



MARCH 1958 Vol. 3 No. 1



Aerial view of the Port of Bangkok, Thailand.

By courtesy of Maersk Line

THE INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS

PORT OF LOS ANGELES U.S.A.

Cargo Capital of the Pacific Coast



Sea lanes of the seven seas all lead to Port of Los Angeles . . . And for good reason. There are 28 miles of waterfront . . . 154 acres of shed, wharf and ramp areas . . . and according to the U.S. weather bureau, Port of Los Angeles is AMERICA'S BEST WEATHER PORT.

LOS ANGELES BOARD OF HARBOR COMMISSIONERS Lioyd A. Menveg, President • Bernard J. Caughlin, General Manager Room 1300, City Hall, Los Angeles, California, U.S.A.



THE INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS

OBJECTS AND PURPOSES (Per Article 3 of Constitution)

The objects and purposes of this Association shall be:

(a) To associate its members from all countries together in the common cause of mutual international friendship and understanding;

(b) To exchange information relative to port and harbor organization, administration. management, development, operation and promotion;

(c) To encourage, develop and promote waterborne commerce to and from all world ports and harbors; and

(d) To encourage the standardization and simplification of procedure governing imports and exports and the clearance of vessels in international trade:—

thereby promoting the peace in the world and the welfare of mankind.

UNDERTAKINGS

(Per Article 3 of Constitution)

This Association shall carry out the following undertakings in order to accomplish the objects and purposes specified in the foregoing Article:

(a) The holding of conferences of the International Association of Ports and Harbors as provided in the By-Laws;

(b) The publication of the minutes of Conferences, an official Association journal or other publication and other special publications concerning ports and harbors, as may be authorized by this Association;

(c) The establishment of relations with other international organizations, associations and agencies on matters of mutual international interest concerning ports and harbors;

(d) The establishment of a center or centers for the collection, tabulation and distribution of information concerning ports and harbors from throughout the world for the benefit of members of this Association and other interested persons;

(e) The dissemination to ports and harbors, and governmental agencies and private operators thereof, of the accomplishments of this Association as expressed in resolutions, bills, reports of committees, and the published proceedings thereof;

(f) The establishment of committees from among the membership of this Association for reference purposes of members engaging in the organization, administration, development, operation, utilization, management or promotion of ports, harbors and other waterfront facilities;

(g) The assumption of other undertakings necessary to effectuate and realize the objects and purposes of this Association.

PORTS and HARBORS

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 development in the world.

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THE INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS

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From The Central Secretariat

By Gaku Matsumoto Chief of the Central Secretariat

I. A. P. H.

The Central Secretariat is presently in communication with the President and the Vice-Presidents as well as the National Directors of each member country as to the Draft Agenda for the next Triennial Conference of our Association to be held for three days beginning January 20, 1959, in Lima, Peru. In this connection, the Central Secretariat desires that all of our members would kindly forward their opinions and advices on the items on the Draft Agenda, quoted below, to the secretariat office.

Draft Agenda for the Second Triennial Conference, January 20-22, 1959

- 1. Problem of whether or not it is proper to establish a regional secretariat of this Association as a means to promote international trade and to intensify the exchange of port information and materials between the ports and harbors bordering on the Pacific Ocean.
- 2. Reasonable and proper harbor dues, tonnage dues, wharfage, etc.
- 3. Matters to be definitely handled by the three Standing Committees, as provided for in Article VIII, Sec. 36, of the By-Laws of this Association:
 - (1) Committee on Port Administration and Utilization
 - (2) Committee on Commerce and International Relations
 - (3) Committee on Cooperation with Other International Organizations.
- 4. Promotion of the use of containers for the purpose of speeding up cargo handling.

Re Item 1 of Draft Agenda

This is aimed to obtain a statement of views of delegates participating in the Conference as to the advisability of setting up a regional secretariat for the Pacific as a subordinate organ of I.A.P.H. This question has been raised because of the fact that the majority of our present members are from ports and harbors bordering on the Pacific and that they are naturally most interested in the promotion of trade and the exchange of port information and materials as among themselves.



Re Item 2 of Draft Agenda

The subject will be submitted for discussion at the Conference in order to assess the proper rates of various port dues and charges for adequately financing port operation. This question has arisen due to extreme discrepancies in the rates of harbor dues, tonnage dues, wharfages, etc. in different ports of the world.

Re Item 3 of Draft Agenda

This item is put in the Agenda in order to have the advices and opinions of the attending delegates to the coming Conference as to the concrete nature of activities to be performed by the three Standing Committees, as provided for in Sec. 36 of the By-Laws of this Association.

Re Item 4 of the Draft Agenda

With the increasing operation of high speed vessels, there has recently been a tendency for vessels to be tied up in harbors for a longer time than when they are at sea. Item 4 of the Draft Agenda is intended to have a fruitful discussion by the Conference delegates on the subject of promoting the use of containers for speeding up cargo handling in order to shorten the stay of vessels in harbors.

* * *

The Association's settlement of accounts for 1957 and budget for 1958 will be submitted to and subsequently approved by the Permanent Council of the Association held in Tokyo by the end of March. The statement of accounts for 1957 and the budget for 1958 will be forwarded to all members along with this issue. At the same meeting, an exchange of views took place regarding the topics of the Draft Agenda as well as the recent happenings of I.A.P.H.

* * *

Recent visitors at the Central Secretariat were on February 9 Mr. and Mrs. A. E. Gunderson, past Chairman and current member of the Commission of Public Docks, Portland, Oregon, and on February 23 Mr. Guy L. Beckett, former General Adviser to the Port Authority of Thailand in the Port of Bangkok and Member of the International Cargo Handling Coordination Association. Both Mr. Gunderson and Mr. Beckett inspected port facilities in Yokohama, Kobe and Nagoya during their stay in Japan.

On behalf of Mt. T. Tsuruoka, Researcher, Institute of Industrial Science, University of Tokyo, who is visiting Rio de Janeiro, Brazil, the Central Secretariat has requested the authorities concerned with port affairs in North and South American ports to give him facilities for the inspection of port and harbor conditions.

