantine office.

This multiangled complex community can best be named "harbor society". Taking into account all the facts mentioned above it may be said that prior to making any study of port and harbor economy and administration, the sociological aspect of the problem should be thoroughly examined. We in Japan, so far unfortunately neglected this side of the problem.

It is not a difficult matter to introduce advanced technology in the construction of port facilities and to rationalize the layout of such facilities. But to bring about a rational use of all facilities there is a paramount need for adjusting human relations in the "harbor society". This is an extremely difficult problem, for it cannot be effectively solved by applying laws and regulations alone. By whom and by what means, then, can human relations best be adjusted? To ensure the effectiveness of ports and harbors, the modernization of their facilities should be achieved together with the modernization of human relations in the "harbor society".

It may be hardly possible to guarantee that the "harbor society", like many other societies, has an advanced progressive idea by itself. In what manner can we grasp the opportunity for starting the modernization of the "harbor society"? It may be a feasible plan to create a new progressive "harbor society" through the operation at the "virgin soil" where a modernized facilities are being introduced.

What is most essential in the management of a port and harbor is to execute its function in a well balanced posture with the modernized facilities and the rationalized human relations.

# Port Problems in Connection With Trade Development Between Europe and Africa

By Lord Simon

*President of IAPH*

*This is a remark addressed by Lord Simon, President of IAPH and Chairman of the Port of London Authority at a meeting in Genoa on November 5, 1965.—Editor*



Lord Simon

It is now generally recognised that prosperity, like peace, is indivisible. In the long run, no nation can grow rich on the impoverishment of others. And so let us be frank—the extensive programmes of international aid which have characterised the last twenty years have behind them a certain measure of self-interest, even though those who have advocated them and brought them into being have been genuinely moved by the desire to help those less fortunate than themselves.

Let us be equally frank and admit that countries suffering from inflationary problems at home or from balance of payments difficulties may, in the short run, find relief in measures designed to restrict imports. But we surely know enough now to be satisfied that any such restriction is a temporary palliative, and that the only effective cure is an expansion of world trade. To bring this about it is necessary to encourage in all possible ways the economic development those countries where development has hitherto been slow.

Many institutions - political, financial and economic—have been established with the object of bringing increased prosperity to developing countries. All recognise that the key is in increased international trade, for whatever the resources of a country may be, in its soil or in minerals below the soil, or in the aptitude and industry of its people, these are of little value until they can be effectively exploited—to

use a word which, in English, has acquired an unfortunate connotation, but which means, quite simply, to make the best possible use of any given resources in the interests of all.

Now since the majority of developing countries are geographically remote from the richer centres of population that create so large a part of consumer demand, and since, moreover, ninety per cent, of international trade is carried by ships and seems likely to continue to be moved in this way, it follows that one of the prime needs of any developing country is an efficient overseas shipping service connecting it with the markets of the world, and that, in its turn, requires efficient ports where ships can be loaded and discharged cheaply and without delay. It is no accident, therefore, that a considerable proportion of the overall aid extended by prosperous industrially-developed countries to their less fortunate neighbours—for we are all neighbours now—is for the provision and improvement of port facilities.

This assistance is provided by the United Nations through its Economic and Social Council. It is provided by groups of countries, such for example as the European Economic Community, or the countries who are joined in the Colombo Plan (one of the earliest of these international co-operative ventures to be established, in which my own country plays an important part). It is provided also, on a bilateral basis, by one Government to another. And it is provided on a non-

Governmental basis by individual ports who make experienced officers available to advise or even temporarily to take part in the actual administration of ports in developing countries, or provide within their own organisation for the training of men from these countries in all the many and varied skills which port operation demands.

Two bodies with which I am concerned play their part in co-ordinating this non-Governmental “traffic in aid”, if I may so describe it. The International Association of Ports & Harbors has recently set up a Committee on International Port Development, under the Chairmanship of my friend Mr. Austin Tobin, Executive Director of the Port of New York Authority, which includes in its membership representatives of the highly developed countries as well as of developing countries in Africa, Asia and South America. Its objectives are:-

1. To contribute to the expansion of world trade by actively assisting in the important and constructive development of the world's ports and harbors.
2. To encourage the more developed and experienced ports in extending, when requested, their advice and active assistance to the developing ports on a direct port-to-port basis, and so to share with them their professional and technical knowledge of port development and operations.
3. To encourage and facilitate through individual schedules

or group seminars the training of such capable members of their staffs as may be designated by the developing ports in the skills of port administration, planning, engineering, financing and operations. Such training programmes are to be undertaken by the member organizations of I.A.P.H., either under the sponsorship of established international programmes of port development or on the basis of direct port-to-port arrangements sponsored and encouraged by the Committee on International Port Development.

4. To encourage the developing ports to take advantage of the many international programmes of port aid and assistance and to facilitate their access to and participation in the programmes by such counsel, surveys and assistance as may be requested. Conversely, it will be the objective of the I.A.P.H., through its Committee, to co-ordinate the foregoing efforts with international programmes of port aid and assistance and to co-operate with such international organizations in implementing and advancing their programmes.

This Committee will work closely with established international organizations, and in particular with the United Nations and its organs. Its aim is not to supplant what they do but rather to supplement their efforts. The Association provides a common meeting ground for those concerned with the administration and operation of ports, and the personal contacts which it thus helps to establish will, I am convinced, make co-operation between the old-established ports of Europe and America and the ports in developing countries far more effective than they would otherwise be.

Another international organization which is active in this field is the International Cargo Handling Co-ordination Association ("I.C.H.C.A."). This, as its name implies, is especially concerned with

problems of cargo handling, but cargo handling is, of course, a vitally important part of port operations, and co-operation in this field is of great value. I.C.H.C.A. brings together all concerned with and interested in cargo handling techniques—not only port authorities but shipowners, cargo interests, stevedores and inland transport operators. As a result, it has exceptionally wide contacts, and is in a favourable position to help with advice.

Both these bodies, I.A.P.H. and I.C.H.C.A., hold Conferences from time to time, usually at two-yearly intervals, and these provide opportunities for officials from ports all over the world to meet, to hear and take part in discussions on matters of common interest and, perhaps most important of all, to make personal contacts, which often develop into personal friendships, with those engaged in activities similar to their own in other ports. Between Conferences both these bodies are able to provide information, or to put enquirers into touch with those who can best answer their enquiries.

Another important activity, of special value to those responsible for the improvement of ports in developing countries is the organization of "Seminars" at which problems relating to port administration or operation are discussed by a group of people drawn from many different backgrounds. The great advantage of this type of discussion is that those taking part are able not only to benefit from the mature experience of well-established ports, but also to compare their problems and the solutions they favour with the problems facing other ports in the same state of development as themselves, and the solutions which have been found in those other ports.

For of one thing we must be clear. There can be no slavish copying of the organization and techniques of a well-established port in conditions which are completely different. A moment's thought is sufficient to remind us, for example, that the economic point of balance at which it becomes profitable to use expensive mechanical equipment rather than to rely on manual handling of goods depends upon the precise relationship between the cost

of the equipment and the cost of labour. In some ports labour is scarce and expensive, and substantial capital investment can properly be undertaken in order to reduce the demand for labour. In others, efficient labour is plentiful and relatively inexpensive, and the capital cost of mechanical equipment needs more justification.

Again, large differences will be found to exist between the technical capability of dockside labour in one country and another. In time these differences will, no doubt, be narrowed down by education and training, but as things are, they exist and have to be taken into account. It is no use installing sophisticated machinery, and finding there is no one capable of operating it.

I have drawn these examples from mechanical handling, because the point I am wishing to make is perhaps most obvious in this field. But the same applies to every aspect of port operation, and in management itself. There are people in this world who are always pleading for standardization. Standardization has its place, and if it can be shown to lead to more economical operation it is to be sought. But it is not just an accident that different ports, even the most highly developed of them, are run in different ways or use different techniques. The methods of operation, and the form of management, have been devised to meet the particular needs of each port.

