PORTS and HARBORS

APR. — JUN., 1966 Vol. 11, No. 2

Port of Toledo
Grain Complex—Three Elevators

THE INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS

Introducing The Crests of Ports

(Each Issue One Port)

Port of Seattle

The major ocean terminals on Seattle's deep-water harbor are on or near man-made Harbor Island (left center). West Waterway is on the left of the Island, East Waterway on the right. Elliott Bay is in the center. Puget Sound route to the Pacific is in the distance (upper right).

PORTS and HARBORS

Apr.-Jun., 1966 Vol. 11, No. 2

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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Secretary General: **Gaku Matsumoto**

The Central Secretariat:

Mori Bldg., 7th, 2, Tomoe-cho, Shiba, Minato-ku, Tokyo, Japan

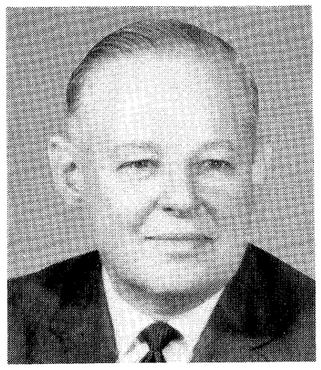
WHO's WHO in IAPH—2

—Know them by face—

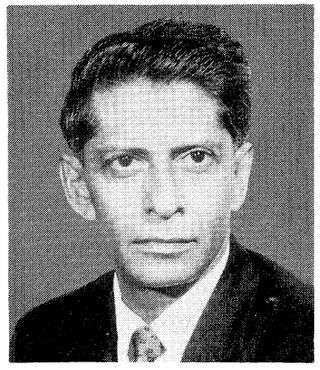
Committee on
International Port Development

(in alphabetical order)

Mr. Austin J. Tobin
Committee Chairman
Executive Director
Port of New York Authority
U.S.A.



Mr. W. J. Amoss
Committee Member
Director
Port of New Orleans, La.
U. S. A.



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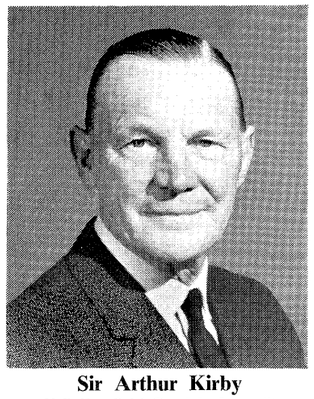
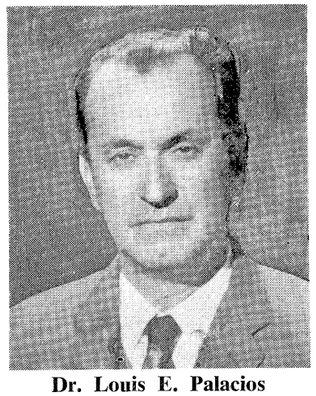
Committee Member
Chairman
Port (Cargo) Corporation
Colombo, Ceylon

Dr. Chujiro Haraguchi
Committee Member
Mayor
City of Kobe
Japan

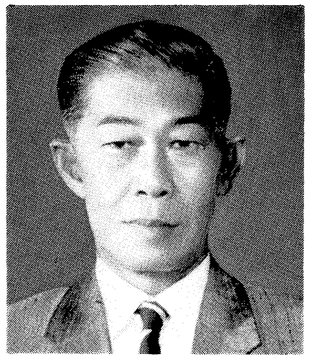


Sir Arthur Kirby
K.B.E., C.M.G., M. Inst. T.
Committee Member
Chairman
British Transport Docks Board

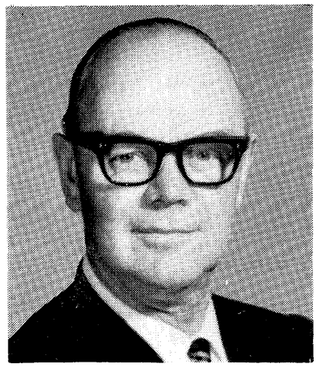


Dr. Louis E. Palacios
Committee Member
General Manager
Empresa Puertos De Colombia
Bogota, Colombia

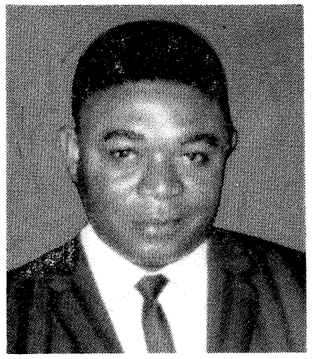
Mr. F. Posthuma
Committee Member
Managing Director
Port of Rotterdam
The Netherlands



Mr. S. Samakoses
Deputy Director, Administration
Port Authority of Thailand
Bangkok, Thailand



Mr. V. G. Swanson
Committee Member
Chairman
Melbourne Harbor Trust Commissioners
Melbourne, Australia

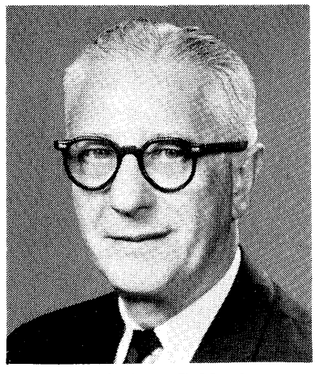


Mr. Edward J. Wesley
Committee Member
Assistant Port Director
Monrovia Port Management Co.
Port of Monrovia, Liberia

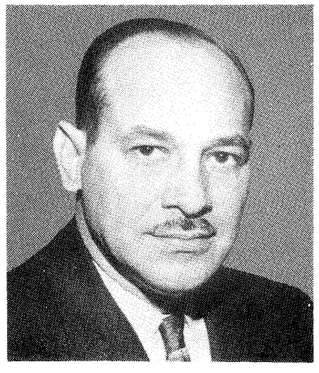
Joint Legal Counselors

(in alphabetical order)

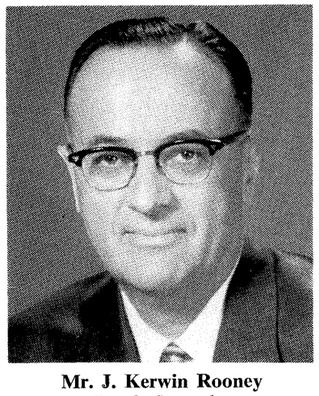
Mr. Arthur W. Nordstrom
Chairman of Joint Legal Counselors
Assistant City Attorney
City of Los Angeles, Calif.
U. S. A.



Mr. Sydney Goldstein
Legal Counselor
Chief Counsel
Port of New York Authority
New York, N.Y., U.S.A.



Mr. Cyrus C. Guidry
Legal Counselor
Chief Counsel
Port of New Orleans, La.
U. S. A.



Mr. J. Kerwin Rooney
Legal Counselor
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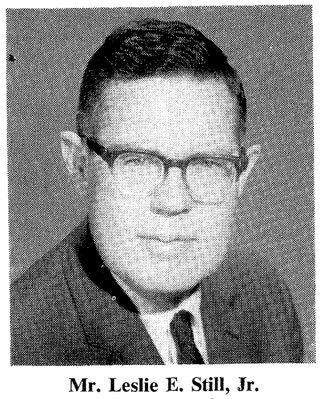
Port of Oakland, Calif.
U. S. A.



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Legal Counselor
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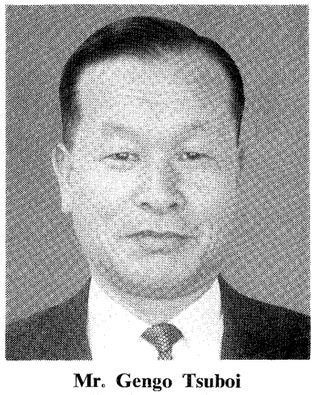
U. S. A.



Mr. Gengo Tsuboi
Legal Counselor
Director
Japan Shipowners Association
Tokyo, Japan

I.A.P.H.

5TH CONFERENCE TOKYO, JAPAN

Place:
Tokyo, Japan

Date:
May 8 (Monday) – 13 (Saturday), 1967.

Patron:
His Imperial Highness Prince Nobuhito Takamatsu, Honorary member of I.A.P.H.

Conference Host:
The Minister of Transport, Japanese Government.

Conference Chairman:
Dr. Chujiro Haraguchi, Mayor of Kobe, First Vice-President of I.A.P.H.

Conference Secretariat:
Directed by the Director of Bureau for Ports and Harbours, Ministry of Transport, Japan.

Address:
Room 451-2, Nippon Bldg., 8, 2-chome, Ohtemachi, Chiyoda-ku, Tokyo, Japan.

Cable Address:
"IAPHMEET TOKYO".

Conference Program:
Under confirmation.

Registration Fee:
¥36,000 (or U.S.$100) to cover a delegate and his wife. Others accompanying a delegate (e.g. daughters) U.S.$50 each. These fees do not include the post-Conference tour.

Conference Languages:
English and Japanese, in accordance with the By-Laws, but translation facilities into French, German and Spanish shall also be provided.

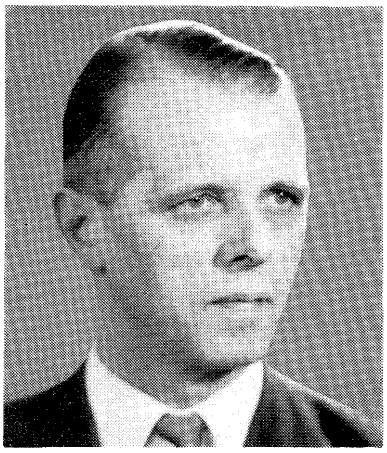
Post-Conference Tour:
Immediately after the Conference, through May 13 (Saturday) – 16 (Tuesday) for a fee of U.S.$135 per person, including tours in Kyoto and Kobe areas. The participants shall be invivted to the ceremonies of the 100th Anniversary of the opening of Kobe Port by Dr. C. Haraguchi, Mayor of Kobe.