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The Central Secretariat has been in receipt of materials giving useful information on ports and harbors from Mr. A. D. Mackenzie, Chairman, Melbourne Harbor Trust Commissioners, Australia.



Mr. Eloi J. Amar, General Manager of the Port of Long Beach, U.S.A., who is known and respected all over the world, will retire from the position around next July.

America's Elder Port Man Will Shortly Retire

Announcement was recently received of the retirement of Mr. Eloi J. Amar, General Manager of the Port of Long Beach, U.S.A. This elder port man of the United States, who is known all over the world, is a member of the Executive Committee of the American Association of Port Authorities and the American Director of the I.A.P.H., who contributed a great deal towards formation of our Association as one of its founders. The announcement made by the Board of Harbor Commissioners, Long Beach, says:

Eloi J. Amar, General Manager of the Port of Long Beach since February, 1940, told the Board of Harbor Commissioners that he will retire from the position about July 1.

Amar, who will be 67 in April, said his health was a major factor in his decision. Also, he said, he planned to devote more time to his family, personal business and travel extensively.

The Board received and filed his letter on a motion which included recognition of the manager's many years of valuable service to the port.

"I think many people recognize his stature as a port manager," Commissioner John P. Davis declared. "He's known and respected all over the world."

Amar, born in San Pedro, became general manager of Catalina Island when he was 25. He conducted William Wrigley's first tour of the island which later resulted in its purchase by Wrigley.

After serving a five-year term as President of the Los Angeles Board of Harbor Commissioners, Amar took over as port manager of Long Beach, where he guided the local harbor through a development program that lifted it to a position as one of the world's most modern ports.

Thai Directors Change

Pursuant to the recent resignation of General Luang Chati Nakrob, Director of the Port Authority of Thailand, and Colonel Prakob P. Boakarach, Deputy Director for Operation, it has been notified to the Central Secretariat that Mr. Kamol Bahalayodhin and Colonel Prachuab Suntrangkoon, the newly appointed Director and Deputy Director for Operation, have respectively taken over the post of Director and Alternate Director for Thailand of the I.A.P.H.

New L.A. Harbor Commission Secretary Appointed

Robert M. Wilkinson, 36, on January 28 was appointed from a civil service list to the position of secretary to the Los Angeles Board of Harbor Commissioners. Long active in Valley community affairs, he is a member of American Legion Post 308 and the Winnetka and West Valley Associated Chambers of Commerce.

L.A. Harbor to Send Traffic Rep. to Europe

An aggressive program to increase waterborne commerce between Los Angeles Harbor and Europe was foreshadowed on February 4 in the approval by the Board of Harbor Commissioners of a contract to send a traffic promotion representative to Europe next month.

The one-year agreement entered into with William Chernus, 42, maritime reporter for a Los Angeles newspaper for the past 15 years, will become effective immediately and provides that Chernus will conduct a survey of European manufacturers, importers and exporters to determine the best method of inducing them to route their cargoes through the Port of Los Angeles.

Under the terms of the contract, Chernus will have no authority to enter into agreements on behalf of the Harbor Department but will act solely as a preliminary contact man and will submit monthly reports and a summation at the end of the contract to General Manager Bernard J. Caughlin.

PORT ACTIVITIES

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Nagoya Surcharge Abolished

In compliance with the request made by the Japanese Government and civil circles concerned with the Port of Nagoya, the Trans-Pacific Freight Conference and the Pacific Westbound Conference have abolished the surcharge (\$3 per ton) on cargoes for Nagoya effective January 10, 1958.

Ore Import base Construction in Progress

The first "ore import base" in Japan capable of storing 3,000,000 tons of ore will make a debut in the center of the Inland Sea of Seto this year. The base is in the process of construction in Mitsukoshima Island off the City of Kure, where a former naval depot stood. Cargo handling facilities are now being equipped by Mitsukoshima Wharf Company on the base so as to receive ore carriers carrying iron ores in coming autumn. The company, capitalized at ¥10,000,000, was established in November 1956 by National Bulk Carriers, Inc., Yawata Iron and Steel Company, Fuji Iron Manufacturing Company, Asahi Glass Company, Toyo Soda Company, Ube Soda Company, Tokuyama Soda Company, Iwai Sangyo Company, and Masuoka Construction Company. Mr. E.L. Hearn is president of the company.

Himeji to Become Open Port

The port of Himeji, which is to be designated as an open port as a result of the revision of the Customs Law (introduced to the present session of Diet), will be greatly improved for foreign trade from the next fiscal year. The port authorities are intending to change its improvement policy for the port which has been only a locally important port in the past. With the steel industry area of Hirohata in the vicinity, the principal goods handled at the port are coal, coke and irone ore. The cargo tonnage through the port was registered as 4,120,000 tons in fiscal 1956.

Port of Melbourne's Statistics

A compilation of shipping entries to the Port of Melbourne during the calendar year 1957 reveals that ships wearing the Japanese flag comprised 11.1% of all non-British vessels berthing, compared with 8.7% in 1956 and 6.7% in 1955.

The statistics cover only vessels under the Japanese flag, and not vessels trading to Japan and other countries under British and other flags.

There were 58 entries of Japanese flag ships, better than one per week, and the gross tonnage aggregated 473,-756 tons.

At the end of the year three vessels were berthed simultaneously—the tanker "Yoho Maru" which discharged over 5 million imperial gallons of crude oil for the Standard Vacuum Refining Company, and the cargo vessels "Tozai Maru" and "Toho Maru." The "Tozai Maru" loaded general cargo, scrap metal and 4,000 bales of wool, and the "Toho Maru" discharged 1,347 tons of piece goods, toys, cutlery, earthen-

ware and chinaware from Kobe, Nagoya and Yokohama. She has since returned to Melbourne to take on 2,000 tons of general cargo for Japan.

First vessel to berth in the New Year was the "Shoryu Maru" which discharged piece goods, earthenware and carpets from Osaka, Yokkaichi, Nagoya, Yokohama, Kobe, Hong Kong and Taiwan.