This does not mean that we cannot, at all levels of development, learn from each other. We must always be on the look-out for new ideas, and pick them up where we find them. For one thing, in the world of today, conditions themselves are changing so rapidly, that methods which were perfectly right and appropriate ten or twenty years ago need to be re-examined and reshaped. But whether we can apply to our own undertaking any particular new idea, or whether we can not, is a matter which each one of us must decide for himself.

This is one of the reasons why, in my view, it is of immense importance for the developing countries to use the machinery of international co-operation, which I have already described, to obtain the best

(Continued on Page 10)



# The Port of New York Authority's Marine Terminals Program

By S. Sloan Colt

*Chairman  
The Port of New York Authority*

The waterborne commerce of the Port of New York is the cornerstone on which the New York-New Jersey metropolitan area has developed. Furthermore, it is, in large part, the foundation of the area's present prosperity. For this reason, The Port of New York Authority, a bi-state agency charged with the responsibility for planning and developing marine terminals, is providing shippers with the most modern, efficient facilities so that the Port can maintain its position as the leading seaport of the United States.

Since 1945 the Port Authority has been engaged in a \$425,000,000 marine terminal development program in the New York-New Jersey port. To date over \$267,000,000 has been invested in the development of its six marine facilities. These six Port Authority ma-

rine terminals are Port Newark, the Elizabeth-Port Authority Marine Terminal and the Hoboken-Port Authority Marine Terminal in New Jersey; the Brooklyn-Port Authority Marine Terminal, the Erie-Basin-Port Authority Marine Terminal and the Port Authority Grain Terminal and Columbia Street Pier in New York.

In 1964, these six marine terminals handled over 9,200,000 long tons of cargo. This tonnage, valued at \$5,937,116,000, included more than 7,883,700 tons of high-value foreign and domestic general cargo which produces the largest volume of waterfront employment.

During 1964, Port Authority marine facilities continued to lead the nation in the handling of containerized general cargo with a total of



Mr. S. Sloan Colt

2,048,933 tons. They also handled 85% of the Port of the New York's frozen meat, 45% of the lumber, 93% of the automobile imports and 51% of the scrap metal exports that moved through the port during the year. This vast movement of waterborne cargo provided jobs for over 9,220 people at the bi-state agency's marine terminals last year who earned \$55,276,000.

## Elizabeth-Port Authority Marine Terminal

One of the major projects of the Port Authority is the development



Aerial View of Manhattan and New York Harbor

of the \$150,000,000 Elizabeth-Port Authority Marine Terminal on 703 acres of meadowland. This spacious new facility provides the vast upland areas needed for the efficient movement of waterborne freight by the most modern cargo handling methods, such as containerized operations. The marine terminal was opened in August 1962.

Sea-Land Service, Inc., pioneer containership company, occupies virtually the entire \$31,000,000, 111-acre first phase of construction, including its five deep-sea vessel berths and 58 acres of paved upland area. Earlier this year plans were announced for the enlargement of the Sea-Land terminal over the next two years to accommodate the expansion of the company's operations. Last month, Sea-Land occupied a sixth vessel berth and about 13 additional acres of upland area.

In addition, four dockside mobile gantry cranes are being installed in the Sea-Land area. Each of the powerful cranes—the first of which is being placed in operation this month at Sea-Land's new vessel berth—will be capable of lifting a 27½-ton container to a height of

53 feet and moving it outward 100 feet from the face of the wharf into the hold of a containership. Sea-Land vessels now in operation load and unload containers with ship's gear.

The \$34,000,000, 194-acre second phase of development of Elizabeth, now under way, will provide five vessel berth, 16 cargo distribution buildings, and some 60 acres of paved upland area. One of the berths, the new Sea-Land berth is in operation and the other four are nearing completion. Eight of the new buildings, containing more than 800,000 square feet, already are occupied by firms engaged in waterborne commerce.

Development of Elizabeth is continuing at a rapid pace. The \$20,390,000 third phase will add five more berths and some 65 acres of upland area to the expanding facility. Two berths are scheduled for completion in 1967 and the remaining three in 1968.

When completed in about 1975, the Elizabeth-Port Authority Marine Terminal will comprise 24 vessel berths supported by 400 acres of transit and open storage area, and

about 5,000,000 square feet of distribution and cargo handling space. At that time the great new seaport is expected to handle nearly 5,000,000 tons of cargo a year, of which at least 50 per cent will be containerized.

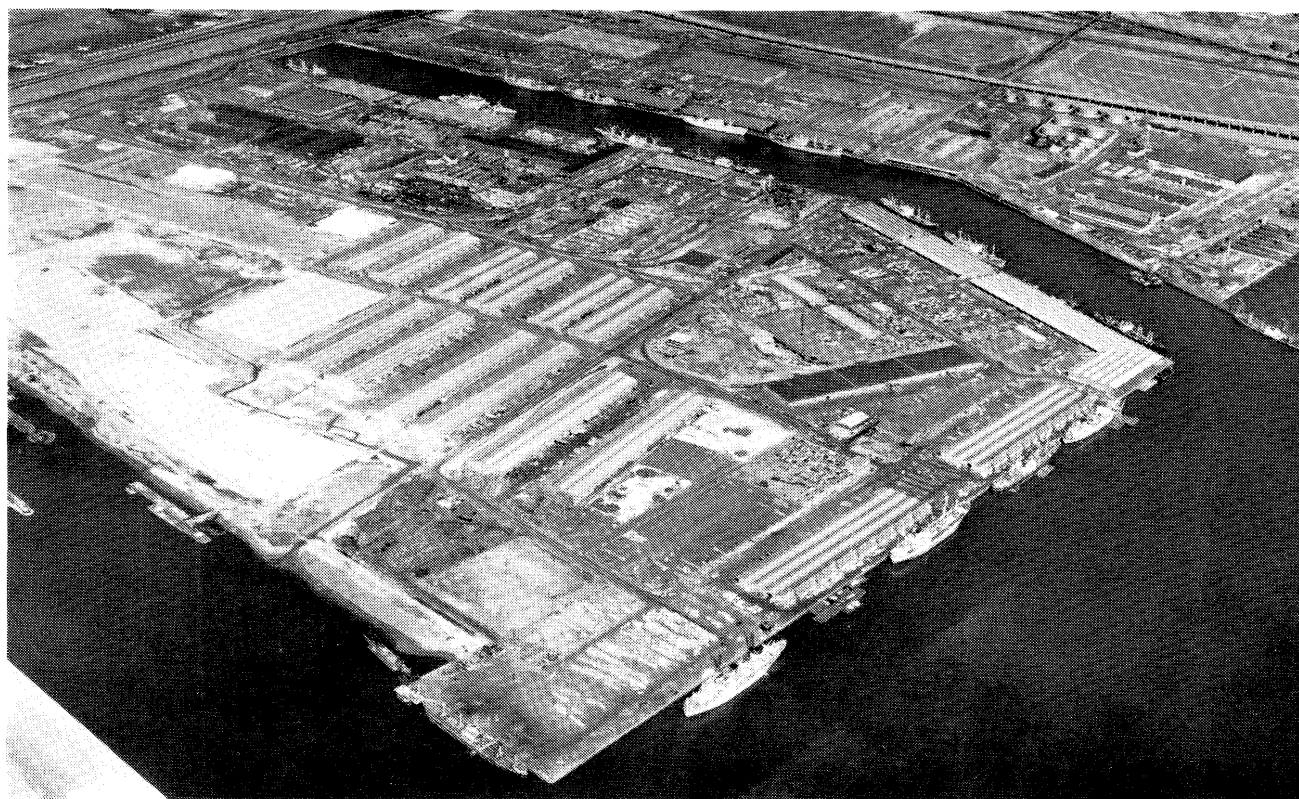
Upon completion, the great marine facility will provide employment for at least 9,500 people with an annual payroll of over \$52,000,000. It is estimated that an average of 335 people earning about \$2,700,000 are employed on construction jobs alone at the new facility.