I.A.P.H. Membership

(As of May 31, 1966)

Honorary Members: No. 1, His Highness Prince Nobuhito Takamatsu, Japan (1959), No. 2, Admiral C. G. Manuel Zermeno Araico, Secretary of the Navy, Mexico (1959), No. 3, The Honorable T. Hale Boggs, Member of House of Representatives, U.S.A. (1963), No. 4, Mr. John P. Davis, Immediate Past President, U.S.A. (1965).

Countries	Regular	Supporting Corporate	Supporting Individual	Total
Argentina	1	–	1	2
Australia	4	8	–	12
Brazil	1	–	–	1
Belgium	1	1	1	3
Burma	1	–	–	1
Canada	4	–	1	5
Ceylon	1	–	–	1
China	4	3	1	8
Colombia	1	–	–	1
Denmark	2	1	–	3
Eire	1	–	–	1
Ecuador	1	–	–	1
France	1	–	2	3
Germany	–	–	1	1
Guam	1	–	–	1
Hong Kong	1	–	–	1
India	1	–	–	1
Iran	1	–	–	1
Israel	1	–	–	1
Italy	1	–	1	2
Jamaica	1	–	–	1
Japan	31	31	9	71
Kenya	–	1	–	1
Liberia	1	–	–	1
Malaysia	3	–	–	3
Malta	–	–	1	1
Mexico	–	–	2	2
Netherlands	2	–	–	2
New Zealand	–	3	–	3
Nigeria	1	–	–	1
Northern Ireland	–	1	–	1
Norway	2	–	–	2
Pakistan	2	1	–	3
Peru	1	–	–	1
Philippines	–	1	–	1
Portugal	1	–	–	1
Singapore	1	–	–	1
South Arabia	1	–	–	1
Spain	1	–	–	1
Sweden	2	1	2	5
Thailand	1	–	–	1
Turkey	–	1	1	2
United Kingdom	9	–	1	10
Uruguay	–	–	1	1
U.S.A.	17	12	6	35
Venezuela	1	1	–	2
Vietnam	1	–	–	1
Yugoslavia	–	1	–	1
'otal (48)	**108**	**67**	**31**	**206**



Mr. A. Hendrup

FORUM ON PORT PROBLEMS

Some Remarks Upon The Rules of Depreciation For New Harbour Constructions

By Aa. Hendrup

General Manager

Port of Copenhagen Authority
Denmark

In "Ports and Harbors", December 1963, Mr. Albert Lyle King wrote a very interesting article, "A Method of Computing Costs of Capital Investment", in which he emphasizes how important it is for a management of a port before starting on a new project not only as a matter of course to make a rough calculation of the construction cost but also to try to make an estimate of the future annual cost of such a project. First then it is possible to see, whether the project will pay its way, and to estimate the future outcome.

It seems worth while to stress the importance of such preliminary financial basis for new projects naturally must be whether they can pay their way. It also seems right to me when Mr. King emphasizes that just the same calculations ought to be made even if the cost of the project in mind is to be defrayed from the port's surplus, as it can hardly be correct economically to keep on investing large sums of money in constructions, which cannot be expected to yield sufficient revenues. First when it has been calculated whether the project will pay its way or not, a sufficient foundation has been made for estimating whether it—irrespective of not being a profitable venture—for other reasons will be right at all to start on the project in question.

Perhaps it will be appropriate in this connection to point out that a port just as any other business concern financially must be considered as a whole, where it cannot at any time be demanded that every new project within the fixed frame can pay its way. As a joke I may perhaps mention that hardly anyone has yet found that a breakwater has paid its way. Of more practical importance can be mentioned the building of a presentation quay for the officially received vessels, such as for instance naval units, which are berthed free of harbour dues, or the purchase of a floating crane for very heavy lifts, which is a necessary part of the port's service, but which not always can be expected to pay its way.

Apart from the just mentioned I theoretically quite agree with the contents of Mr. King's article; only I should like to add a few remarks as regards the figures in the proposed cost formula.

I know that the article was written 2½ years ago, but it will most certainly surprise a European or anyway a Danish harbour administrator to see that it is only necessary to reckon with an interest rate of 3¾ % per year, whereas today in Denmark you will have to reckon with 8—10% per year. This really gives a very considerable difference when making up the cost formula. Unfortunately we have not either got the chance—as some American ports seem to have—of obtaining the authorities' approval of making the revenues of the interest for the lender free of tax, which naturally has a great influence on the size of the nominal rate of interest as well as the effective rate of interest for the borrower.

In the cost formula set up as an example the time of depreciation has been fixed to 30 years for the project dealt with. The decision of the years of depreciation has just as the rate of interest great influence on the question, whether it pays to start on the project at all, just as many other points of view have to be taken into consideration. Based on the practical experience many older ports have as a rule been inclined to estimate the time of depreciation to be equal to the technical life of the construction. In many cases I suppose this will be correct,—but hardly always. A modern strong wharf will probably with sufficient maintenance have a technical life of 50—100 years, and from such a technical calculation the depreciation alone can be fixed to a similar term of years. From a more practical estimate it is perhaps possible that the time of depreciation today ought to be shorter,—compare also Mr. King's choice of a 30 year life. The motive for this can be expressed as follows:

There is hardly any side of our life where the development has increased as quickly as inside the transport service in its widest sense. Still faster, still better and more

(Continued on Page 15)

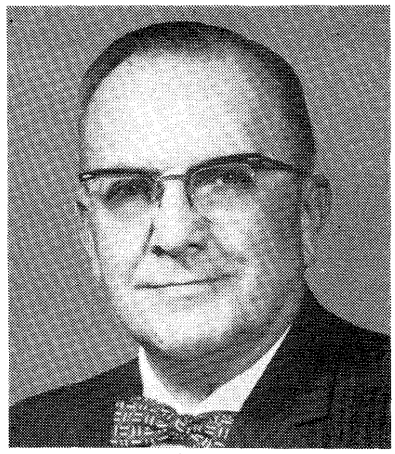
Port of Toledo Hub of Shortcuts

By Louis C. Purdey

Executive Director

Toledo-Lucas County Port Authority

Toledo, Ohio, U.S.A.



Mr. Louis C. Purdey

Toledo, Ohio's busy port site is fast becoming known as the St. Lawrence Seaway's "gateway" to the great American Midwest.

The Port of Toledo has gained world-wide prominence with its ideal location at the heart of the United States. It is near the center of America's population and at the middle of its manufacturing area.

Another plus factor for the Port of Toledo is its close proximity to the vast Midwest grain belt. Among other advantages are excellent transportation facilities, including 11 railroads, and truck connections with uncongested access to major north, south, east and west expressways five minutes away from the waterfront.

This, coupled with a remarkable rate of expansion and improvement projects, is making Toledo a popular port for world shippers. From 1955 to 1965, cargo volume through the port has increased 10 million tons.

The Toledo port has broken into an established transportation pattern —shippers are increasingly aware of savings by importing or exporting through Toledo. Savings of 18 to 30% in the cost of moving general cargo can be shown when compared with similar east coast commodity movements into, or from, the Midwest.

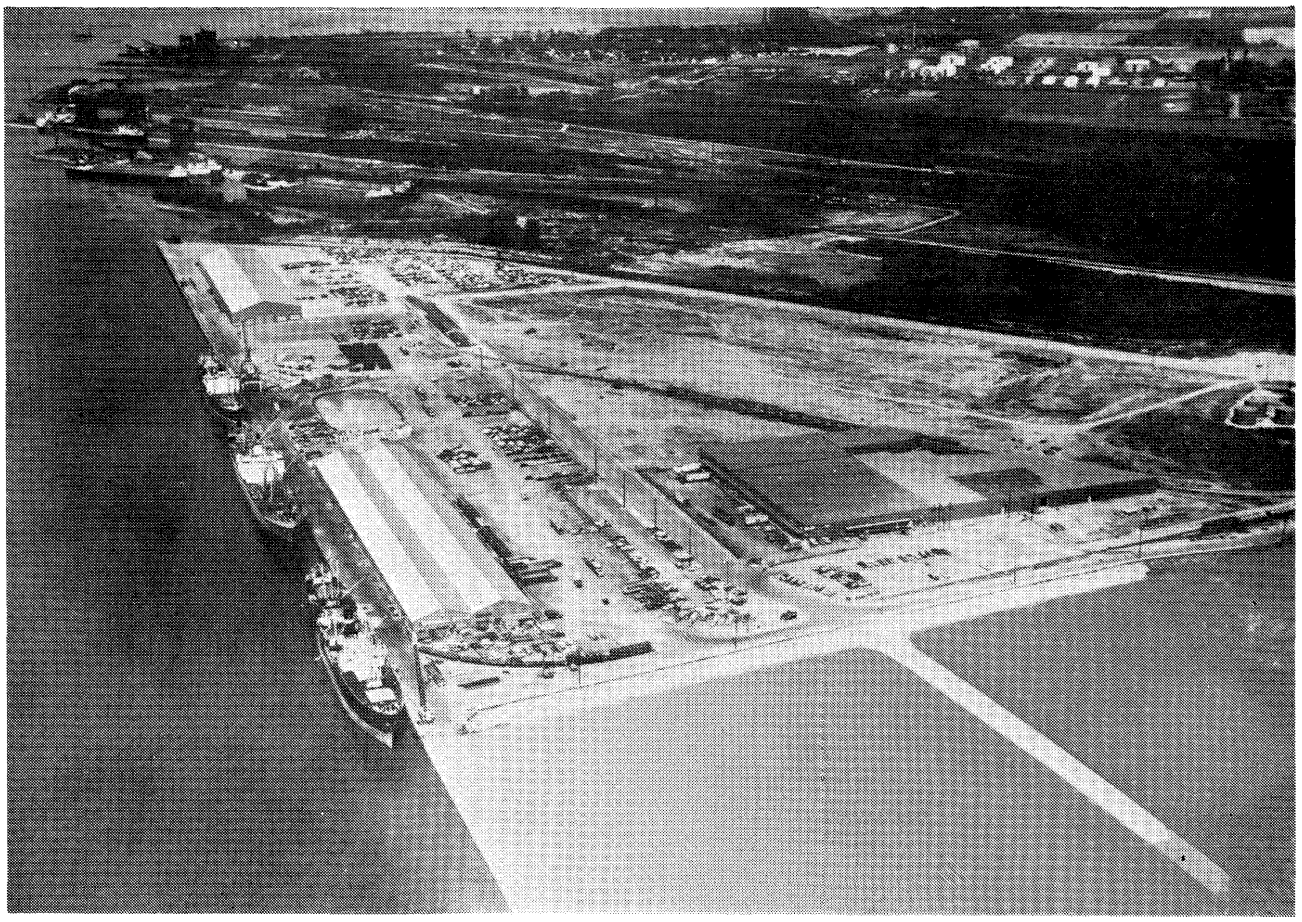
To attract world trade, the Toledo-Lucas County Port Authority has spent more than $10 million in new construction.