Another interesting vessel with Japanese affiliations to berth in the port recently was the 35,000 tanker "Stanvac Mariner" which brought the largest cargo of crude oil ever to have been discharged in Melbourne—32,638 tons. The tanker berthed on Christmas Eve. She was built at Nagasaki by the Mitsubishi Shipbuilding and Engineering Company at a cost of about £A2,250,000, and was delivered to the owners towards the end of 1957, to sail under the British flag.

Ore Carrier Wharf at Muroran

Keeping up pace with the recent trend of the construction of large ore carriers, the Muroran Steel Mill of the Fuji Steel Manufacturing Company applied to the Ministry of Transportation for permission to construct a wharf capable of accommodating 40,-000-ton carriers. It will cost $\frac{1}{3}$,000,-000.000.



George Killion, president, American President Lines, and Lloyd Menveg, president, Los Angeles Board of Harbor Commissioners, sign agreement on constructing new giant combination passenger-cargo facility to be preferentially assigned to APL. Looking on are (from left): Dr. Elton C. Spires and Charles Tanner, Harbor Commissioners; Eugene Flaherty, APL vice president in charge of West Coast operation at Los Angeles Harbor, and Bernard J. Caughlin, general manager of the port.

(Story is given on page 15)

PORT OF STOCKTON

California's Inland Gateway to the Seven Seas

Phenomenal Growth of the Port is Surveyed in its Silver Anniversary Year

A nine-hundred per-cent growth in 24 years—faster, in comparative terms, than the 200-year populations rise of the United States!

From a small river terminal handling 309,546 tons of potatoes and corn its first year to a multimillion dollar West Coast seaport with more than three million tons of varied cargo bustling across its eleven modern wharves, is the fantastic quarter-century climb of the Port of Stockton, California's only inland seaport, can look back on as it enters its silver anniversary year.

A sweeping series of expansions totalling \$10,000,000 in the last four years has boosted this Northern California terminal into the fastest growing seaport on the West Coast, serving the shipping needs of the entire Western United States.

Japan Offices

Japan offices of California's inland port opened in Tokyo April 1, 1957. With the establishment of this first overseas office, the Port of Stockton has become an international concern, affording personal contact with Eastern shippers, keeping them and others aware of the economic advantages of conducting business with the Port of Stockton.

A wealth of varied import and export experiences marks the personnel staffing the port's Japan office.

S. Okada, president of the Eastern office, is a former chief of the Maritime Bureau of the Transportation Ministry, and a graduate of Tokyo Imperial University.

Capt. S. Onishi, director of the Japan branch, was an administrative official of the Maritime Bureau of the Transportation Ministry,

and is a graduate of Awashima Navigation College.

Japan office Advisor N. Yamamoto is a former representative of the Seattle office of the United Ocean Transport Co., Ltd., and former managing director of Kambara Steamship Co., Ltd. He is a graduate of Kobe University.

Facility Expansions

Two million tons of bulk ore and coal from Nevada, Utah and Oregon, doubling the more than 1,-000,000 tons received during the past twelve months, will pour into Port of Stockton's eight-acre loading facility, already the West Coast's largest and most efficient, when the four-year-old facility's vast 100% expansion, now underway, is completed.

The facility's extension to a twin-wharf ore dock, capable of storing a quarter-million tons of bulk material, will give Stockton the biggest and fastest ore loading facility in the Western United States.

More than two million tons of barley, rice, corn and milo in 1957 streamed from Central California's rich agricultural empire into the 3½-million-dollar Stockton Elevators, the Port Stockton Grain Terminal, Inc., and associated facilities.



BIRD'S-EYE VIEW of nerve-center of California's Central Valleys agricultural empire, Port of Stockton, affords a panorama of progress in modern facilities. Here's an indexed rundown on California's only inland seaport: 1—Eight transit sheds; 2—Fireproof warehouses; 3—Cotton compress; 4—Two grain terminals; 5—Bulk material loading facility; 6—Nine berthing accommodations; 7—Bulk wine facilities; 8—Industrial park area.



A WATER-TRANSPORTA-TION MAN throughout his career, Elmo E. Ferrari became Port of Stockton's director in 1946, and has engineered a 237% climb in total tonnage, to a figure three times the 1946 total.

These facilities represent а total bulk grain capacity of 8,-975.000 bushels. The Port of Stockton controls all dockside activities at Stockton Elevators in close cooperation with the independently operated Elevators, the West Coast's most modern and largest deep-water grain storing and processing facility.

Ability to whisk bulk grain into the holds of waiting vessels at the rate of 600 tons per hour creates savings in time and dollars for grain shippers throughout Western America.

Wines from the many Central California vineyards, through the equally numerous California wineries, flood into the Port of Stockton's revolutionary \$700,000 bulk wine storiang and loading facility, installed in the Spring of 1957.

Its possession of 28 gigantic stainless steel tanks, holding $2\frac{1}{2}$ million gallons of bulk wine, and its status as home port of America's first specially constructed bulk wine vessel, the S.S. Angelo Petri, have made Port of Stockton the logical wine shipping center of the United States.

Protection and security of cargo matches the marked economic edge enjoyed in shipping via the West Coast's fastest growing seaport. 1,600,000 square feet of warehousing area—modern, sprinklerequipped, and big enough to hold a dozen full-size baseball fields sprawl across the Port of Stockton with a \$38,000,000 load of general cargo, under the 24-hour vigilance of the Port's full-time police force.

Cotton from California's southern Central Valley region is compressed, stored and shipped by some of the West's most modern and best designed equipment at Port of Stockton's cotton compress facility.

Sprinkler-equipped warehouse space for 30,000 bales of flat cotton, plus adjacent sprinklered warehouse area available for immediate use, all carrying low premium insurance, offer California cotton shippers fast, efficient and economical service. Compress rates at the Port of Stockton *include* movement of cotton from compress to shipside—a unique feature designed to create extra savings to shippers.

More than 500 cargo vessels, representing more than two dozen steamship lines, churned through San Francisço's Golden Gate down the 65 nautical miles of the 30foot deep San Joaquin River during 1957 to load a variety of cargoes ranging from canned goods and dried fruit for the East Coast and Europe, to cotton and bulk ore for the Orient, to wine for points the world over.