To date the Port Authority's investment in the Elizabeth terminal amounts to over \$54,000,000.

### **Port Newark**

Port Newark is adjacent to the Elizabeth terminal. Developed and operated by the Port Authority since 1948 under a 50-year lease with the City of Newark, this modern 707-acre seaport offers unmatched facilities and services. Its 31 deep-water berths are supported by over 100 acres of paved upland area.

Twenty-four cargo distribution buildings provide temporary storage convenient to the vessel berthing



**Port Newark**

**General View of the  
Brooklyn Port Author-  
ity Marine Terminal  
with Manhattan in the  
background.**



areas. The seaport includes an automated banana handling terminal, a bulk wine terminal, a temperature-controlled cigar distribution building, a 15-acre lumber terminal, a fumigation plant, container rental and repair services, export packing services and bonded cargo space.

A carfloat bridge enables all railroads to make deliveries of freight cars to all areas of Port Newark and the Elizabeth Marine Terminal.

A major improvement completed at Port Newark this past spring was a public cold storage warehouse to accommodate the growing volume of imported frozen foods in the New Jersey-New York port. The 1,100,000 cubic-foot building, located midway between the deep-water berths on the Newark and Elizabeth channels, was built at a cost of \$1,750,000. It was put into operation in June when the first shipment of frozen mutton from New Zealand was stored in the vast refrigerated space prior to its distribution to importers.

Port Newark is the nation's principal import center for frozen meats, the leading port of entry for foreign cars and one of the larger lumber ports on the Atlantic Coast. It is also an important distribution

center for products as diverse as bananas, salt, cigars and wine.

More than 4,000,000 tons of cargo moved through Port Newark in 1964, including about 2,700,000 tons of general cargo and 1,300,000 tons of bulk liquids. This commerce provided jobs for over 4,500 people who earned an estimated \$25,436,000 during the year.

Since it undertook the operation of Port Newark 17 years ago, the Port Authority has spent about \$86,000,000 on the development of the seaport. When the Port Newark project is completed with the construction of six new vessel berths and 70 additional acres of paved upland, the Port Authority's investment will be increased to \$125,000,000. These new facilities will enable Port Newark to handle some six million tons of cargo a year. This will provide jobs for about 8,500 people with an annual payroll of about \$43,000,000.

#### **Hoboken-Port Authority Marine Terminal**

Another important marine facility on the New Jersey side of the harbor is the \$18,000,000 Hoboken-Port Authority Marine Terminal. Located on the Hudson River just opposite midtown Manhattan, this

active shipping terminal has been operated by the Port Authority since 1952 under a 50-year lease with the Federal Government and the City of Hoboken.

The bi-state agency completed its extensive modernization of the Hoboken terminal in 1956. Two modern piers, a headhouse and spacious upland areas were constructed and a third pier was entirely rehabilitated. The facility is one of the most active in the harbor and has been leased to American Export Isbrandtsen Lines since 1956.

#### **Brooklyn-Port Authority Marine Terminal**

Concurrent with its marine terminal development activities in New Jersey, the Port Authority has undertaken a massive waterfront redevelopment program on the New York side of the New York-New Jersey Harbor.

Along two miles of Brooklyn waterfront, the agency has invested nearly \$100,000,000 in the development of the Brooklyn-Port Authority Marine Terminal. This great facility on the 40-foot deep Buttermilk and East River Channels provides 12 new single-story, steel and concrete piers, replacing 25 antiquated

structures. The new piers provide 27 modern berths, each with 25 to 30-foot wide aprons, and about 90,000 square feet of shed space per berth. Adjacent to the piers are extensive areas of paved and lighted upland for essential open storage and truck parking space. These modern facilities are capable of handling 3,500,000 tons of cargo a year, 27 per cent of the Port of New York's foreign general cargo trade.

Typical of the new piers are Piers 9A and 9B, opened in November 1963. Today, both are handling vast volumes of general cargo. Pier 9A is 750 feet long on the north, 630 feet long on the south and 320 feet wide. Pier 9B is 700 feet long on the north, 650 feet long on the south and is also 320 feet wide. Each of these piers has 30-foot wide aprons to permit efficient loading and unloading of cargoes during peak periods of traffic.

The two steel and aluminum pier sheds provide a total of eight acres of covered space, supported by more than seven acres of paved upland area. There is two-story air-conditioned office space within each shed, as well as a crib area for the storage of valuable shipments and a heated cargo area for perishables. The concrete floors of the sheds can support

loads of 500 pounds per square foot. Plastic skylights provide daylight conditions in the sheds, which are ventilated both naturally and by exhaust fans in the roof to protect cargoes.

On the inshore end of each pier shed, there are 18 tailgate-high truck backup spaces along a platform with eight electrically-operated doors, some as large as 30 feet wide and 12 feet high. In addition, each pier shed has 27 doors for easy access by trucks and mobile cargo-handling equipment.

Piers 9A and 9B are built on creosoted timber piles capped with concrete, with a poured concrete deck. They contain the most effective fire protective devices, including complete sprinkler and wet stand-pipe systems.

#### **Erie Basin-Port Authority Marine Terminal**

The Erie Basin-Port Authority Marine Terminal has been important facility for overseas commerce for more than a century. Strategically located in Brooklyn on Gowanus Bay, not far from the entrance to New York Harbor, this terminal consists of 40 acres of upland and 71 acres of submerged land suitable for future development. The facility includes six finger piers, a warehouse pier and two breakwaters

equipped with transit sheds. Among the buildings provided by the Port Authority are a new headhouse, a garage and an office for Piers 1, 2 and 3 at a cost of over \$1,000,000. The agency began operating the terminal in December 1958 and has at the moment invested almost \$12,000,000 in the facility.

#### **Port Authority Grain Terminal and Columbia Street Pier**

Adjacent to Erie Basin-Port Authority Marine Terminal is the Port Authority Grain Terminal and Columbia Street Pier. This facility was built in 1922 by the State of New York as part of the New York State Barge Canal system and was transferred by the State to the Port Authority in 1944.

The Columbia Street Pier accommodates four deep-sea vessels simultaneously and is used by a number of steamship companies. The seven-acre upland area adjacent to the elevator and pier is used as a public lumber storage area.

These development programs at the Port Authority's marine terminals in the New York-New Jersey Harbor are tangible evidence of the bi-state agency's determination to provide the most modern and efficient facilities and thus to keep the Port of New York in the forefront of world ports.

## **Port Problems—**

**(Continued From Page 6)**

possible advice on port management. For unless management is soundly based, mere technical advancement may lead nowhere.

The different conditions which pertain in different ports do, as I have said, require different treatment, and there is always a danger that the expert, however highly qualified, who goes out under the auspices of some international organization to advise on port matters in one of the developing countries, may try to apply ideas to which he is accustomed but which are not necessarily appropriate. Even the most successful of port managers has seldom had experience in more than one or two ports, and if, as is

likely, he has been over-worked most of his life, he may have had little opportunity to understand, still less to study, the problems of others. Furthermore, as we know in the field of education, deep and wide knowledge does not always go with the ability to impart it to others.

I do not wish, of course, for one moment to underestimate the value of such assignments. There are many brilliant people who are able to see their own experience as a product of the conditions in which they have worked and apply it successfully to a different situation. But I believe that more enduring, and on the whole more satisfactory, results are obtained by putting a potential manager first through a general course—such perhaps as is provided by one of the "Seminars" to which I have referred — and then arranging if

possible for quite a lengthy period to be spent in two or more ports, observing the different applications of principles with which he has become familiar, and seeing for himself how these principles will best be applied when he gets home.