Now, the agency's installation has 4,100 feet of straight line wharf, eight berths, 108 acres, and a fast, heavy-lift gantry crane. Additional lift facilities will be in place next season, and also in the immediate future, heavy fork lift equipment will be added for the handling of containers.

Private industry has also expanded by more than $20 million since the opening of the Seaway.

For the third time since opening

A Dutch ship receives grain at Mid-States Terminals, Inc., which since this photograph was taken has doubled elevator capacity to three million bushels.



The Toledo-Lucas County Port Authority is developing this modern cargo facility at the entrance to the harbor of the Port of Toledo. The marginal wharf will offer 4,100 feet upon completion in 1966 of an expansion program providing space for eight ocean ship berths. Tenants include two stevedoring firms, whose terminals can be seen immediately adjacent to the wharf; the Great Lakes' only Foreign Trade Zone (free port), with a 145,000-square-foot warehouse (right center), and a bulk liquid storage and shipping terminal, whose tanks at far right are connected to the wharf by pipeline. A heavy-lift gantry crane on this facility is available for use to all shippers.

for business in August of 1961, Ohio Foreign Trade Zone, Inc., will expand its warehouse at Port Authority Facility No. 1.

The Port Authority has leased an additional 2.66 acres on which OFTZ will construct an addition of 92,500 square feet. Upon completion, the OFTZ installation will have a total of 235,000 square feet.

Toledo Foreign Trade Zone Operators, Inc., a subsidiary firm, conducts "free port" functions within the warehouse. The Toledo zone remains the only such facility on the Great Lakes.

Other enlargement and improvement projects initiated or completed in the past year include:

Port Authority Facility No. 1—most of the work included in the port agency's most recent expansion program has been completed. Included are a trainsit shed, containing 50,000 square feet, and two berths leased to Toledo Marine Terminals, Inc.; extension of rails for "Big Lucas," the giant gantry crane; construction of a maintenance building-observation platform; building of two new ship berths; and additional road paving, improved outside storage areas, and related projects.

Toledo Overseas Terminals Co., a site tenant, leased one of the new berths and has added a third addition to its warehouse to bring total space to nearly 110,000 square feet. The stevedore now operates on 21 acres of the site.

Mid-States Terminals, Inc.—one of three grain shipping firms on the harbor, is in the process of completing a $2 million expansion which will double the elevator's storage capacity and speed-up its ship loading rate. It can now store up to 3,500,000 bushels of grain.

This expansion increases even more the port's grain complex which also includes The Andersons and Cargill, Inc. Both The Andersons and Cargill have 2,000,000 bushel capacities.

In the past decade, continuous expansion and improvement programing has helped net the Port of Toledo an ever-increasing annual amount of tonnage in almost every area.

And since the St. Lawrence Seaway opened in 1959, total cargo has risen considerably—45,003,708 tons in 1965 as compared to 33,801,912 in 1959.

Among the categories showing substantial gains in the 1959 and 1965 comparison are: total overseas cargo 1,758,440 compared with

(Continued on Page 20)

Port of Oslo,
The Liner Port of Norway

By Capt. T. Jacobsen

General Manager
Port of Oslo

Capt. Thomas T. Jacobsen

Oslo stands at the import and export gateway to the greatest industrial region in Norway. Oslo's name is carried by her Merchant Fleet to every port in the world. Her port, however, is also responsible for a large part of the city's fame and prosperity. Evolved originally to satisfy the requirements of a smaller local population, Oslo today serves a greater part of Norway.

Regarding overseas transportation, vessels sail from Oslo to all parts of the world. When it is realized that most of Norway's large shipping companies have their head offices in Oslo, it stands to reason that Oslo is the obvious port when shipping merchandise to or from Norway.

The Port of Oslo is not only by far the biggest port of Norway, it ranks today as one of the principal ports of Scandinavia, both with regard to volume of trade and to variety of shipping. Every effort is made to reduce the time spent in port and to offer expert services in handling all kinds of goods. In order to enable quick dispatch an extremely efficient transportation system is in existence, and it can safely be said that nowhere you'll find a better transportation system.

We have always endeavoured to cut shipper's cost by continuously adding labour-saving and cost-cutting facilities, and now we have as safe, efficient and economical methods of handling goods as can be found anywhere.

Port of Oslo: Hyortnes Tourist Quay, Hyortnes Ferry Quay, and Filipstad Utstikker.

Perfection Our Goal

Since the end of World War II, we have spent millions of kroner for new docks, warehouses, facilities and other kinds of durable equipment. These developments have greatly enlarged the productive power of our port. Perfectness is our goal, and we are constantly working on the task of maintaining and advancing the rate of progress and the desire of forging new tools to meet new demands is always with us. Our desire is to deserve —and to keep your goodwill.

Oslo has unrivalled distribution facilities in all directions, by sea, be rail, by truck and by air. Oslo is the central point of more railway lines than any other city in the North. Fifty overseas shipping lines are running regular services between Oslo and all ports of the world.

The Port of Oslo is an independent self-supporting institution in the management of which the Municipality, the State and the large trade organisations are represented. The competition with other great Scandinavian and Northern Euro-

pean ports has resulted in the lowest possible dues.

Freer Than a Free Port

Special provisions are made for transit and through traffic: Goods transhipped to foreign countries within a period of 90 days are free of tonnage and lighthouse dues . . . transit goods are stored free of charge in modern warehouses for a period of 30 days.

Stevedoring is carried out by and ordered through Oslo Stevedore Office. Stevedore superintendents and watchmen are engaged by the employers themselves.

Working hours: 0700-1630, breaks 0900-0930, 1230-1330. Saturdays: 0700-1300, break 0900-0930. Overtime on request.

Bunkering facilities en route without deviation. Pilotage compulsory for all ships coming from or leaving for foreign ports. Harbour pilotage not compulsory but is practically always used when berthing big ships.

Repairs—all kinds of hull and machinery repairs are carried out. Five floating docks and one graving dock, capacity up to 33,000 t.d.w.

General Cargo Port

In 1964 goods turnover increased to 4.7 million tons. As regards the commodity groups which move through the port in foreign traffic, the shift from being a port for the handling of bulk cargoes to a general cargo port is marked. Oslo now ranks as one of the leading general cargo ports in Scandinavia.

The year 1965 set a new record for goods traffic. The volume of cargo—foreign and coastwise—rose by 1.5 per cent to 4,745,000 tons. The year 1965 is characterized by a considerable increase, 11.1 per cent, in foreign imports of general goods to 1,238,000 while foreign exports declined by 3.2 per cent to 632,000 tons, as shown in Table 3. In 1965, bulk cargoes represented only 8 per cent of foreign trade.

Table 4 shows the value figures in round numbers of foreign imports and exports via the Harbour District. The export figures do not include transhipments exported via the Port of Oslo registered as exported from other Customs Districts.

Tyuvholmsutstikkeren.

Table 1. Facilities

Land area, total		780,000 sq. m
Quay areas for general cargoes	200,000 sq. m	
„ bulk „	200,000 „	
Upland areas	300,000 „	
Warehouses and sheds, floor areas		240,000 „
Of which privately owned	150,000 „	

The privately owned warehouses are usually built for storage, those belonging to the Authority are mostly transit sheds.

Length of quays, total		12,600 m
Of which for seagoing ships	9,000 m	
„ coastal services	1,500 „	
„ other purposes	2,100 „	
Cranes, total number		135
Of which 99 electr. quay cranes, cap. up to	10 tons	
8 mobile cranes, „	5 „	
4 overhead cranes, „	1½ „	
1 floating crane, „	100 „	

are owned by the Port Authority.

Granaries, cold storages, petrol tank installations, fruit ripening plants etc. are at hand in adequate dimensions. In addition to the mentioned mechanical facilities, an ample number of trucks, forklifts, conveyors, containers and pallets etc. are owned by shipowners, forwarders and agents.

Oslo is situated at the head of the 54 mile long, easily navigable Oslofjord (Lat. 59°55′ N. Long. 10° 43′ E.).

The harbour consists of a vast basin, well sheltered and enclosed. Anchorage is available all over the harbour at depths from 20 to 50 yds. The harbour is never ice-bound. Tides are negligible, average level at neap tides at quay is 6 in.

Norway's Foreign Trade

As regards the total imports and exports of Norway, Sweden ranks with Germany and Great Britain as our main suppliers and as the biggest markets for our products. The actual figures in 1964 and 1965 are shown in Table 5.

Despite its small population—3.7 millions—Norway has a large foreign trade, and no one would dispute that Oslo takes the lion's share of the country's foreign trade. This is proved by the fact that Oslo firms handle around one-half of Norway's imports and some 20% of its exports. Wholesalers in Oslo deal with 55% of total wholesale trade, and duties collected at Oslo represents 67 per cent.

In 1965 a total of 4,540 seagoing vessels sailing under 23 flags called at the port, and their total tonnage was 6 mill. tons. These figures topped those of the previous year by 312 enterings and 161,000 n.r.t.

The majority of the overseas cargo-liners acknowledge Oslo as the only basis port within the Oslofjord region, and the dominance of Oslo is proved by the fact that more than 60 per cent of all enterings in this region called only at Oslo and 30 per cent called at Oslo and other ports in this region.