Stockton Port District, resting in the heart of the fourth richest agricultural area in the United States, is operated by a board of commissioners appointed by the city council of Stockton and the San Joaquin County Board of Supervisors.

A director is appointed by the commissioners. Since present Port Director Elmo E. Ferrari's arrival in 1946, total tonnage handled by California's inland port has jumped to more than three times the 1946 figure.

The City of Stockton's investment in the Port of Stockton venture exceeds three million dollars, with State and Federal investment totaling more than four million dollars. But the Port of Stockton is its own biggest investor, with a six-million-dollar stake in its own future.



MULTI-MILLION DOLLAR "NEW LOOK"-This is how the Port of Stockton's bulk cargo handling facility will appear after vast, 100% expansion, now underway, completed. is Area within dotted lines is center of main first-phase construction: installing concrete mooring platforms for additional wharf. extending main conveyor belt and increasing ore - loading equipment, and doubling ore stockpile area. Three major railways will roll ore cars along extended Portoperated trackage on wharffront. Original bulk facility was installed in 1952.

First phase of the nine-part bulk facility expansion is being financed by improvement bonds totalling \$500,000, issued in October, 1957. All subsequent phases of construction will be supported by Port District earnings on a pay-as-you-go basis.

In its colorful quarter-century of life, this nerve center of California's fabulously fertile Central Valley region, sitting at the hub of the great San Joaquin and Sacramento Valleys, has saved Central California growers and shippers a total of more than 22 million dollars with its terminal rates and convenient inland position.

The same pioneering initiative and progressive planning which brought an ambitious dream to successful reality on February 2, 1933, by opening the Port of Stockton after three decades of active planning, can be seen still on the move in the development of the 257-acre Industrial Park site.

Adjacent to the Port area, out of the congested metropolitan districts, and 65 miles nearer Central California growers than seacoast ports, the Port of Stockton's Industrial Park offers the "big three" in advantages to heavy industry—facilities, location and opportunity for expansion.

"Next door" access to world markets, huge reductions in source-to-factory transportation costs and shipping expenses, and room to stretch—an important factor to any growing concern belong to the industries which have settled in Industrial Park.

In this, its silver anniversary year of service to first California, then Western America and now the world, the Port of Stockton holds the promise of future growth to catch its "Jack-and-the Beanstalk" rise of the last 25 years.

Port of Stockton Director Ferrari views tomorrow's growth as a certainty. "The profitable combination of the human elements of management, service and faith, and the mechanical advancements in cargo-handling equipment and facility expansion," says Ferrari, "assure the continued rise of California's inland gateway to the seven seas."

Seamen's Center in Osaka

The International Seamen's Center in Osaka was visited by some 150 foreign seamen during the period from October 15, 1957, when it was established to the end of December. The visitors included American, British, Norwegian, Greek, Philippine, and Indian seamen. The center was set up in mid-October last year at the instance of the city of Osaka and shipping companies including the O.S.K. Line to serve foreign seamen as a tourist guide, a rest-house and a welfare center.

O.S.K. to Open Far East Pacific Service

The O.S.K. Line notified the resumption of the regular Far East/Pacific service to the Ministry of Transportation on February 5. The service will be operated from April 1 with a monthly sailing. The ports of call are: Kobe, Moji, Nagoya, Shimizu, Yokohama, Otaru, Manila, Cebu, Vancouver, Seattle, San Francisco, Los Angeles, San Diego. Liners to be used are: Kinko Maru, Kikutama Maru, Gekko Maru and Tokai Maru.





31/, MILLION **DOLLAR** grain elevators house 2,000,000 bushels of grain from all over Western United States. Stockton Elevators are one of the most modern facilities of its kind in the world. Age of Stockton Elevators: one vear.

Miscellaneous News

Tobata Port Construction in Progress

The Yawata Iron and Steel Company is now making all efforts to speed up the construction of the harbor for its Tobata Steel Mill's private use, the new construction of tug boats and the improvement of cargo handling facilities in order to accommodate ore carriers from coming August. The completion of the harbor will enable 30,000 tonners fully loaded pass free. Two tug boats equipped with 650 h.p. Diesel engine are now under construction and a gantry crane for handling ore is now being built at the Ishikawajima Heavy Industries.

Quarantine Station for Muroran

In view of the growing volume of the import of foreign rice and lauan and the export of potato and plywood, the port of Muroran authorities are planning to establish a quarantine station handling the above items, making representations to the Ministry of Agriculture and Forestry.

First Ore Carrier Enters Service

The ore carrier Nitta Maru (18,187 tons d.w.) for the Terukuni Shipping Company which was being built at the Kure Shipyard under the 13th Government shipbuilding program was completed and delivered to the owners on January 20. She is the first ship built in Japan to be used solely for ore carrying purposes.

Regular Colombo Service Will Begin

The J.I.P. Line (a joint undertaking formed by Iino Shipping Company, Mitsubishi Shipping Company, Nissan Steamship Company and Shin Nihon Steamship Company) notified the Ministry of Transportation of the inauguration of the Japan Colombo regular liner service with 12 sailings per annum. The ports of call include Yokohama, Shimizu, Nagoya, Kobe, Moji, Hongkong, Singapore, Port Swettenhaw, Penang and Colombo.

Mammoth Slipway Completed

The expansion work of a slipway for mammoth tankers costing ¥760,000,000 was completed at the Harima Shipyard. The slipway, 253.86 meters long and 35.32 meters wide is capable of building mammoth tankers up to 66,000 tons d.w. The keel will be laid on the slipway of the 66,000-ton tanker ordered by Transoceanic Shipping, Inc. in mid-September 1959.

* Mitsubishi Line to Open U.S. **Pacific Service**

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The Mitsubishi Shipping Company notified the Ministry of Transportation of the inauguration of the Japan-U.S. Pacific Coast service from April with 12 sailings a year. The ports of call include Kobe, Nagoya, Shimizu, Yokohama, Otaru, Vancouver, Seattle, Tacoma, Longview, Portland, San Francisco and Los Angeles.