That is just my personal view. All the many ways in which help can be given by well-established ports to the growing ports in developing countries have their advantages. What cannot be challenged is that if the developing countries are to advance and to improve the standard of life of their peoples, trade must increase and flourish. If trade is to increase and flourish, seaports must be improved. And a special responsibility rests on those of us who are connected with the well-established and highly developed seaports of Europe to offer all the help we can.



# The World Trade Center in The Port of New York

**By Austin J. Tobin**

*Executive Director*

*The Port of New York Authority*



**Mr. Austin J. Tobin**

One of the principal assets of the Port of New York is its remarkable geographic advantages: extensive low-lying waterfront areas, sheltered harbors and bays and deep, ice-free channels. Building on this geographic base, the people of the Port, have, over the past three centuries, developed a tremendous variety of land, sea and air facilities—piers, docks, terminals, and highways. Hand in hand with the development of these facilities came the extensive international business services which are indispensable to the administrative processing of United States and foreign commerce. The Port has attracted a world trade community of exporters and importers, marine insurance companies, commodity exchanges, banks, freight forwarders, customs house brokers, American and foreign government agencies and numerous other agencies which constitute a matchless reservoir of international commercial expertise.

The efficiency and enterprise with which these services operate affect not only the citizens of the Port itself but the economic well being of millions of people throughout the world. In the tradition of mercantile of millions of people throughout the world. In the tradition of mercantile leadership which has characterized the Port throughout its history, New York's world trade community today is aware of the over-riding need for a greater centralization and coordination of all essential trade services, so that existing patterns of international commerce may be streamlined and new patterns opened up. To meet these objectives a great World Trade Center in the Port of New York is being developed by The Port of New York Authority in accordance with legislation enacted by

the States of New York and New Jersey.

The World Center will be built on a 16-acre site on the west side of lower Manhattan in the heart of the Port of New York's international trade and financial community. Construction of the project is expected to begin at the end of the year. The project is scheduled to be completed in stages over the next six years.

The architectural plan for the Center calls for the construction of two great towers, each 110 stories (1,350 feet) in height, rising from a great plaza of almost five acres. Multilevel buildings, almost completely encircling the plaza, will house many of the world trade services, including the United States Bureau of Customs, foreign consulates or commercial offices, foreign government trade centers, trade associations and extensive exhibit areas. Incorporated in the design are numerous services for the convenience of businessmen, including on-site parking for 1,600 cars and a 350-room hotel.

Ten million square feet of rentable space will be contained in the great structures. Of the total, some four million square feet will be contained in the great structures. Of the total, some four million square feet will be available for rental to business firms engaged in trade with other nations. The balance of the space is earmarked for State, Federal and foreign government agencies and for essential services for the 50,000 people who will work in the complex everyday.

The United States Bureau of Customs, offices of the Department of Commerce, Port Authority admini-

strative offices, foreign consulates and commercial attaches, foreign government purchasing missions, Customs House brokers, trade associations, exporters, importers, freight forwarders, international banks, marine insurance firms and other agencies and businessmen related to foreign trade also will be among the occupants of The World Trade Center. The centralization of these basic elements in the handling of foreign trade will provide an unparalleled opportunity to streamline and coordinate their activities with resulting dollar and time savings and enormously increased efficiency. These efficiencies and the rapidity of communications within the Center are expected to contribute substantially to the expansion of world trade.

Supplementary services in the Center will include a World Trade Information Service, a World Trade Institute, and extensive exhibit and display facilities. The Center thus will become an international market place for the buying and selling of goods and products of other nations as well as those of the United States.

The World Trade Information Service will be a clearing house for international trade information. It will provide, on a scale not now available, accurate and timely assistance on world trade regulations, markets and opportunities to government agencies and American and foreign businessmen. It will fill the urgent need for a "one-stop" world trade information facility.

Government agencies and busi-

**(Continued on Page 20)**



# The Latest Developments in Harbour Activities of Canada

By Louis R. Talbot, Eng.

*Vice-Chairman  
National Harbours Board*

*This is an address delivered by Mr. Louis R. Talbot, Vice-Chairman,  
National Harbours Board at the 54th Annual Meeting of the AAPA.  
—Editor*

It was with the greatest pleasure that I accepted your President's invitation to speak to you during this Convention on Canadian Ports and bring you up-to-date on the latest developments in harbour activities during the past year.

A talk such as this cannot be devoid of statistics. I shall ask for your indulgence and quote a few extracts from the shipping statistics which are published by the Dominion Bureau of Statistics at Ottawa.

During 1964 the volume of cargo handled at Canadian ports increased to 232,952,022 tons from 206,321,288 tons handled in 1963. Cargoes loaded for, and unloaded from foreign countries rose 14.3 per cent to 130,962,823 tons from 114,567,311 tons. The tonnage handled in coastwise shipping showed an increase of 11.1 per cent, to 101,989,199 tons from 91,753,977 tons. Vessel arrivals and departures in international shipping and the coastwise trade numbered 266,549, which was a slight increase over the 266,324 recorded in 1963. The registered net tonnage of these vessels, however, increased 6.1 per cent to 364,922,449 tons from 343,919,195 tons.

The National Harbours Board who is charged with the administration, operation and control of those ports where the greatest percentage of foreign inward and outward traffic is handled shared as follows. It handled 43,754,545 tons or 33 per cent of the foreign traffic and 27,650,072 tons or 27 per cent of the coastwise traffic. The total traffic handled by National Harbours

Board ports increased by eight per cent to a new high of 71,404,617 tons. This figure represents 30 per cent of all water-borne cargo tonnage handled in Canada.

The growth and economic development of Canada has during the past decade created new demands for port facilities to handle water-borne commerce. As an example there is a geographical area located on the North Shore of the Gulf of St. Lawrence adjoining the Labrador border which used to be known as the land of Cain. It was arid, barren and very thinly populated.

At the end of 1964, the hydro-electric installation on the Lower St. Lawrence North Shore amounted to 2,793,130 hp. The latest (1963) Electric Power Survey of Capability and Load, carried out yearly by the major producers of electric energy in Canada, and reported by the Dominion Bureau of Statistics, shows firm power peak load in the Province of Quebec as having grown from 4,253,000 Kw in 1951 to 7,827,000 Kw in 1963 and as being expected to attain 10,226,000 Kw in 1968. A similar rate of growth (5.5%) by the leading producers, as that expected for the period 1963-68, would bring the peak load to 13,440,000 Kw in 1973 and 17,600,000 Kw in 1978. Such firm power peak loads would necessitate between now and 1978 an installation of some 10,000,000 hp with most power requirements in Quebec between 1964 and 1975 being provided from the North Shore power sites. New developments will bring the hydro-electric

installation on the North Shore of the Gulf of St. Lawrence to some 5.2 million hp by the end of 1968 and to about 10 million hp by 1973. Such tremendous development of hydro-electric power resources combined with the discovery of iron ore mines and the advent of new processes of iron ore pelletizing has resulted in the creation of a vast economic region which has seen the construction of major harbours such as Seven Islands, Port Cartier, Baie Comeau and Pointe Noire.

The Lower St. Lawrence and Gulf ports handled in 1964 forty million tons of water-borne cargo and the estimate for 1970 is 52.5 million tons. The Port of Seven Islands which has the third highest cargo tonnage of all Canadian ports handled in 1964, 16,602,796 tons of cargo, 95 per cent of which was iron ore.

The greatest part of the capital investment in these new ports is private capital and the contribution from the Federal Treasury has been minimal. These ports are generally operated as private ports with a degree of supervision from the federal department of Transport. They are not operated by harbour commissions.