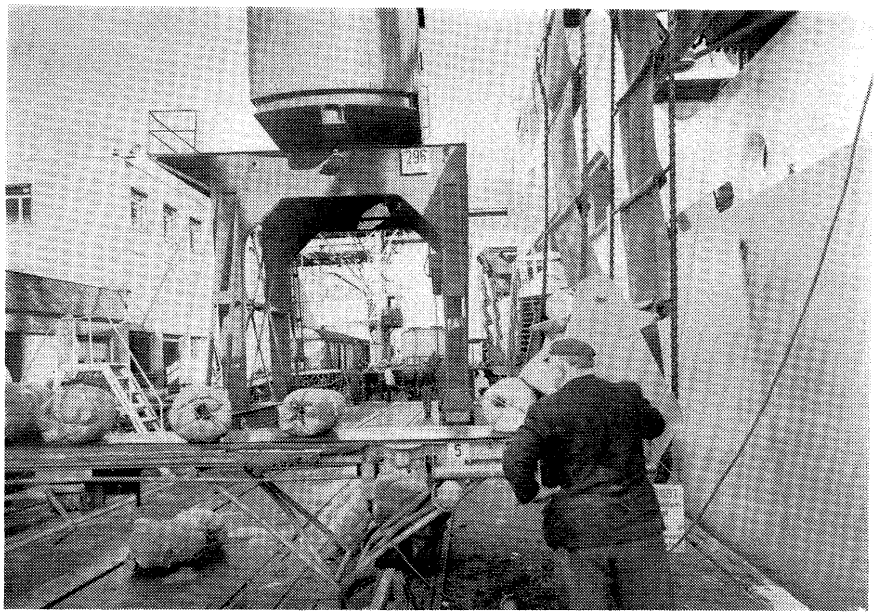
Table 6 gives the ship statistics as classified by the flag. In the last years there has been a sharp increase in the number of Danish ships calling at Oslo, the number in 1961 being 746 against 1145 in 1965. The upward trend regarding entrances is chiefly confined to an expanding car/passengers traffic on Denmark and Germany. This trend in ship enterings from abroad is indicated in Table 7.

Projects

Chief projects finished or under way comprise:

Filipstad quay—further conversion of the old coal quay to a quay for general goods.

A Ferry quay on Utstikker II was finished in May. This is a special quay for car/passengers ferries and is built so that cars can be driven directly on and off from the quay. Reconstruction and development is going on the Söreng quay where the quay construtcion will



Discharging of bananas.

Table 2. PRINCIPAL QUAYS FOR FOREIGN TRAFFIC

(From west to east)

	Depth m	Length m	Employment
Hjortneskai	10	145	Tourist quay
Hjortnes	6	120	,, and ferry quay
Brannskjærutst	6–10	190	Fruit imports, ripening plant
Filipstadutst	7–11	490	General cargo
Filipstadkaia	7– 9	594	,, paper exports
Tjuvholmsutst	6–11	692	,,
Vippetangkaia	6–11	276	,, and passengers
Utstikker III	6–10	202	Grain imports
,, II	7– 8	465	Ferry quay, general cargo
,, I	6– 9	378	General cargo
Revierkaia	6	124	,,
Langkaia	6– 7	211	,,
Palekaia	6	87	Ferry quay (north off Langkaia)
Krankaia	4– 5	132	General cargo
Sorengkaia (under reconstruction)			General cargo
Gronlikaia	6– 9	635	General cargo, paper exports
N. Sjursoykai	8–11	356	Bulk cargoes
S. Sjursoykai	7– 9	493	Oil harbour
Bekkelagskaiene ...	8– 9	300	General cargo
S. Bekkelagskai (under contruction)			,,

Table 3. Trade Trend (in 1,000 tons)

	Yearly Average			
	1950-54	1955-59	1960-64	1965
Foreign imports :				
General cargoes	795	823	1016	1238
Coal	370	214	98	37
Cereals	122	131	151	132
Foreign exports :				
General cargoes	377	429	540	632
Indexes, by groups 1950–54 average=100:				
Foreign imports :				
General cargoes	100	103	122	156
Coal	100	58	27	10
Cereals	100	107	125	108
Foreign exports	100	114	143	168

cost about 47 million kroner.

At Bispebrua a system of traffic throughways and fly-overs is under construction. One of the larger projects is that at Söndre Bekkelagskai, where plans have been made for a quay 300 m long and 67 m wide. Two sheds will be built here with storage rooms for 3,500 imported cars. At Nordre Bekkelakskai a quay of 230 m length will be built and space will be found for those firms which have to be moved from the Söreng kai.

As an effect of the mentioned tendencies towards typical general cargo port, the policy of the Harbour Board has been to concentrate on providing the maximum number of ship berths and facilities of all kinds to cater specially for overseas shipping in general cargo trades.

Port Administration

The functions of the Norwegian Port Authorities were originally the concern of the State.

In 1735 a Royal Decree prescribed that in every port with a Customs House House, a Captain of the Port was to be appointed, and further a Port Commission. This Commission was to consist of the Magistrate, the Superintendent of Pilots and one of the citizens of the town. Thereby was instituted the first Harbour Board and the foundation laid for the peculiar Norwegian form of administration for the ports, a mixed state and municipal administration. This form is retained by later legislation.

According to the latest Port Act, that of 1933, the superintendence of the administration of seaways and harbours is assigned to the Ministry of Fisheries and is exercised by the Director of Harbours, a Government official, whose main task is to see that the provisions of the Port Act are respected.

The said act is based on the principle that the Port Administration in towns shall be self-supporting, and that the money necessary for new constructions and maintenance shall be provided by dues and charges on goods and ships etc.

In accordance with the Port Act, the control of the port is assigned to the Harbour Board, which consists of ten members: The Mayor, the Chief Constable, one member

Table 4. Trade Values (in million kroner)

Brussel Tariff Nomenclature:	Imports 1964	Imports 1965	Exports 1964	Exports 1965
Principal commodities				
Fruit	147	168	—	—
Coffee	136	131	—	—
Beverages, Tobacco	87	81	17	17
Chemicals	228	268	78	94
Rubber, Plastic Materials	168	193	75	82
Fur Skins	25	26	80	96
Wood, Articles thereof	45	45	44	35
Paper, Papermaking Materials	53	61	317	301
Textiles, Articles thereof	349	359	55	58
Base Metals, — „ —	480	503	105	128
Machinery, Equipment	566	640	233	282
Vehicles	532	548	10	10
Total via the Oslo Harbour Distr.	3,410	3,651	1,231	1,343
„ „ the Oslo Customs District	6,310	7,337	1,485	1,757 X
Hereof : Ships	884	1,450	254	414
„ : Oil Prod.	195	174		

Table 5. Norway's Trade by Country (in million kroner)

	Imports 1964	Imports 1965	Exports 1964	Exports 1965
Sweden	2,704	3,313	1,309	1,620
Germany, (West)	2,234	2,497	1,352	1,411
Great Britain	1,876	1,903	1,849	1,834
Hereof Ships				
Sweden	906	1,299	29	49
Germany	310	424	18	69
Great Britain	77	2	108	25

Table 6. Ship Traffic by Flag

Flag	Number of enterings	Average size of ships nrt.	Percentages of N.R.T.	Goods handled
Norwegian	2,047	1,503	51.0	58.3
Danish	1,145	1,503	28.4	7.2
Swedish	339	1,147	6.4	9.6
British	107	1,607	2.8	3.2
American (U.S.)	43	5,512	3.9	0.8
Germany (West)	505	374	3.1	11.1
Dutch	200	315	1.0	4.8
U.S.S.R.	34	647	0.4	0.5
Polish	64	531	0.6	1.3

Table 7. Ship Entries (from abroad)

	Yearly Average 1950-54	1955-59	1960-64	1965
Number	2,912	3,256	3,981	4,540
N.R.T. 1,000	3,263	3,907	5,323	6,053
Index :				
Number	100	118	137	156
N.R.T.	100	120	163	186

elected by the Presidency of the City Council from among its members, four-yearly period, four members elected by the City Council (4 years) one member elected by the Chamber of Commerce, one member nominated by the Ministry of Fisheries as representative of the industries of the city, and one representative for the subordinated harbour officials. The last mentioned member has no vote.

According to the law, the Harbour Board is charged with the care of the harbour, the duty to see that nothing is done that is calculated to damage the port or hinder the traffic. Further to decide what work is to be carried out for the improvement of the port or to facilitate the traffic. It must make regulations for the maintenance of order in the port and guard the economy and see that its means are employed to the greatest advantage.

Financially the administration of the port is an independent institution which administers the money paid into the harbour fund, which latter is independent of the town finances. The budget of the port is moved by the Harbour Board and approved by the City Council. The latter can not, however, vote money for other purposes than those moved by the Harbour Board, nor can they assign larger amounts than the Harbour Board has proposed, before the matter eventually has been submitted to it. This rule does not apply to expenses of administration, such as wages, salaries etc., nor to amounts allocated in the budget to payments in reduction of debts.