Japanese Government to Join IMCO

The Shipping Bureau, Ministry of Transportation, which is now studying the accession to the Inter-Governmental Maritime Cooperative Organization, will shortly decide on its formal attitude.

BANGKOK

A Prominent Port in South East Asia

A new port in South East Asia to come into prominence is Bangkok which today occupies a leading position among the ports in this part of the world which offer modern facilities and a quick turn round for shipping. Bangkok is situated on the River Chao Phraya (Menam Chao Phraya) at the head of the Gulf of Thailand and is the capital and major port of Thailand. The port today provides the city with modern shipping facilities at close hand which keeps down the cost of carriage for the importer and exporter and is therefore of prime importance, for Bangkok with a population of 1.3 million is also the heart of the commerce and industry of the country. The port provides deep water berths alongside a wharf one mile in length which is both rail served and well laid out for road transport.

The new port of Bangkok is an illustration of the progress and development which is now taking place in the kingdom of Thailand. Before the channel was dug through the bar at the mouth of the river and the new port opened to vessels of deep draught, Bangkok was accessible only to small vessels or vessels of medium tonnage and light draught, for at high water the depth on the bar was only 15-16 feet. The large vessels which were too deep to cross the bar had therefore to be discharged and loaded in the deep water anchorage off the island of Koh Sichang, some 50 miles distant from the city, the cargo being sent up to Bangkok or brought down for shipment by lighterage which involved a considerable expense.

This heavy cost of lighterage was a problem which confronted the Government for many years and prompted them to consider the possibility of dredging a channel through the bar and building a new port with deep water accommodation alongside and with all modern facilities for handling cargo. The League of Nations were invited to send out a technical mission to examine the problem and this duly arrived in Bangkok in 1933, composed of three well known consulting engineers with wide experience of port construction. M.P.H. Watier. Mr. A.T. Coode and Mr. G.P. Nizhoff. Following their favourable report the Government decided to proceed with the project and an international competition was opened for a design for the new port. The design submitted by Prof. Dr. A. Agatz of Bremen was the one finally selected. The site for the new port was found at Klongtoi about five miles down river from the existing wharves, where a large area was reserved which would allow for future expansion as the trade of the port developed. Construction commenced at the beginning of 1939 but was partly held up by World War II, and some bomb damage was suffered. The first phase of the plan was completed after the war, but the channel through the bar had not been dug, for although dredging had started towards the end of 1939 with one small suction hopper dredger, the "Sandon I," it was not until 1951 that dredging operations were extended on a major scale with the employment of contractors.

In 1950 a loan of U.S. \$4.4 million was obtained from the World Bank for the development of the port, and in 1951 the Port Authority of Thailand was established as an autonomous organisation to take over the administration of the port which had previously been in the hands of a Government department.

The New Harbour Wharf at Klongtoi is a reinforced concrete structure supported on piles and faced with steel sheet piling. The wharf provides a mile of deep water berths and has an apron of 16 metres equipped with double rail tracks and 12 electric semiportal level luffing travelling wharf cranes— 4×5 tons and 8×3 tons. A fresh water supply for ships is provided. There are five single-



A mobile crane working on the wharf.

storey transit sheds comprising nine sections of ferro-concrete and brick construction with loading platform and steel sliding doors at the rear and rollar shutter doors on the wharf. The total floor space exceeds 48,000 sq. metres. Reinforced concrete open storage areas are situated at the back of the transit sheds, and more space is now being laid down. A threestorey warehouse provides bonded warehouse accommodation and is also used for the storage of goods transferred from the transit sheds in consequence of delays in clearance.

A port power station with three diesel driven generating sets of 575 kw each, provides power and light and makes the port independent of the city electric supply. The port is thereby provided with ample modern lighting.

By Government decree all imports other than bulk cargoes are landed at the New Harbour Wharf at Klongtoi. Ships are discharged at the wharf by private stevedore contractors engaged by the shipping agents, the cargo being received on the wharf by the Port Authority and handled by forklift trucks, tractors and trailers, power driven platform trucks and mobile cranes. The electric semi-portal wharf cranes are of great assistance in supplementing ship's cargo handling gear and have helped considerably to speed up the rate of discharge and the turn round of ships. It is the policy of the Port Authority to mechanise the handling of cargo to the greatest practical extent in order to speed up cargo operations and reduce damage, and palletisation is being gradually extended in the port. Thirty new fork-life trucks and two towing tractors were obtained in 1957.

Cargoes which at one time had to be discharged overside to lighters outside the bar are now brought all the way up to Bangkok under hatch covers, the double handling of the cargo in the Koh Sichang anchorage being a thing of the past, and this has resulted in less damage and less pilferage. With mechanised operations and improved methods of handling cargo on the wharf, and with electric semi-portal travelling cranes to supplement ship's gear,



A semi-portal wharf crane at work.

it can now be said that Bangkok is one of the ports of South East Asia which is leading the way with modern equipment.

Although most ships load their cargoes in mid-stream overside from lighters working both sides of the ship, cargo is also loaded at the wharf, including an increasing amount of timber which is brought up by small coasting vessels or by lighters or road transport and stored on the quay ready for shipment, forklift trucks being employed to bring the timber alongside the ship.

Today Bangkok has a world-wide trade and ships from many countries use the port. Bangkok is one of the great rice ports of the East and is well known for its rapid loading of rice cargoes. The port is also famed for its exports of teak, mai yang and other timbers. Timber is shipped in round logs or as sawn timber cut to various sizes as sleepers, railway wagon bottoms, planks, boards and scantlings, etc.

Vessels up to 565 feet in length and 27 feet draught may now enter the port. The largest cargo to be discharged in the port has been 11,041 tons of oil and petroleum products which arrived in the Shell Co.'s m.v. "Perna" of 12,000 tons d.w. on a draught of 26' 9".

The three large oil companies with storage installations in the port at Chong Nonsri—The Shell Company of Thailand Ltd., Standard Vacuum Oil Company and

Caltex Oil (Thailand) Ltd. have all improved and extended their jetties to provide for larger tankers, and have extended their storage accommodation to meet the ever increasing imports of oil and petroleum products.