Another example of port development to serve an economic region of Canada is to be found on the North Coast of New Brunswick where the new port of Belledune is being constructed jointly by the National Harbours Board and the federal department of Public Works to serve a new industrial complex centered around Brunswick Mining



**Aerial view of Vancouver harbour, British Colombia, looking West, and showing the Bayshore Hotel in the foreground and high-rise apartment buildings in the background.**

and Smelting Corporation and East Coast Smelting and Chemical Company. The projected capital expenditure in the immediate area of the new port is now estimated at 163 million. The designed depth of the bulk wharf is 42 feet. The estimated cargo which will be handled in the first year of operation will be 7.3 million tons. The products handled at the new port will range from concentrates, oil, phosphate rock, pyrites, fertilizers, ammonia, coal, coke to lumber. The estimated capital expenditure for harbour construction will be 16 million. This figure covers only the cost of the infrastructure and the dredging. It does not include the cost of the material handling equipment comprising the superstructure of the bulk handling facilities. This port will come under the administration, operation and control of the National Harbours Board.

Whilst discussing port activity on the Atlantic Seaboard it would be well to mention that following a \$20 million refurbishing job by the Department of Public Works, the Port of St. John's in the Province of Newfoundland came under the jurisdiction of the National Harbours Board at the beginning of 1965. This port has a great historical background. Many European and Asiatic seaports have longer histories; none in North America has as long a one and certainly few

ports in the world can compare with St. John's for colour and adventure in its past. From rugged Signal Hill in the east to the Waterford valley in the west, the almost landlocked stretch of tranquil sea that is St. John's harbour has witnessed since it was discovered June 24, 1497, warfare, fires, pestilence, and the golden years of a world wide maritime trade. The Island of Newfoundland with its population of one half million people will share in the future economic expansion of Canada. The forthcoming hydro-electric development of Churchill Falls in Labrador will bring with it the establishment of major industry. Another national harbour is already being planned for this province. Whilst the Port of St. John's may be the most ancient it now compares most advantageously with any other port with its modern methods of cargo handling. Canadians have pioneered the use of sideboard loading ships for the fast Seaway traffic from the Great Lakes to Montreal. One of the older Canadian steamship companies has pioneered the use of this type of general cargo ship for the Newfoundland route. The pilot ship which was placed in service during the past summer runs a weekly service during the past summer runs a weekly service from Montreal to St. John's. Through the efficient combined use of containers and pallets

the cargo is usually discharged in ten hours. Allowing for travel time of five days from Montreal to St. John's and return the entire movement under normal weather conditions is carried out in less than six days. Time does not permit to give the details of the operation. It is hoped that a film will be produced which will describe the cargo handling phase of the operation. Another film is now in preparation which gives the engineering details of the reconstruction of the harbour of St. John's. It is suggested that those of you who may wish to avail themselves of the latter film may do so by communicating with the head office of the National Harbours Board in Ottawa.

Let us now transport ourselves from St. John's, Newfoundland, 3,110.3 statute miles to the West Coast of Canada, to the Port of Vancouver. The growth of this port has been somewhat phenomenal in the past five years. From a total of 12,380,431 tons of water-borne cargo unloaded from and loaded to vessels in 1960 this figure has increased to 19,793,810 tons in 1964; the increase being 60 per cent. The commodities which have contributed most to the growth of this traffic have been grain, lumber, coal, logs, pulpwood chips, petroleum products, sulphur, woodpulp and flour. The Provinces of British Columbia and Alberta have witnessed a high

degree of economic growth and the Port of Vancouver has served these two provinces most efficiently. There has been in the past few years a gradual shift of the traditional grain export pattern from the east coast of Canada to the west coast. During 1964 the Port of Vancouver shipped 5,772,521 tons of all grains. It now prides itself as being the largest wheat export port in the world. The hinterland of the port brings to it over one million tons of coal annually for shipment to Japan. The vast discoveries of potash in Alberta are gradually being put into production and it is expected that by 1967 approximately three million tons of potash will be shipped through the Port of Vancouver. The National Harbours Board is justly proud of the Port of Vancouver which should within a few years become Canada's No. 1 Port. Whilst it is appropriate to judge a port by the amount of its tonnage it is well to point out that the Balance Sheet of the Port of Vancouver reflects a very strong financial position and the net profit of the port in 1964 after provision for depreciation and interest on loans was in the order of \$1½ million.

The economic future of Canada at this time is very promising and the resultant effect on its ports augurs well. The export patterns indicate a large outward movement of bulk commodities which could be out of proportion to the outward movement of goods from its manufacture. This situation creates an economic unbalance which we hope will be corrected.

Stress has to be placed in the design of waterways and harbour facilities on their ability to handle large volumes of both inward and outward bulk commodities. New bulk facilities at the Port of Vancouver are being designed to provide a minimum depth of water at lowest tide of 45 feet. There appears to be a great deal of controversy at the present time on an acceptable criteria for the design depths of berths at harbours. I had occasion in July of this year to make a study of this subject and present a paper to a joint meeting of the Montreal Port Council and

the Marine Hydraulics branch of the department of Transport. This study indicated that for general cargo berths the criteria set in the manual "Port Design and Construction" published by The American Association of Port Authorities still holds.

In the case of bulk carriers there were 127 ships on order at 30th April 1965, representing 56.7 per cent of the total tonnage on order in the class of 35,000 tons and over with a draft of 35 feet and over. If an allowance of 2½ feet is made for vessel squat and 2 feet for bottom clearance a minimum channel depth of 39'-6" would be required to accommodate these bulk carriers. Depending on location and the traffics which offer it would appear that a design depth of 42 feet or 45 feet minimum at lowest tide will accommodate 95 per cent of the bulk carriers of 35,000 tons and over under construction in 1965. The problem of adequate design depth of berths to accommodate bulk carriers is one which requires continuous reappraisal.

So far we have not had to deal with tankers to any great extent. The greater portion of the crude oil required for the Eastern market reaches Montreal via the pipeline which runs from Portland, Maine, to Montreal. The resume of the statistical information in the case of tankers on order as at 30th April 1965, as reported in the supplement to Fairplay Shipping Journal, "World Ships on Order" would indicate that minimum channel depth of 42'-6" would be required in salt water to accommodate 75.9 per cent of the total tonnage represented by the 187 larger tankers of 60,000 tons d.w. and over on order at 30th April 1965. The provision of channel depths and harbour facilities to accommodate tankers of this size represents a problem which bears close scrutiny and the economic benefits to be derived by the state or the public at large should receive priority over the pompous civic pride of a port authority which lays claim to its ability to handle the largest tankers afloat. A continuous appraisal is required of the trends in ship design and ship construction and the facilities which

you design and build today should be economically viable and able to handle the shipping requirements for the next thirty to forty years.

Plying the Atlantic sea lanes at the present time is Canadian Pacific's new generation of cargo liners in the 6,750 tons d.w. class, specially designed to take advantage of such modern cargo handling developments as containerization, these new ships have numerous other innovations, among them ice-breaker bow and strengthened hull, extensive engine room automation and cargo gear arranged to permit faster in port turnarounds. The latest of these ships, the "BEAVEROAK" which has a service speed of 16 knots will serve St. Lawrence and Great Lakes ports in summer and Saint John, New Brunswick and Montreal in the winter season.

Of interest to some of you is the future of winter navigation in the St. Lawrence. Winter shipments from the lower St. Lawrence and Gulf ports and other St. Lawrence river ports above Baie Comeau through Cabot Strait during the last winter navigation season (1964-65) attained 7,500,000 tons. During the past six years substantial progress has been made in making the St. Lawrence River navigable the year round. There was a time when the harbours of Montreal, Trois-Rivières and Quebec were closed from mid-December to mid-April. The construction of new cargo liners such as the "BEAVEROAK" by Canadian Pacific is an indication that the ice barrier which would force some of our important harbours to shut down during the winter is slowly being conquered. The long term economic benefits to be derived from the expenditure of state funds for the construction of a modern ice-breaker fleet for our Canadian Coast Guard appear at this time to justify such expenditure.