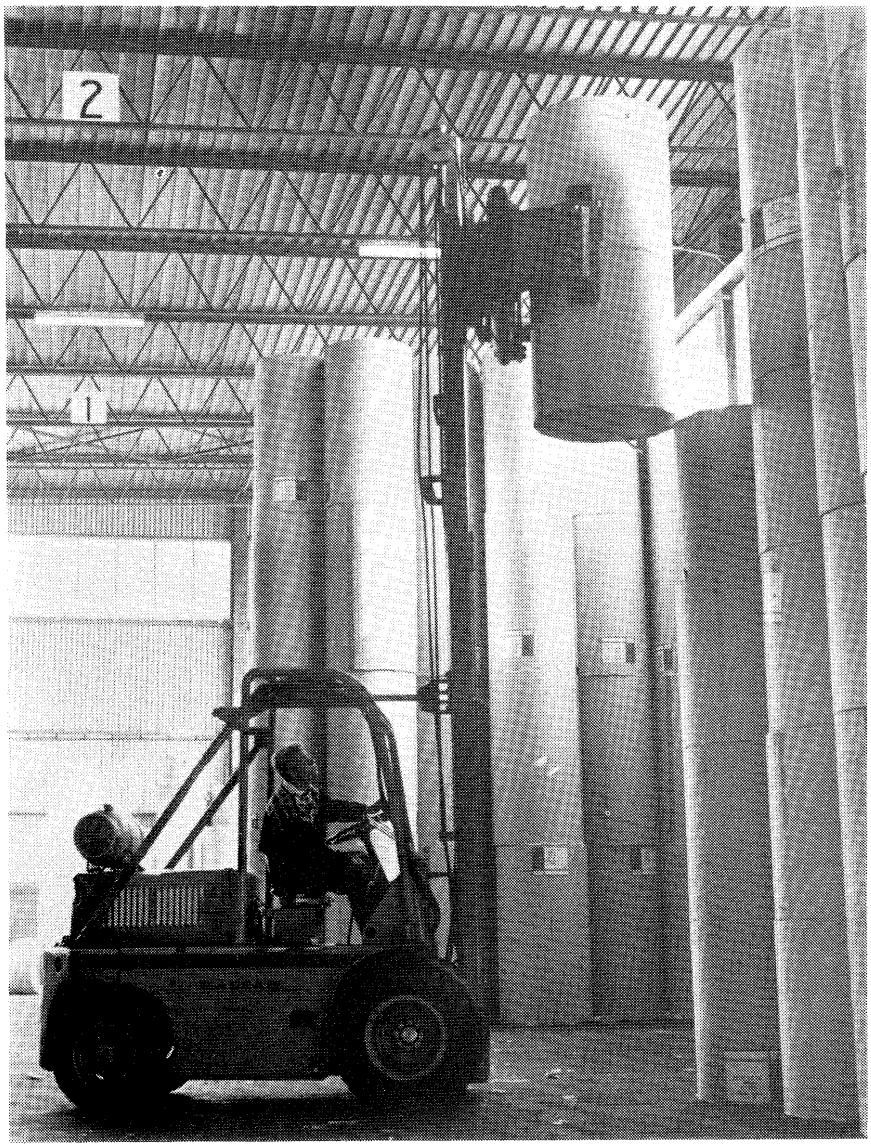
The Authority of the City Council is further restricted, when it concerns the fixing of the Harbour Manager's salary, which falls within the scope of the authority of the Ministry of Fisheries, and further by the general regulation that the funds of the Harbour Treasury can be applied only to work for the improvement of the port and to facilitate traffic. Any disputes that may arise between the City Council and the Harbour Board from these provisions are to be decided by the Ministry of Fisheries.

The Harbour Board elect their own chairman. The members of the board are divided into three committees, the Finance Committee, the Harbour and the Traffic Committee, and Technical Works Committee. These committees, each in their domain, deal with the matters that are to be submitted to the Harbour Board and make their recommendations to the latter.

The daily administration is in charge of the Manager. He is appointed by the Ministry of Fisheries on the recommendation of the Harbour Board, the City Council and the Director of Harbours. The scope of the manager's work is prescribed by existing laws and instructions. He elucidates and reports upon the merits of the matters arising, and submits them to the Harbour Board, takes part on the meetings of the Board, without the right to vote, and may cause his opinion on a matter to be recorded in the minutes when he dissents from the decision of the Board.

A system of a special commission attached to the management has been established. The commission consists of five representatives elected by the administration and five elected by the employees. This commission is cosultative in questions appertaining to management and routine connected with the working conditions of the employees as well as to questions of security and welfare. Also matters

(Continued on Page 20)



Shed for export of paper—Filipstad quay.

Port of Colombo Then and Now

Publicity & Public Relations Bureau

Port (Cargo) Corporation Colombo, Ceylon
(Through the Courtesy of the Embassy of Ceylon in Japan)

Time was when the Port of Colombo had more than its due share of troubles which normally beset the waterfront industry in all parts of the world. This position no longer exists due to measures taken by the Authorities particularly during the past year. Most effective among these measures have been a Bonus Incentive scheme which enabled labour to increase their earnings with greater output; additional Welfare measures such as extra Canteens and rest rooms; Loan schemes; schemes for the relief of indebtedness and additional employer contributions to the Provident Fund. These and other such measures have led to contentment among port workers, and happy industrial relations now prevail in the Port. Discipline in the Port has never been better.

Measures for better supervision and for increased efficiency in operations have also contributed to the improved port conditions that are now being maintained. An important development in working conditions in the Port is an O & M assignment that was undertaken through a firm of Consultants for the purpose of introducing a Cost Control system throughout the Port and for improving the efficiency in cargo handling operations. This exercise is already showing results.

The annexed Table of Statistics gives the latest figures of cargo handled in the Port of Colombo, and covers the period January to December, 1965, in respect of vessels bringing cargo over 500 tons. It will be noted that the average output per working day has increased from 254 tons in January to 319 in December and the average output per ship day has increased from 214 tons in January with only 9½ hours rain detentions to 293 in December with as many as 70 hours detentions on account of rain during the latter month! The average turn round time which was 10 days in January has been reduced to 7.4 days in December.

The total number of vessels handled in the Port during 1965 was 1,102 and the total amount of dry cargo, export and import, handled was 2,875,791 tons. This is the highest annual tonnage ever formally recorded in the Port.

Port Pilferage:

The incidence of pilferage in the Port of Colombo has at no time been any more than in any other port of equal size and circumstance. Nevertheless as it is very necessary that every port keeps a keen eye on this aspect of port work, as otherwise it is likely to assume unsatisfactory proportions, the Port of Colombo has at all times given continuous attention to block loopholes in port security, particularly wtih regard to security of cargo. While the safety of cargo in the holds of vessels in the Port is primarily the responsibility of the vessel, the Port (Cargo) Corporation has made arrangements for the Port Police to be on board and on call whenever the need arises. When cargo of a pilferable nature is discharged in the Roads into lighters, the latter are securely locked. In addition to the usual Customs Water Patrols, Special Port Police Patrols have been organised and Navy Patrols placed at the entrance to the Port see to it that unauthorised craft do not enter the harbour area.

On shore, the transit sheds and warehouses are given continuous attention to ensure that they are kept structurally secure. Within them, the Port employs its own watchmen's service and in addition, Port Police Patrols are placed within and outside transit sheds when necessary. Throughout the Port, at all times, in addition to Customs Preventive Force activity, Port Police Patrols are continuously on the move particularly between 4 a.m. and 7:30 a.m. which is the period between the two shifts when no works is normally done. These patrols are given information daily of transit sheds, warehouses and lighters in which there is cargo of a pilferable nature so that they may keep a special eye on such places. A particular aspect of documentation security employed in Colombo is the scheme for the registration of Wharf Clerks who are permitted to transact any business with regard to the removal of cargo only on the production of a photo identity card issued by the Port. These are the precautions taken in Colombo together with the other normal security measures such as port entry permits, vehicular passes, gate checks and documentation security as are generally adopted in other ports.

These measures are continuously reviewed and effectively implemented by the general control exercised by the Anti-Pilferage Committee on which the Port Police, the Customs, the Port Commission and the Port (Cargo) Corporation are represented.

Streamlining of export procedures:

For the smooth flow of export cargo it is necessary that there should be a high degree of co-ordination between the shippers, the vessel and the cargo handling body. With a view to achieving this co-ordination in the highest degree possible, the port authorities, under the auspices of the Ceylon Chamber of Commerce, sponsored a meeting of all the parties concerned, and an export information

TURN ROUND TIME OF MIXED CARGO VESSELS 1965

(over 500 Tons)

Month	No. of Vessels	Total Tonnage	Waiting Time * a	Working Time * d	Stay * c	Output /day * d	Output /day/ship * e	Rain Detentions in Hrs.
January	25	53,281	1.6	8.4	10	254	215	9½
February	27	62,719	2,6	13.4	16	174	140	33
March	32	91,696	9.8	13.9	23.9	207	121	18¼
April	28	69,494	5.5	13	18.5	191	134	54¼
May	29	65,395	3.5	12.8	16.1	176	139	107½
June	32	80,250	2.1	8.9	11	280	228	21¾
July	25	99,586	1.8	13.8	15.6	289	255	23¼
August	38	97,171	.9	9.3	10.2	275	252	59¼
September	22	66,607	.5	7.9	8.4	385	362	59
October	29	73,250	.5	9.1	9.6	277	263	93½
November	38	81,767	.6	7.7	8.2	340	315	57½
December	37	81,767	.5	6.9	7.4	319	298	70

* a. Average awaiting period for Berth per Ship (Arri. to Comm.).
* b. Average working period per Ship (Comm. to Comp.).
* c. Average Period of stay per ship (Arri. to Comp.).
* d. Average Output per day during the working period (Comm. to Comp.).
* e. Average Output per ship day (Arri. to Comp.).

bureau was set up within the Port for the purpose of co-ordinating the calling down of cargo. This has particularly helped in the quick loading and turn round of vessels. Arrangements have also been made with Customs to extend the franchise period for export cargoes called down by the Corporation. Extra space for warehousing export cargo too has been provided. A decentralised scheme for both Customs and Port (Cargo) Corporation export documentation has also been introduced. The Guide Pier and other piers in the vicinity at which alongside loading takes place to a great extent, are fairly distant from the Baghdad area where all export cargo documentation is at present handled and from which transport bringing export cargo has to fan out to their destinations at these further piers. This inconvenience will end during the course of March, 1966 when the Export Sub Office is opened at Guide Pier enabling not only decentralisation of documentation but also permitting transport carrying export cargo to go to the Guide Pier area direct instead of routing through the export centre at Baghdad.

Documentation:

For the past several years, most countries in the world have paid a great deal of attention to the matter of simplifying shipping documentation and after much deliberation have designed new forms cutting down not only the number of documents but also the quantum of paper work involved. The Port of Colombo has been following these developments very closely and has obtained latest information from the research centres in the United States such as the Marine Exchange Inc. of San Francisco, California, and from the United Kingdom and Europe, and has appointed a Committee consisting of representatives of Shipping Agents, Shippers and the Port Authorites to study these recommendations and the forms already adopted in these countries and to devise a format that will suit the trade and Government requirements in Colombo.