In 1956 a total of 1,247 vessels of 2,725,219 net tonnage entered and 1,254 vessels of 2,709,440 net tonnage cleared the port. Total imports for the year were 1,513,252 tons, including 753,776 tons of oil and petroleum products. Total exports were 1,964,226 tons. The total cargo handled in the port, both imports and exports and including cargoes arriving in bulk, during the year 1956 was therefore 3,477,478 tons.

The principal imports are machinery, steel and ironwork, motor cars and vehicles, mechanical equipment, electrical goods, hardware, goods, chemicals, manufactured and pharmaceutical medicinal goods, oil and petroleum products, textiles, foodstuffs, wines, spirits and beers, coal. Principal exports are rice, teak, mai yang and other timbers, oil seeds and beans, tin and lead ores, rubber, hides and skins, tobacco, tapioca, lace, silk goods, salt, livestock.

Under a Customs Agreement between Thailand and Laos which was signed in 1955 and came into effect from November of that year, Bangkok is now the port of entry for Laos, goods arriving in transit being sent up by rail to Nongkhai in North East Thailand and transported across the River Mekhong to Vientiane by ferry.

Pilotage is compulsory and a pilot vessel is stationed outside the entrance to the bar channel. With one exception the pilots are all ex-Royal Thai Naval officers and they enjoy a high reputation. The approach to the port is made through the bar channel which is 19 km. in length, 100 metres wide in the reaches and 150 metres wide in the bend, and which is buoyed and lighted throughout. The widening of the bend to 250 metres to make navigation easier for shipping is now in progress. In dredging the channel through the bar, the object has been to make it deep enough to allow vessels of 10,000 gross tonnage to enter the port. The channel has therefore been dredged to a depth of 8.5 metres or 27.9 feet below M.S.L. or 6.3 metres or 20.7 feet below L.L.W. At M.H.W. the depth in the channel is 9.41 metres or 30.9 feet. The maintenance dredging is being carried out by two twin-screw trailing suction hopper dredgers owned by the Port Authority, one of which is a new dredger of 2,000 cu. metres hopper capacity delivered in 1956 by Dutch builders.

Maintenance dredging in the river is also being carried out and a new suction hopper dredger, the "Sandon 5" of 750 cu.metres hopper capacity which discharges ashore by pipeline and which has been specially designed for this work, has recently been delivered by Dutch builders and has now commenced operations in the port area, where the object is to attain a depth of 11.5 metres below M.S.L. To maintain deep water in the berths alongside the wharf, continuous dredging is necessary and new dredging plant ordered for this particular work has now been delivered. This consists of a crane fitted with a 5 cu.yard grab or clamshell mounted on a pontoon barge operating on spuds. The crane loads into steel hopper barges which dump through bottom doors in a deep part of the river.

In 1956 a second loan of U.S.\$ 3.4 million was obtained from the World Bank to finance the purchase of the new dredging plant. The two loans obtained from the Bank have therefore been of great



Dredger "Sandon 5" with 710 cubic-meter hopper dredging the harbor area.



Dredger "Sandon 4", with 2,000 cubic-meter hopper, is employed in maintenance dredging of Bangkok Ban Channel.

assistance to the Port Authority in the development of the port and the provision of modern equipment.

The organization of the Port Authority has been improved and the training of staff and labour put in hand, and selected staff members are sent abroad to study in other ports. The Engineering Department with civil, mechanical and electrical divisions is now carrying out much of its own work with direct labour. A Marine Department has been established with divisions for hydrography, dredging, marine engineering and stores procurement.

The Port Authority is a member of the International Association of Ports and Harbors (I.A.P.H.), the International Cargo Handling Coordination Association (I.C.H.C.A.) and the Permanent International Association of Navigation Congresses (P.I.A.N.C.).



A harbor tug of 550 H.P.

PORT OF LOS ANGELES

Experiences Further Rise in Shipping and Cargo

(This article was prepared at end of last year. Hence the standard year is 1957.—Editor)



Lloyd A. Menveg, 32, Wilmington businessman, was re-elected president of the Board of Harbor Commissioners July 27, 1957, at the regular weegly meeting of the Board.

The Port of Los Angeles, U.S.A., huge delivery entrance and shipping dock for commerce with the countries of two hemispheres, this year chalked up significant increases in foreign ship arrivals, cargo tonnages and gross revenues.

A total of 2058 vessels of foreign registry arrived at the municipal port during the year ending June 30, an increase of $17\frac{1}{2}$ percent over the previous year's total according to General Manager Bernard J. Caughlin. United States tankers and freighters boosted the total to 4381, as compared to 4179 in 1955-56.

This rise in shipping was reflected in a $11\frac{1}{2}$ percent rise in general cargo tonnage, a 10 percent increase in foreign receipts and nearly 13 percent higher coastwise receipts. Gross revenues reached an all-time high, \$7,991,-704—\$1,909,731 or 31 percent more than for the preceding year. The total cargo figure this year was 24,125,432 tons.

An average of 12 ships a day,

throughout the year, come through Los Angeles' great ocean door, Angel's Gate, and move into the municipal wharves to deposit cargoes from 30 nations in all arcs of the globe.

They bring in molasses, bananas, copra, crude rubber, newsprint, green coffee, window glass, metal pipe, veneer, plywood and hardwood lumber, oil and hundreds of other commodities.

And, really, a like number of ships depart for other world ports, carrying in their holds iron and steel scrap, borax and borate, citrus fruits, cotton, vegetable oils, animal fats and greases, old newspapers, infusorial earth, steel mill products, industrial chemicals, manufactured items.

For the third consecutive year, Japan, with 369 ship arrivals at Los Angeles arbor, led all other foreign flags, Caughlin stated. Liberia-registerer vessels numbered 322, third-place Norway showed 309 and Great Britain came in fourth with 208.

The 7020-acre port has led all other West Coast ports in tonnage ever since 1923.