There has appeared on the shipping scene in Canada in recent years the self-unloader type of vessel such as the "S.S. ONTARIO POWER" which now transports Nova Scotia coal to Toronto. During 1964, 2,347,558 tons were transported. This ship designed for Seaway draft of 25'-6" measures



Aerial View of Vancouver, British Columbia

710'-0" in length; its dead-weight at 25'-6" fresh water is 21,420 long tons. The introduction of this type of vessel in the ocean and coastal trades has brought changes in the historical movement of coal and other bulk commodities in Canada and the savings it offers to shippers in the movement of bulk should be appraised in the design of facilities in the future and the provision of open areas to receive its cargoes.

Having sketched ever so briefly a picture of present port activities in Canada it might be well to outline some of the demands which will be placed upon us as port administrators in the future. These are as follows:—

1. **Management**—In order for Ports to be efficient they must adopt and implement the management tools of corporate enterprise. One should remember that the taxpayer in the case of public ports is the shareholder and as such is entitled to the best return on his investment. The "taxpayer" has sometimes been defined as "a person who does not have to pass a civil service examination to work for the government". At the time our Board came into being in 1936 it absorbed seven local harbour commissions and some of the inefficiencies pertaining to them at the time. As late as 1937 special votes of Parliament were being initiated as unemployment relief measures. Some of the harbours had become creators of works and

historical backgrounds such as this are not readily eradicated. Managers must surround themselves with an aura of professionalism and must avail themselves of the opportunities offered to them by universities and associations to up-date themselves in the current management techniques followed by private enterprise. A manager should not isolate himself in the solitude of day to day operations but should be alert to modern developments in the fields of finance, labour relations, shipping, traffic and real estate.

2. **Labour Relations**—Our Board has in existence throughout the system some 30 labour contracts with an assortment of labour unions. Our position is not unlike that of private enterprise when dealing with labour negotiations in that our managers not having received training in the field of personnel and labour relations, especially at the smaller establishments, find themselves at a disadvantage when dealing with professionals at the negotiating table. The operation can then be compared to one of extinguishing fires and saving face. I would suspect that the same problem exists at most ports and I would suggest that where the positions do not already exist only the best trained specialists be recruited to deal with personnel and labour relations at the ports.

3. **Engineering** — The National

Harbours Board is fortunate in having in its employ a competent staff of engineers specialized in the design of marine works and related structures. Here again the erosion of time at some ports removes the varnish of professionalism from the port engineer and too often do we see his activity related to that of a foreman of works. I would make a strong appeal to port administrators to heed the following definition of Civil Engineering given by Mr. C.L. Miller, head of the Department of Civil Engineering at the Massachusetts Institute of Technology:— (Quote)

"The engineering of systems of constructed facilities" limits civil engineering to a clearly identifiable field of activity. It recognizes that we are primarily concerned with engineering, that we are responsible for the engineering which relates to construction, that the things constructed are facilities, and that the facilities must be engineered as operational systems" (End of quote)—

#### 4. **Research and Development**—

We all know that the planes which we give to our air forces, the ships that we give to our seamen or the weapons which we give to our infantrymen may be obsolete before they leave the drafting board. We are familiar with the time, energy, and the vast sums of money which can be expended in the conquest of space. The giants of industry all have research laboratories whose entire endeavours are devoted to the improvement of the products of their manufacture.

The question which I would like to leave with you is: How do we fare by comparison? For an industry whose combined capital assets surpass those of the major United States corporations, have we kept pace with the economic and industrial developments which surround us. Whilst in Canada the system of port administration may be different from that which prevails in the United States there are several problems which are common to all port administrators. I suggest that the accent should be placed on the positive and that we should keep alive and equal to the challenges which shall be placed before us.

# The Port of Copenhagen

The Port of Copenhagen offers numerous advantages to international Shipping and Commerce.

It is a strategic point of the North European trades and the ideal emporium and transit centre for the entire North and Central European fields of Commerce.

It is a natural well protected port, and the absence of tides makes it easy of access by day and by night all the year round.

The goods handling is highly mechanized, and adequate sheds are at disposal for all sorts of cargo.

Ample space is reserved for Transit Goods and Consignment Stocks, and special plants are at hand, such as heated fruit sheds, cold storage for fish, butter, eggs, fruit, meat and similar, and also granaries, hardwood sheds etc.

Special attention must be drawn to the Free Port, a Foreign Trade Zone and a Foreign Production Zone inside the Port of Copenhagen.

There any kind of merchandise can be discharged, stored, mixed, manufactured, repacked, reforwarded and transshipped without paying customs duties, and having to pay taxes neither on value nor on profits made on sale and purchase of goods, when handled for foreign account.

Transit Goods can remain 30 days in the warehouses of the Copenhagen Free Port Company Ltd. without paying warehouse rent.

Foreign and Danish Merchants can hire warehouse space in the Free Port for their own and private use. In such warehouses goods can be manipulated in nearly every way without interference from the Custom Authorities.

Behind the quays of the Port of Copenhagen, and in the nearest vicinity of the City, Danish and Foreign industries are concentrated making Copenhagen the largest Industrial Centre of Scandinavia.

Numerous modernisations and

vast extensions have been made in the course of the nearest two decades, large extensions are at work, and still larger extensions are planned and will be commenced in a near future.

The modernizations made refer to warehouses of which some have been partly rebuilt and many broken down and replaced by modern structures. The crane park has been partly renewed, the top capacity of the floating cranes has been carried from 40 tons to 180 tons. New quays have been erected and the depth of water alongside quays and in the fairways have been deepened where considered expedient. To the benefit of the intense mechanization of the goods handling, miles of quay aprons have been covered by hard surface covering.

Extensions have been made throughout the port, but especially in the Oil Port which has been in steady and speedy growth ever since the last war.

The extensions in work are the reclamation of 280,000 sq.mtrs. for industrial purpose in the southern, 400,000 sq.mtrs. for a power station in the eastern, and 150,000 sq.mtrs. for commercial purposes in the northern sector. The latter area has been furnished with 650 metres of quay arranged for roll-on/roll-off services, and the power plant will get 300 metres of quay. The reclamation of 38,000 sq.mtrs. in the southern sector, also for roll-on/roll-off transport has just been started.

It is planned, as soon at the roll-on/roll-off quay with rear area in the northern sector is finished, to continue the erection of a series of new harbour basins further to the north including 2,000 metres of quay with a water depth of 10 metres as well as 800 metres with 6.3 metres. The Harbour Board has granted 110 million Danish kroner to that purpose.

Thus the Port of Copenhagen Authority are carefully preparing the future to make sure that the

port's customers will always get the the advantages and the facilities available in a modern World Port.

**Capacities and Facilities.**

The cargo handling in the Port of Copenhagen is highly mechanized, and more and more quays are furnished with modern smooth quay aprons to facilitate the use of modern implements.

The floor space of the sheds and warehouses in the port area is of about 490,000 sq.mtr. including 260,000 sq.mtr. in the Free Port.

Heated fruit sheds . . . . .	40,000 sq.mtr.
Refrigerated space . . . . .	10,000 " "
Timber areas, open . . . . .	30,000 " "
Coal sites . . . . .	200,000 " "
Granaries . . . . .	140,000 tons
Oil Tanks . . . . .	990,000 cbm

On the quays are about 150 electric cranes, 13 pneumatic grain elevators (up to 200 tons per hour), and special gear for various commodities.

Two floating cranes are at hand, one of 180 ts capacity, and two dry-docks (up to 70,000 ts. dw.), a floating dock (7,000 ts. dw.) and 6 patent slipways for ships of maximum 2,000 ts. are at disposal.

Three Oil Bunkering Stations, one Coal Bunkering Station, and a Degaussing Plant are located immediately at the entrance to the port. Bunkers are also supplied by barge throughout the port and in the roads.

## Navigation.

Owing to the absence of tides the port is accessible by day and night all the year round.