A similar committee appointed for the purpose of simplifying import documentation has already concluded its work and a new "Ocean Carriers' Delivery Order" format incorporating the requirements of all the documents presently used by Ships' Agents and the Port (Cargo) Corporation and some of the requirements of Customs, has been divised, tying up all the processes of cargo delivery from ship to importers' transport in this one form. This form is simpler than the ones presently in use. It has also less cages to fill in. It is smaller than the internationally accepted standard size of 11.60″ × 8.27″ for forms of this nature. It also ensures a greater degree of security through documentation than the multiplicity and unwieldy size of the forms that exist now provide.

These improvements in export and import documentation will cut down delays and make matters easy for shippers as well as importers.

Transit shed space:

Collaboration with consignees and importers has been effected with a view to expediting removal of cargo from transit sheds. Intensive action is continuously taken to further relieve transit sheds by removing all cargo seven days after landing to Repository Warehouses. A concurrent reorganisation of Customs procedures has also resulted in the expeditious clearance of cargo from the wharf. Customs reorganisation has immensely cut down Long Room procedures and provided better service to importers. Further changes in Customs procedures that would lead to more expeditious clearance are contemplated.

The scheme for the extension of transit sheds at one of Colmbo's

largest alongside berthing quays—Queen Elizabeth Quay—is going on apace. Work on transit shed No. 4 has been completed, transforming this shed into a large, modern, pillarless shed 500′ × 160′. Work on No. 3 shed is fast nearing completion. Sufficient transit shed space is a sine qua non for efficient port operations and Colombo is looking ahead in this regard.

Recruitment of new labour:

Another noteworthy step decided on by the Authorities and which will soon be implemented is a fresh intake of 1,000 additional hands to the labour grade category. This can be considered one of the most forceful contributions towards achieving quicker turn round as more gangs will now be available for both ship, shore and transit shed work.

More mechanisation:

The Port has also placed orders

(Continued on Page 20)

Some Remarks—

(Continued From Page 5)

adequate, or larger means of communication have developed. This applies to automobiles, aircrafts and ships, where the competitors' purchase of new means of transport forces others to follow suit, and thus the average duration of life for such purchases becomes shorter and shorter. Quite naturally such a development is bound to have a certain influence on the projects of the ports, as the ports are an important part of the transport service.

The increased speed of the vessels compels the ports to try to cut down on the time of loading and unloading, as otherwise the gain in the shorter duration of the voyages is lost. The increase of the ships' size and draught also forces the ports to consider or carry through an increase of water-depths and the consequent necessary re-building of the quays. And finally the latest concepts in transport—container-ships and roll-on/roll-off traffic—require quite a new planning of the ports' lay-out and extensions.

It is quite evident that this changed basis for lay-out and extensions will have some influence on the chosen length of depreciation, and from the almost explosive development during the last years as regards these new forms of transport, it can be seen how quickly an unforeseen change of the port's constructional work will be necessary.

Whilst until a few years ago the long intact quay was considered as being ideal,—which it of course still is for a large part of the traffic,—it is now necessary to divide up the quays into smaller sections with ferry-heads or similar constructions for the roll-on/roll-off traffic. Whereas previously rather small areas for discharge behind the quays were sufficient for the goods handling, the new modern forms of transport demand very large open space behind the quays for disposal of containers and for parking areas for trailers.

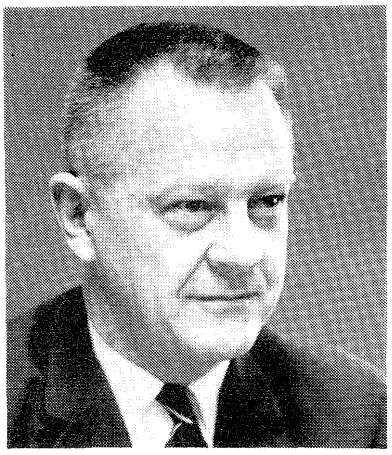
Especially in older harbours this development can cause large problems. Quite often these harbours were originally built with a central position in direct contact with the existing city, just as the turnover of the rather limited quantity of goods in those times did not largely interfere with the life of the city. However, the large extensions of the cities have meant an encircling of the existing harbours, which so to speak are thrown into the water by the city. The areas behind the quays become too small for the increased turnover, and the aforementioned new forms of traffic, which are dependent on the presence of large space, demand a successive and perhaps a quicker removal of the harbour to sites outside the city area. The new large areas can, however, in many cases cause large problems as well as large financial costs. The last couple of years have shown many examples of this development. One of the best examples is probably the building of the new Europort at Rotterdam on an open area far away from the city. An other example is the present extensions at Tilbury—the port area outside London. Further can be mentioned the project of a new large-scale port at the estuary of the Elbe outside Hamburg. In Stockholm they are considering moving the port,—which at present is quite enclosed by the city,—to a larger area outside the city. And many other examples could be mentioned.

There is also another field, where great changes have taken place, namely as regards the turnover of fuel. The almost explosive increase of the turnover of liquid fuel has for a large number of ports meant new extensions of the existing oil-ports and a continuous increase of water-depths to meet the demand of the larger and larger tankers. During the last 10-12 years the water-depth in the oil-port of Copenhagen has been increased from 9.1 m to 12.5 m, and the tank capacity has been raised from 300,000 to 1 million cubic meters. At the same time the continuous decrease in turnover of solid fuel—in Copenhagen a decrease of 60% during the last decennium—has made the installations for this kind of turnover quite superfluous, thus making the years of depreciation considerably shorter.

And who dares today with the rapid technical development of our time in mind reject the idea of the Atom Age being able to supersede the present considerable turnover of liquid fuel,—and thus again cause a shorter time of depreciation of the last years' large investments in the special oil-ports?

As it will be seen I have used Mr. King's small paper about the necessity of calculating the exact annual cost before starting on a new projects,—a paper, in which I as noted quite agree,—to make some supplementary remarks, which I should like to sum up as follows:

From experience we know the technical life of the various projects. But experience has also taught us that the new forms of transport may require a modified improvement of the existing harharbour constructions long before the end of their technical life. The last years' tremendous development of the transport services has at least given us this experience. The question will therefore be whether these experiences shall not be taken into consideration when deciding on the length of depreciation.



Mr. J. Eldon Opheim, General Manager, Port of Seattle. Appointed July 1, 1964. Previously Asst. General Manager and Controller of Port of Seattle. Twenty years experience on Seattle waterfront, including executive positions with the Pacific Maritime Association.

Port of Seattle Modern as Tomorrow

By J. Eldon Opheim

General Manager

Port of Seattle
Wash., U.S.A.

Two major factors—the trend toward deep-draft super-tankers and the development of containerization—have guided the Port of Seattle in its 1960-70 multimillion dollar rebuilding program. At a little beyond the halfway point in the costly project, which could run as high as 50 to 60 million dollars, Seattle is already reaping a rich harvest, in the form of all-time record import and export tonnages, domestic cargoes, ship traffic, waterfront payrolls and Port income.

The program is based on Seattle's natural advantages, such as its protected, deep-water harbor, ice-free the year around, and its geographic location on the east end of the Great Circle route across the Pacific, making Seattle two days closer to the Orient than other major Pacific Coast ports. These factors—of prime importance to the shipper and the shipowner—are being augmented with the construction of modern terminals equipped with the newest handling facilities, all designed toward faster ship turnaround time and the expeditious movement of transit cargo to and from the port.

Containerization, of such intense interest to the shipping world in the past two or three years, is far from new to Seattle. A Seattle-based steamship firm, the Alaska Steamship Company, has served its Alaskan customers for a decade or more with containers, ranging in size from the small "cribs" and "guards" to fullsize container boxes of all types—standard, ventilated, heated or refrigerated, as required. The smaller containers were designed for handling general cargo in the holds of conventional ships and proved particularly effective and useful in serving the smaller customers in the many Alaskan towns and villages served by the line. Although some of the large conventional containers are carried as deck cargo by the Alaska Steamship Company's vessels, two of the line's ships have been converted to full-containerships serving — via the Alaska Railroad—the major cities of the Alaskan railbelt. These two containerships operatte from Seattle's newest container terminal, Pier 46, completed in 1964 and equipped with three 50-ton gantry cranes.

Matson, a major carrier in the Pacific Coast-Hawaiian Islands trade and a pioneer in the development of containerization, shares Seattle's Pier 46 container terminal with Alaska Steam. The three-berth terminal, with approximately ten acres of open yard storage and a concrete transit shed, is completely fireproof. Piling and aprons are of pre-stressed concrete and the yard area is blacktopped earth fill construction. Multiple electrical outlets are spaced throughout the yard area to service heated or refrigerated vans. Other features of the facility include brilliant lighting, rail trackage and automobile parking areas for dockworkers. Pier 46 occupies the sites of the former Piers 44 and 46, built in the early years of the century.

In 1962 the Port of Seattle began a five-phase terminal development program at the site of the former Ames Shipyards. The first phase included the construction of an all-concrete berth, 650 feet long, backed with approximately five acres of surfaced yard area and equipped with a 50-ton gantry crane. Before the completion of the first phase, in May of 1964, the area had been leased from the Port by Sea-Land Service, Inc., which saw the facility as ideal for its forthcoming containership service to Alaska. Within less than two months following the disastrous Alaska earthquake of 1964, Sea-Land had two containerships in operation between its new Seattle quarters, now known as Terminal 5, and Anchorage, Alaska.

The second phase of Terminal 5 development saw Sea-Land's yard area doubled, a second berth constructed and the installation of a $750,000 high-speed container crane. Although the Sea-Land vessels have retained their ship-mounted cranes, the new PACECO-built crane has a considerably greater loading rate and has cut in-port time so drastically that two containerships are able to schedule a Seattle-to-Alaska sailing every five and one-half days.