To cope with the rising tide of comcerce, present and future, the Harbor Department is engaged in a continuing program of expansion and improvement. Among important facilities completed in the last year were a new pilot station and a $$2,000,000,000, 504 \times 200$ -foot clear-span transit shed at Berth 199.

The West Coast's only marine terminal especially designed for petro-chemicals was dedicated four months ago with the arrival of a tankship carrying 4,200 tons of methanol, acetete and glycol. The facility, located on Main Channel, has 21 tanks with a total capacity of 75,000 barrels. Each tank has its separate pipeline from the dock and to the truck and railroad loading area on the street side.



Bernard J. Caughlin, General Manager of the Los Angeles Harbor Department, has taken up the post since June 10, 1954.

The low-lying drawbridge across the entrance to West Basin now is in the last stages of removal. When this is completed, the 149foot entrance is to be widened to 600 feet, giving better accessibility to the big ships which will be visiting the additional terminals to be built inside the Basin.

Plans and specifications are nearly completed for the first of these facilities, a 20-acre wharf and shed development. Construction will start in the next couple of months and will be completed in two and one-half years.

Dredging in Outer Harbor for a super-tanker terminal started in October. The Harbor Department is dredging fairway, 45 feet deep and 500 feet wide, from the breakwater entrance to the terminal site and will build the piers. The tanks and pipe and pumping systems will be installed by the oil company and the facility is expected to be ready for use in January 1959.

Among other projects envisaged in the expansion program are a cargo-passenger terminal on Main Channel near Boschke Slough, a bulk cargo loading and unloading installation and the widening of three existing transit sheds.

(One of the new expansions, which has recently been started, is given on next page.—Ed.)

Giant New Passenger-Cargo Facility for Los Angeles

A giant new combination passengercargo facility is to be built at Los Angeles Harbor, it was announced (December 4), following the signing of an agreement by the Board of Harbor Commissioners and the American President Lines.

The agreement, signed by Lloyd A. Menveg, Harbor Commission president, and George Killion, president of APL, provides that the new shipping installation will be preferentially assigned to American President Lines to meet the company's needs under its expansion program.

It also was stipulated in the agreement that all of APL's passenger and cargo business in Los Angeles and the surrounding area will be handled through the new facility for at least

20 years.

Bernard J. Caughlin, the port's general manager, said the terminal, to be located on the west side of the main channel at Berths 93-95, will include a two-story passenger-cargo shed, 1050 feet by 200 feet, with the passenger facilities on the upper floor; and a one-story cargo shed, 630 feet by 200 feet.

To serve the new terminal—and other shipping facilities to be built just south of the area later—a slip, 1200 feet long, 400 feet wide and 35 feet deep, will be dredged from a shallow inlet now known as Boschke Slough. Cost of the dredging is estimated at \$1,000,000.

The sheds, complete with 2400 linear feet of wharf, a 3,000-car paved parking area, access roads, rail facilities, refrigerated cargo space, latex tanks and other special features, will cost an estimated \$14,000,000. Construction costs will be paid from Harbor revenues during the next five years, Menveg said.

It is anticipated that the project will be completed in four years, by which time the American President Lines will have put its new 1400-passenger luxury liner into the Pacific service.

The passenger-cargo terminal at Berths 153-155, now occupied by APL, then will be assigned to another steamship company, Caughlin stated, adding:

"This great new terminal, which will have a 35,000-ton capacity, is another big step in the 15-year, \$101,000,000 expansion program which the Port of Los Angeles must push if it is to retain its leadership on the Pacific Coast."

(See photo on page 5)



Aerial view of the 7,020 acre Port of Los Angeles, largest Harbor in the Western United States where 5,000 ships annually provide service to more than 200 world ports. The \$150,000,000 Harbor is the largest man-made port in the world. More than 2,000,000 tons of domestic and foreign goods flow through the Harbor monthly. Facilities include 3,363,000 square feet of transit sheds with a total length of 13 miles; 41 acres of open wharves, 76 acres of wharves, platforms and ramps, and 153 acres of sheds, platforms, wharves and ramps.

Port of Tokyo's Expansion Works in Progress

metropolis of Japan, which with a population of over 8,500,000, constitutes the political, economic It is also the nation's great consuming and producing center.

The Port of Tokyo is a manriver mouth of the Sumida, which the real sense of the words. It was, countries entering. however, in 1941 that the port was opened to international trade and commerce, when the harbor facilities had generally been perfected and the volume of cagoes shipped through the port had reached 13,-000,000 tons.

designed for small-sized vessels, mutual relationships.

The ocean gateway to Tokyo, the port was far behind the other the Port of Tokyo serves the great foreign trade ports of the country.

On the occasion of the resumption of foreign trade after the last war, a large scale construction and cultural center of the nation. work was quickly started for the port with a view to expanding and improving the harbor facilities well worthy of a regular foreign made harbor, which construction trade port to accommodate large originated in the dredging of the vessels from various countries. Thanks to the progress of this runs through the city and flows work, the port has already been into Tokyo Bay. But it was only remarkably developed as evidenced after the great earthquake-fire of by 12,100,000 tons of cargo yearly 1923, that construction works were handled and a large number of pushed to create a modern port in ocean-going vessels of various

> It is the aspirations of the citi- Harumi Wharf zens of Tokyo to early realize a nation's metropolis," which will favorably compare, both in name and substance, with any of the

agressively in progress now in the port of Tokyo. The Tokyo Metropolitan Government has worked out the harbor expansion plan with a view to perfecting the facilities to well cope with a total volume of 14,000,000 tons of cargo which is expected to be handled through the port in 1965. The execution of this plan will enable the port to accommodate at one time 57 vessels, thirty 10,000 tonners, thirteen 6,000 ton vessels and fourteen 3,000 ton vessels. Highlights of this expansion plan are:

Expansion Works Under Way

Harbor construction works are

Fairway and Anchorages

The existing fairway will be widened to 200 meters in width and dredged to 10 meters deep, for the free passage of large-sized vessels, while the anchorages will be dredged to 9-10 meters deep.