Pilotage: Not compulsory except for a few vessels having to pass the bridges to the South Harbour.

Towage: Not compulsory except for ships of a certain size having to pass through the South Harbour.

## Port Dues.

Harbour Dues: 20 ore per NRT is paid on every call at the port except by ships calling for bunkers, provisions and the like.





**The Oil Harbour "Provostenshaven"**

**Quay Dues:** 16 ore per ton cargo loaded or discharged is payable by ship moored alongside a quay and 8 ore per ton if the ship loads or discharges in buoys or is moored in second line.

#### **Light Dues.**

No light dues are levied.

## **History**

Founded about 800 years ago the Port of Copenhagen is one of the oldest ports in Europe.

Excavations in the town and harbour areas have given evidence that the natural port was already used by hunters and fishermen thousands of years before Copenhagen was founded.

Early it became a ferry for the territories on the other side of the Sound, and rich fisheries and its ideal geographic location made it a centre for international trade and commerce.

The Danish King Valdemar presented the ferry and its surroundings to Bishop Absalon who in 1167 built a castle as protection against the pirates ravaging the Danish coast at that time.

This was the first impulse of a

town community where shipping and trade could safely be carried out under the protection of the bishop's military power.

The importance of the small town grew steadily but slowly and not until the 17th century during the reign of King Christian the Fourth began a real town-planning.

The King carried out big works for the defense, the harbour area was considerably extended, and big efforts were made to encourage shipping and trade flourished in the town during that period.

Then followed a short period of stagnation until a new boom came about 1850.

In 1894 the Copenhagen Free Port was opened to traffic, and ever since the traffic on the port has increased steadily only interrupted by the two world wars.

#### **Port Administration.**

After the death of Bishop Absalon the harbour belonged to the Bishopric of Roskilde until the King made Copenhagen his residential town and thereby the Capital of Denmark. The harbour was then governed by the City Corporation.

It was not until 1692 that a real Harbour Management was formed. A Harbour Committee was appoint-

ed to maintain supervision of the harbour, but this latter was still considered as part of the Town Management with which it had joint treasury. The State, however, got gradually more and more influence, and from 1750 and onwards the harbour was looked upon as a State affair.

By Act of Parliament of the 30th December 1858 the harbour was given a certain form of self-government, and this was confirmed and extended by Act of the 29th April 1913, in which it is stated that "the trading Harbour of Copenhagen is a selfowning institution managed by a Harbour Board" of which the City Prefect of Copenhagen is chairman by virtue of office.

The Board consists of 16 members, two elected by the Government, four by the Parliament, two by the Municipal Authorities, two by the City Council, two by the Merchants' Guild, two by the Ship-owners' Associations, and two by the Federation of Danish Industries.

The Port Administration is in charge of a General Manager appointed by the Minister of Works. **Commerce.**

Denmark is an agricultural, commercial and industrial country. But as very few raw materials are found in the subsoil, the imports of these and of semi-manufactured products are considerable, and they always exceed the exports which consists of the Danish agricultural products and of high quality finished products.

The central position and other advantages make the Port of Copenhagen a natural transit centre, and goods of all kinds pass its quays and warehouses to and from all parts of the world, and the Copenhagen Free Port plays a prominent part in the international traffic and trade.

The commercial exploitation of the Free Port is in the hands of the Copenhagen Free Port Co. Ltd. who owns and operates all warehouses, sheds, cranes and other installations and gear. The Company's tariffs are controlled by the Ministry of Works, and its shares are owned by the Port of Copenhagen Authority.

# Post-Revolution Developments In The Port of Karachi

By I. A. Abbasi, S.Q.A.

*Chairman, K.P.T.*

The post-Revolution era will go down in the history of Pakistan as the glorious renaissance of progress and achievement in every aspect of national life. It marks an epoch of national regeneration and direction in which not only high standards were set but achievements surpassed the expectations and surprised the world at large.

In every sphere of national activity from politics to agriculture and Industry to international trade, there has been a rapidly growing rate of progress which has put the economy of the country on a dynamic pattern.

The port of Karachi is Pakistan's largest port. It handles the entire sea-borne trade of West Pakistan and over 55% of the trade of the country. It is also the arterial link for trade and supplies between the two wings of Pakistan. A study of the various aspects of the port working after the Revolution of 1958 as compared to the period 1947 to 1959 would, therefore, serve as a gauge for the developing economy of the West Pakistan.

## FINANCE

The average income per year for the period 1947-59 was Rs. 26.7 million and the expenditure Rs. 20.9 million. As against this the averages of income and expenditure per year for the period from 1959-65 were Rs. 58.7 million and Rs. 51.4 million respectively. It shows that in the post-Revolution period there has been an increase of Rs. 32 million in the average income and of Rs. 30.5 million in expenditure. A comparison of the figures for 1958-59 with those of 1964-65 shows an increase of Rs. 39.8 million in income and Rs. 25.1 million in expenditure.

These increases in the income and expenditure are pointers to the developing resources of the port

and expansion and promotion of the port activities. The income of the port depends mainly upon the charges for the services rendered, i.e. wharfage, storage, crannage, port dues, pilotage, etc. The comparison of the averages p.a. under heads of these accounts for the pre-Revolution and post-Revolution periods shows the expansion of these services in the post-Revolution period.

Similarly the distribution of expenditure put in juxtaposition for the two periods indicates the development of the port facilities in the later period.

The most significant part of the financial picture of the port is the increasing deployment of resources towards the replacement, reconstruction and development aspects of the port in general. The period coincides with the Second Plan period in which a total expenditure of about Rs. 140 million was deployed towards the development of the port. The most important project of the period has been the completion of the Reconstruction of the East Wharves costing over Rs. 150 million. Out of this amount, a sum of Rs. 37.8 million was incurred upto 1957-58, whereas an expenditure of Rs. 99.6 million was incurred in the Post-Revolution period. Not only that a greater amount of financial resources were deployed for the development during the period 1959-65 but also Funds have been built up for the subsequent developments in the Third Plan Period. A contribution of over Rs. 100 million was made to the Funds in the later period.

## TRAFFIC

The average of the cargo handled in the port from the period 1947 to 1959 was about 3.5 million tons per annum which comprised of imports about 2.551 million tons and exports about 0.99 tons. As against this the average of the cargo hand-

ed in the port for the period 1959 to 1965 was 5.5 million tons per annum, the average of imports being 1.26 million tons. This shows an increase of about 2 million tons of cargo per year in the Post-Revolution period. The increase in imports being 1.73 million tons and the increase in exports being about 0.27 million tons per annum. While the comparison of the figures for the two years 1959-60 and 1964-65 shows an increase of 2.85 million tons in imports and of 0.47 tons in exports, i.e. an overall increase of about 73% on the cargo handled in the port in the former year.

The cargo handling records of the port were surpassed successively twice in the post-Revolution period when in 1962-63 the port handled over 5.5 million tons of cargo which was an all time high record upto that period but in 1964-65, the Port of Karachi handled over 7.8 million tons of cargo which represents an increase of 33% over the tonnage dealt with in the preceding year. During 1963-64, the cargo handled was about 5.8 million tons. According to the forecasts of the traffic which were compiled some time ago the estimated tonnage expected to be handled in the Port of Karachi by the end of the Third Five Year Plan in 1970 was about 7 millions tons. This figure was subsequently revised in collaboration with the World Bank to about 8 million tons. It will thus be seen that the volume of traffic in the port has increased far more rapidly than estimated and the port is now handling traffic which was expected in 1970.

A study in the comparison of averages in Pre-Revolution and Post-Revolution periods for the Key commodities imported and exported shows the shift upon Industrialization and the growing economic strength of the country.

In the Post-Revolution period the import of coal has decreased by 75% and the import of oil has more than doubled.

The import of iron and steel also doubled in the later period while the import of textiles diminished to 7% of the pre-Revolution period.