Phase Three of the Terminal 5 development, although not tied directly to containerization, is as

Busy Pier 46, Seattle container terminal leased by Matson and Alaska Steam, was recently host to three Matson vessels at the same time (the third is visible beyond the transit shed). Three 50-ton gantry cranes have access to all three berths.

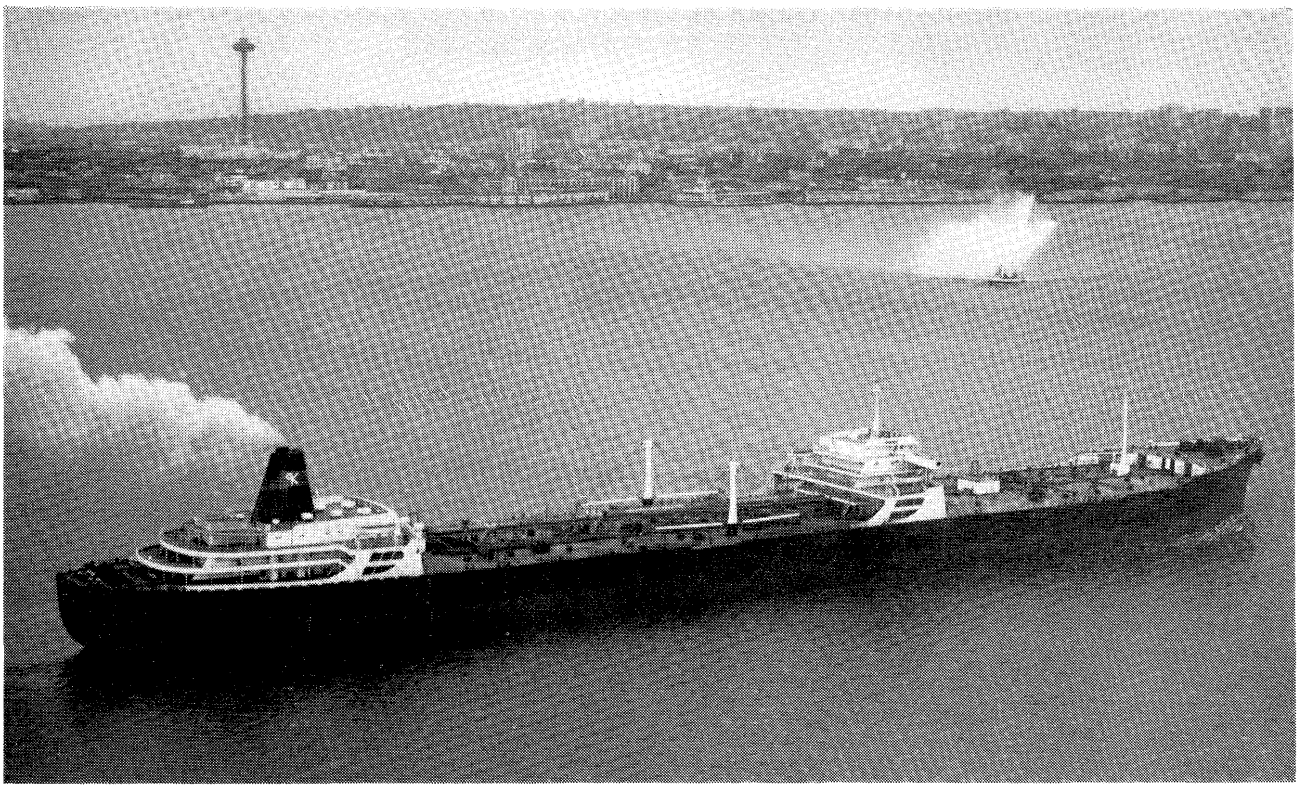
modern as tomorrow. A third berth and a transit shed have been constructed for the use of the world's largest salmon warehousing firm, Salmon Terminals, Inc., a division of Olympic Steamship Co. The new waterside facility is connected by means of an automated, 900-foot-long conveyor system to a new 300,000 square foot warehouse recently erected on reclaimed land behind Terminal 5. The conveyor system carries palletized loads of canned salmon through an underground tunnel, passing beneath yard areas, rail trackage and streets, thence into the new warehouse for storage, labeling, repacking and distribution throughout the world. Some $75,000,000 worth of salmon will be handled at this facility each year, justifying the $3,500,000 investment by the Port of Seattle and Olympic Steamship Co.

Phases Four and Five at Terminal 5 are still in the planning stage. They concern the Port's banana terminal, leased and operated by the United Fruit Company and an adjacent undeveloped area, suitable for development as a fifth berth with adequate land area behind it. In any redevelopment of the banana terminal area particular care must be taken in order not to disrupt the carefully scheduled weekly service of the United Fruit Company's ships. Fifty-two vessels arrive at this terminal annually, one every Sunday evening, bringing Central American bananas for the Pacific Northwest states of Washington, Oregon, Idaho, Montana and Alaska and the Canadian provinces of British Columbia and Alberta.

Although the final development of Terminal 5 may be as much as four years away, the area is already doing yeoman service for the Port of Seattle. With the aforementioned new berths and facilities, plus its nearly 25 acres of open storage, Terminal 5 is not only handling Seattle's major cargoes of bananas and salmon but is—and will continue to be—one of the Pacific Coast's outstanding container centers.

What may become Seattle's major container terminal, however, is the Port's latest—and as yet undeveloped—waterfront property acquisition, Pier 18. This World War 2 shipyard, with nearly 23 acres of land area, is slated for development into a five-berth containership facility. A major reconstruction program, including the razing of obsolete buildings and dock aprons and the installation of the first of the new berths, will get underway this summer. Ultimate plans for this unit, located on the northeast corner of Harbor Island, call for the installation of the newest and most efficient container-handling equipment available.

With today's emphasis on ever-larger vessels, particularly tankers, Seattle's tremendous harbor depths become assets which few other ports in the world can match. With no dredging whatsoever, 40-to 50-foot depths are maintained at most of the piers and terminals. When the MANHATTAN, largest U.S. tanker afloat, came to Seattle's Hanford Street grain terminal last year it was the first time she had been able to take a full load of 100,000 long tons of grain at dockside. The ship's loaded draft of nearly 51 feet, an insurmountable obstacle for dockside loading at virtually every other West Coast grain port, was handled easily in



Largest commercial vessel ever to call in Seattle, the 940-foot MANHATTAN was greeted by a Seattle fireboat. When she left Seattle the ship was carrying 100,000 tons of wheat.

Seattle's East Waterway. Depths of 500 feet or greater are found in Elliott Bay, around which Seattle's ocean terminals are located.

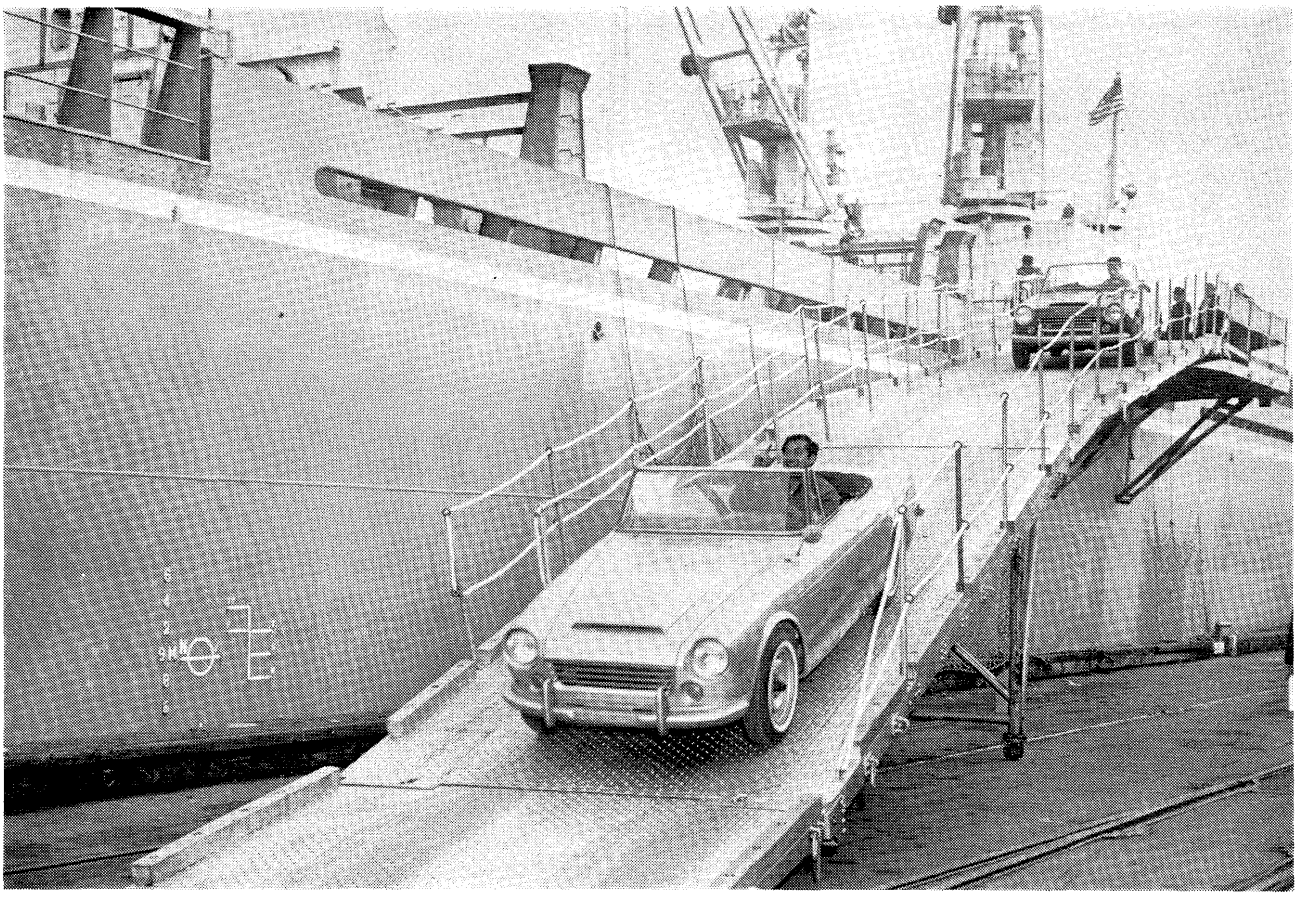
As Seattle's grain exports climb (850,000 tons last year) and the world need for American wheat becomes greater, the foresightedness of Seattle's Port Commission in planning the construction of a super grain terminal becomes apparent. In April of this year the Commission approved designs for a 5,000,000 bushel export grain facility capable of handling the deepest draft vessels now built or planned. Dockside minimum depths of 65 feet or more are expected to lure the world's largest tankers. On shore, nearly three miles of rail trackage will accommodate 100 or more incoming rail cars daily, including the new 100-ton capacity cars now being built. New grain rail shipping rates, applicable from the grain-producing areas of the Pacific Northwest to Seattle, are expected to attract a vastly increased grain export through this port.