The export of rice nearly doubled in the later period, the export of

seeds, etc. has increased by over 12%, the export of Ores registered an increase of 75% and the export of cotton was decreased by 25% as more and more cotton was used at home with only a very little textiles imported from abroad. The export of Hides and Skins also register decreased by about 30% as the raw material was utilized by the home industry.

The tremendous decrease in the imports of coal which resulted from the shift to the use of oil and also indigeneous gas is a well come change because it removes our dependence upon such a commodity whose procurement was fraught with problems. The increase in the imports of iron and steel, which doubled in the later period, is a clear sign of industrialization and mechanization. The tremendous decrease in the imports of textile and the decrease in the export on the indicator of the very fast development of textile industry in our country. The increases in the exports of rice, seeds, ores shows the enhanced produce and development of exports.

#### **PASSENGER**

The passenger traffic has also been steadily growing in the later period. In 1958-59 the number of passengers was 1.29 lakhs while in 1964-65 it was 1.48, an increase of about 20,000 passengers.

In the later period more and more facilities for passenger traffic have been provided. A section of large transit shed at berth No. 19 has been set aside for the examination of passenger baggage by the Customs. Adjoining this shed there is a modern lounge for visitors and passengers. Both the examination hall and the lounge are equipped with ceiling fans, proper seating arrangements, telephones, etc. for the convenience of the passengers and the visitors. A refreshment centre is located in one corner of lounge where light refreshments are available. Money changing facilities are provided and the Tourist Bureau has a counter in the lounge to advise passengers on the tourist attractions in the country.

#### **PORT CONSTRUCTION**

While the first phase of the Post-

Independance Development in port construction work started in 1955 with the launching of the Reconstruction of the East Wharves, the Project was completed in the Post-Revolution period in the year 1962-63 and about three times more amount was spent on this scheme in the later period that the former period. This scheme comprised of the Reconstruction of existing berths and providing facilities adjoining to these berths. However, the scheme did not increase the berthing capacity of the port. The rate of traffic in the port has been increasing at a very fast rate and, it may be seen from the traffic analysis, it has reached a point far beyond the estimates.

In the post-Revolution period, therefore, various schemes were prepared for providing additional berths and Reconstructing the remaining old berths. The following are the major schemes prepared during 1959-65.

1. Reconstruction Bulk Oil Pier
2. Widening and deepening of the main Navigable Channel
3. Reconstruction of three additional berths at West Wharf
4. Reconstruction of the remaining East Wharf berths No. 1 to 4
5. Rehabilitation of the Manora Break water
6. Master Plan for the development of the port.

These six development schemes have been estimated to cost of Rs. 172.6 million with a foreign exchange component of Rs. 80.4 million.

In addition to the above stated major schemes, work has been going on in this period on the following schemes:—

1. Construction of sea wall and reclamation of land for providing tank storage facilities for Pakistan Refinery Ltd.
2. Reconstruction of the whole of Keamari township.
3. Housing scheme at Manora.
4. Establishment of K.P.T. Hos-

pital at Manora.

In the Third Five Year Plan outlined in 1964, further schemes, as follows, have been prepared to be taken up in 1965-70 at a total cost of about Rs. 136.70 million:—

1. Lighterage Berths at Juna Bunder.
2. Remodelling of the M.I. Yard.
3. Reclamation & Development of the New West Wharves—1st Phase.
4. Construction of additional Oil Berths—1st phase.
5. Reconstruction of Keamari Village (2nd phase)

#### **EQUIPMENTS & CRAFTS.**

In the later period a large number of floating crafts and other equipment has been acquired by the port. Eight tugs, 2 Bucket and one grap hopper dredgers and over 50 other crafts including barges, launches, pilot boats, ferry boats etc. have been added to the fleet. Modern quay cranes have been installed on the wharves and a new 125 tons self proper floating crane has also been purchased. 4 electric Sub-stations 11-0.5 Kv. with a capacity of 6,000 KVA with a stand-by dual-fuel generating plant with an installed capacity of 1,000 KW to cater for the essential services have been installed. Efficient and effective lighting with fluorescent, mercury vapour and incandescent light fittings of modern design has been provided for the illumination of Road overbridges, plinths, sheds and service buildings. Eighteen Nos. 100 ft. high flood light tower with a maximum estimation of 8-1500 watts lamps on each Tower to light up the railway yard and plinths, have been installed.

#### **ADMINISTRATIVE REFORMS**

The administrative reforms which swept through the administrative machinery of the Government in the Post-Revolution period benefitted the Port's administrative set up as well. Long due amendments were made in the K.P.T. Act to remove bottleneck and to provide for the working of a modern port. The composition of the Board of the

Trustees of the port of Karachi was also modified so, that while the representation of the various organizations connected with the port working was fully preserved it provided for a more closely knit with greater objectivity.

A system of official meetings was started to provide for close liaison between the working of the various depts. Of the port and also to provide opportunity for frequent consultations with top management.

An Officer-on-Special duty (Inspection Wing) has been appointed to inspect the working of the Port and advise the Chairman in case of any lapses or wastages.

An Intelligence Cell has been set up in the Watch & Ward Dept. to check pilferage and theft of cargo.

The Mechanical Engineering Dept. has been re-organized and the number of officers increased in that department for the efficient maintainance and installation of mechanical engineering facilities in the port. Similarly the Accounts Dept. has been organized and various extra posts created to improve the accounting system.

More and more K.P.T. officers were sent for training in the country and abroad to equip themselves with better management techniques and up-to-date knowledge.

A separate office of the Engineer-in-Chief has been set up to implement the various development project of the port construction.

The stores dept. of the port was re-organized to maintain an efficient and prompt supply of stores.

Additional posts of Traffic Officer was created to help the flow of ever increasing traffic through the port.

A Publicity & Public Relations Branch has been created to maintain closer liaison with the port and its clients, to disseminate useful information on the port, and provide facilities to the press.

## **EMPLOYEES WELFARE**

Along with the development of the port in general during the post Revolution period, an ever increasing attention was paid to provide

more and more benefits to the staff and to augment measures for their welfare. Immediately after the Revolution the grades of the pay of the employees were revised to make them commensurate with the prevailing higher cost of living and in addition a conveyance allowance was granted for the employees living at some distance from their place of duty. The Earness Allowance has been merged in the pay which would go a long way to step up the Provident Fund of the employees and other benefits such as gratuity, compensation, etc. A very important step has been the grant of Recreation and Travelling Aid to the employees equal to their one month salary and in case of a trip to East Pakistan a grant of two months salary. Recently the benefits as regards washing allowance and interim tribunal award have been extended for the benefit of a larger number of employee.

In the matter of housing the administration has embarked upon an ambitious programme of construction of new quarters, and a large sum has been spent on the construction of the quarters from 1959-65 and there is handsome provision at a similar scale during the third five year plan.

A new fullfledged hospital has been constructed for the employees during the period and an additional Maternity Home has also been set up. The pre-Revolution period medical facilities were expanded, e.g. grant in aid to T.B. patients, payments for specacles, artificial limbs and other grants for the medical treatments have been introduced.

One more school for the children was started in the period. In addition a large number of free ships, scholarships and stipends are now being granted to the children of the employees.

An additional canteen has also been constructed during the period for the port workers. Also co-operative stores have been opened for the employees to provide them consumer goods at cheaper cost.

The sports in K.P.T. received a great impetus during the period.

K.P.T. teams figured very prominently in local and National Tournaments.

The foregoing analysis of the development in the port after the Revolution of 1958 amply shows that there has been far greater progress and development in the Post-Revolution period than before. As a matter of fact this period saw not only the culmination and consolidation of the development projects taken up earlier but it also proved the projecting point at which the future development of the port in the next 25 years has been visualized, planned and provisions made for the same.

## **The World Trade Center—**

**(Continued From Page 11)**

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