Other features of the $15,000,000 grain terminal will include dual truck unloading facilities, a ship loading rate in excess of 3,000 tons per hour and even a view area where the public can get a close-up look at the ships as they are loaded. The City of Seattle is cooperating in providing landscaping in the area and a harbor drive which will pass within a few yards of the ship berth. The new terminal is expected to be in operation in mid-1969.

Despite the apparent emphasis on terminals for the grain and container trades, general cargo continues to be the backbone of Seattle's foreign and domestic commerce, and a sizeable portion of the Port's capital improvements program is being directed toward improved and expanded facilities therefor. An outstanding case in point would be Seattle's Terminal 20, on East Waterway, a five-berth terminal with so many diverse facilities it is the "workhorse" of the Seattle waterfront. Here are five large transit sheds, lining the 60-foot-wide apron, and space for a sixth. Here also are two "backup" warehouses for storage cargo, and room for at least two more when needed. Foreign Trade Zone No 5 occupies a portion of Terminal 20, offering world traders an opportunity to land their cargoes duty-free. Use of the Zone continues to grow as importers find more and more uses for the unique area.

A non-petroleum "tank farm," with a capacity of more than 2,500,000 gallons, is an important feature of Terminal 20. Used primarily for tallow and fish oil, this unit can load or discharge two ships simultaneously by means of recently-doubled dockside facilities. With a growing world demand for Pacific Northwest tallow, the Port is planning additional tanks, heating equipment and transfer facilities at Terminal 20.

As a result of shipper experiments, a number of new commodities are now moving in bulk—commodities that previously were bagged for shipment. Most of the items, such as dried peas, beans, seed products, urea, alfalfa pellets, etc., are shipped in relatively small quantities, generally under 1,000 tons. To accommodate these movements, and to speed ship turnaround time by enabling them to be handled while general cargo is being loaded or discharged, the Port of Seattle is constructing a small lot bulk facility at Berth 5 on Terminal 20. The system will cost $630,000



Seattle longshoremen, members of ILWU Local 19, appear to enjoy discharging the OPPAMA MARU. The ship's cargo of automobiles is driven onto the dock, using a special ramp carried by the vessel.

and will be in operation this summer. It will have a storage capacity of over 11,000 tons and will be able to handle cargo in either direction between ships, trucks and rail cars and the storage areas.

Although log exports figured prominently in Seattle's waterfront history, few stands of timber remain in the Seattle region and the center of log exporting has moved to the less populated areas of the Washington and Oregon coasts. However, one log berth is still maintained by the Port of Seattle. It is at Terminal 20 and is in use most of the time. With its several acres of adjoining land area, the berth could be made quickly into a container facility, utilizing one or more of the four 40- and 50-ton capacity gantry cranes located on Terminal 20.

The largest single purchase in the history of the Port of Seattle—$4,000,000 for the former Army Port of Embarkation properties—was made in June of 1965. For that substantial amount the Port acquired ownership of Piers 36, 37, 38 and 29, approximately 35 acres of land and a number of buildings. The obsolete Pier 38 was promptly removed and an extensive modernization program started on Pier 39. The entire unit, now designated Terminal 37, is in use as a five-berth general cargo terminal and has been of particular value to the Port in accommodating Seattle's increased trade with the Orient. Terminal 37 is in excellent condition and no major reconstruction needs are foreseen in the near future.

A combination of Matson's conversion to containership operation and an influx of foreign automobiles prompted the Port of Seattle to put Pier 48 into use as an automobile import facility, exclusively. Although some Matson staff retain offices at Pier 48, ship operations—as noted earlier—have moved to the Pier 46 container terminal and other steamship lines using Pier 48 have been reassigned to Terminals 20 and 37. Fifteen makes of foreign automobiles are now being imported through Pier 48 in greater quantities than ever before. Countries of origin include Japan, Germany, France, England, Sweden and Italy and the 1966 volume is expected to approach 20,000 units. Needless to say, Pier 48 was never busier.

While proceeding at full steam on its Elliott Bay and East and West Waterway terminal projects, the Port of Seattle has taken a long-range look at its future needs and has foreseen an eventual need for extensive expansion areas. At the same time, the Port has accepted responsibility for a major role in industrial development in the Seattle area. Answers to both situations may very well lie in the Port's Lower Duwamish Industrial Development District, an ambitious program of marginal land reclamation along a five mile stretch of the Duwamish River. The tax-supported program, which is in the process of accumulating a working fund of approximately $22,000,000, is designed to acquire riverside lands, improve them and put them in use, either for port purposes or for "water-oriented"

industries (those importing raw materials or exporting finished products by ship or barge). Although barely under way, the program has already been responsible for the location of two new industries in the area — with multimillion dollar plants, extensive payrolls and an annual combined barge tonnage of imported raw materials exceeding one million tons. The Districts boundaries begin at the mouth of the Duwamish, where it empties into Elliott Bay, and include hundreds of acres ideally suited for this type of development. Earlier reclamation projects have straightened the channel and deepened it to 35 feet. Engineering studies indicate a greater depth, if needed, would be entirely feasible.

As in the case of many other American port authorities, the Port of Seattle is responsible for airport development. Seattle-Tacoma International Airport was built in the late 1940's and today represents a Port investment of more than $20,000,-000. Federal matching funds have brought the total value of "Sea-Tac" to nearly $30,000,000. To keep pace with the tremendous increases in passenger traffic and air cargo volumes, the airport has been in an almost continual process of expansion since it was built. Reliable forecasts of the needs for the immediate future have started the Port on the greatest expansion program to date, wherein another $30,000,-000 will be spent on a second main runway, quadrupled air cargo facilities, an expanded passenger terminal and highway accesses. Seattle-Tacoma International, now used by seven major airlines, will soon have another international airline and at least two—possibly four—new domestic airlines. Passenger volume, which was 500,000 in 1950, swelled to nearly 2,500,000 last year and is expected to hit 5,000,000 by 1970.

Financing of airport construction, which at one time siphoned Port funds needed equally on the waterfront, is now done by means of revenue bonds and the airport is able to pay its own maintenance and expansion costs from its own income.

By the laws under which it operates, the Port of Seattle is charged not only with the construction and maintenance of harbor and airport facilities but also with the promotion of their use. To accomplish this the Port's "sales" (Trade Development) department maintains a network of field offices, with representatives in Washington, D.C., New York, Chicago, Spokane (in the State of Washington) and Tokyo. Augmenting the year around efforts of these representatives, Port staff members and Commissioners regularly leave Seattle on extensive—and intensive—trade promotion trips to the trade centers of the United States, the Orient and Europe. For more than ten years the Port of Seattle has maintained full-time representation in Tokyo and has regularly exhibited in the Tokyo and Osaka International Trade Fairs. In 1965 and 1966 the Port's trade development efforts have been combined with those of the State of Washington and the Washington State International Trade Fair in promoting trade and friendship with Pacific Rim countries. The participation of top officials (including Washington State's Governor) in these trade missions has undoubtedly been a factor in their acknowledged success.

As great as 1965 was for the Port of Seattle—foreign tonnage up 17 percent, total tonnage up 5.6 percent, operating profit up an astounding 73 percent—all signs point to an even greater 1966. And Seattle is determined that it will be.

Toledo—

(Continued From Page 7)

143,958; general cargo 478,982 compared with 139,314; coal and iron ore 41,346,405 compared with 30,783,453; and grain 1,801,342 compared with 406,527.

Annual tonnage in these areas is expected to continue to climb annually in the ensuing ten years. Louis C. Purdey, Executive Director of the Toledo-Lucas County Port Authority, has predicted that within the next decade the Toledo port will move more than a million tons of general or miscellaneous cargo a year, regardless of competition.

The Toledo port, as with others, does have some pending problems. These include the continuing of the battle to capture hinterland cargo now being shipped to Atlantic Coast ports, the need for improvement in certain freight rates, and for revisions in government practice which prevail in the movement of military cargo.

Oslo—

(Continued From Page 12)

of economical and technical nature should be discussed in this body. It may be said that many provisions in the Norwegian Port Act aim at giving the Port Authorities directly or indirectly control over the main funcitons on its territory, a principle which is said to be essential in the endeavor for effective port administration.

Colombo—

(Continued From Page 15)

for more mechanised equipment. Automated bulk handling of cargo is also proposed. Work on the facilities for handling of wheat in this manner is already in progress. Bulk handling of sulphur will be next embarked upon.

Containerisation:

The Port of Colombo is also not unmindful of the latest trends in the matter of cargo handling and the structure and size of ships of the future. Colombo is looking ahead in making preliminary arrangements with a view to handling cargo in containers and pontoons if and when Cargo Liners operating to and through Colombo commence this method of cargo traffic.

Conclusion:

Finally the long awaited establishment of a unified Port Authority for Colombo is nearing fulfilment. The draft Bill has left the Legal Draftsman and is now in the course of being processed before being presented in Cabinet. The establishment of the Port Authority will give the final co-ordination necessary for the Port of Colombo to forge ahead with its further plans for development and improvement with a view to achieving its ambition of being among the fastest and most up to date of ports in the East.

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