Located close to the heart of the great modern port well worthy of city, Harumi Wharf is planned to the name "ocean gateway to the be developed as the center of the port of Tokyo in the future, which is capable of accommodating altogether 8 vessels, consisting of However, owing to the fact that modern ports of the world and 10,000 ton freighters and 20,000 many of the facilities, especially will bring Tokyo and all of the ton passenger ships. Equipped those for cargo handling, had been port cities on the globe to closer with, besides the wharf 1,330 meters in extension, a large sized



harbor railway, water supply and of the total volume of cargo handled drainage systems, and other faci- through the port of Tokyo, will be lities and constructions, this harbor expanded in scope, with the exarea will be developed into an ideal tension of the wharf to 150 meters modern foreign trade zone.

Toyosu Wharf

Coal Wharf The existing To- Iron and Steel Wharf yosu Coal Wharf, which is exclusively assigned for the handling iron and steel per year, a wharf

travelling crane, transit sheds, a of coal, representing 30-40 percent and the installation of 3 more cranes, for handling 1,600,000 tons of coal per year.

For handling 1,200,000 tons of



Air view of Toyosu Coal Wharith Harumi Wharf in the background.

Hinode Wharf, Shibaura, is active with coastwise shipping.

280 meters in length, with 2 berths for 10,000 ton class vessels, will be newly constructed adjacent to the coal wharf.

Shinaqawa Wharf

By filling up a sea area of 840,-000 square meters in the Shinagawa district, a foreign trade wharf, 720 meters in length, (Continued on page 19)

Principal Facilities of Port of Tokyo

Under the huge expansion and improvement plan, the Harbor Bureau of the Tokyo Metropolitan Government is carrying out construction works with 1965 as the completion year. Every year sees new facilities being added to the harbor. Below are given, however, the port's principal facilities as of the end of 1957.

;	Wharves and Qua	ys	Lumber Storages an	d Coal Storages	
Harumi Wharf " " Toyosu Coal Wharf	Length (in meter) 336 145 300 250	Capacity 10,000 tons 2 berths 5,000 '' 1 berth 6,000 '' 2 berths 10,000 '' 1 berth	Municipality owned Lumber Storages Private Lumber Storages Municipality owned Coal Storages	261,700 squar 146,300 " 17,700 "	e meters "
Shibaura Wharf Hinode Wharf Takeshiba Wharf	$910 \\ 564 \\ 309$	3,000 " 1 " 6,000 " 6 berths 3,000 " 6 " 2,000 " 3 "	Private Coal Storages Cargo Handling	186,600 " Equipment	,,
	Mooring Buoys		Li Harumi Wharf, Wharf Crane	fting Capacity 5 tons	Number 2
Mooring Buoys	Number 22 5(Capacity 10,000 tons 5 berths 6,000 '' 8 '' 3,000 '' 7 '' 00-1,500 '' 6 ''	Toyosu Coal Wharf, Bridge Transport Cranes Floating Crane	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2 1 1
Trans	it Sheds and Wa	rehouses	Harbor Ra	ilways	

	Location Number Flo (in square me	oor Space ter)	Shibaura Harbor Rai Toyosu Harbor Railwa	lway 7.5 ay 5	kilometers "
Municipality owned	-		Harumi Harbor Railw	7ay 5.8	s "
Transit Sheds	Harumi Wharf 1	3,800			
,, ,,	Shibaura Wharf 3	8,000	r	Fugboat	
,, ,,	Hinode Wharf 8	17,600			
Private Transit Sheds	49	21,300	128 gross tons	900 H.P.	1
Private Warehouses	835	502,200	66 " "	280 "	2



Ishikawajima Shipyard in the Port of Tokyo is one of the leading shipbuilders of Japan.

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(Continued from page 17,

equipped with landing places, transit sheds and other necessary facilities, will be constructed there, so as to simultaneously accommodete four 10,000 tonners.

Lumber Storages

To cope with demands for clearance, rearrangement and shortterm storage of lumber, whose import shows a yearly increase, lumber storages 270,000 square meters, 30,000 square meters and 150,000 square meters in area, will be constructed in the sea area northwest to Ariake-cho, north to Toyosu and south to former Fort No. 3, respectively. The total storing capacity will be 600,000 tons per year.

Other Facilities

The smaller-sized vessels basins at Tsukishima and Toyosu, and the canals will be dredged.

Further, under a long-term expansion plan it is planned to construct a wharf for liners, a waterfront industrial tsie, an airport, a deep sea fishery boats harbor, etc.



Part of Harumi Wharf, which on completion will accommodate 8 vessels, including 10,000 ton freighters and 20,000 ton passenger boats.

CARGO HANDLED THROUGH PORT OF TOKYO **JANUARY—DECEMBER**, 1956

Foreign Trade

Imports		Exports		
Item Vol	ume (in tons)	Item V	olume (in tons)	
Lumber	749,374			
Metals & metal product	s 418,662	Fertilizers	7,049	
Cereals (rice & wheat)	411,672	Chemicals	4,400	
Ores & ore products	282,068	Marine products	2,665	
Coal and cokes	114,770	Cement	2,104	
Chemicals	22,634	Cokes	2,031	
Fat and oil	9,855	Metals & metal produ	cts 1,553	
Cement	2,081	Lumber	1,282	
Miscellaneous goods	495,364	Miscellaneous goods	32,598	
Total	2,506,480	Total	53,682	

Domestic Trade

Item	Receipts	Shipments	Combined Total
	(in tons)	(in tons)	(in tons)
Coal & cokes	2,280,953	162,444	2,443,397
Metal & metal products	1,612,780	667,614	2,280,394
Ores & ore products	1,168,422	104,464	1,272,886
Fat and oil	$997,\!644$	18,834	1,016,478
Lumber	605,757	49,014	654,771
Cement	385,923	4,386	390,309
Chemicals	143,074	127,113	270,187
Marine products	120,831	8,073	128,904
Cereals	34,641	72,061	106,702
Miscellaneous goods	545,509	379,252	1,010,080
Total	7,940,178	1,633,930	9,574,108

Port and Harbor Labor Council Started

In compliance with the request of the Ministry of Labor, the Tokyo Metropolitan Port and Harbor Labor Council came into function on January 20. Its first regular meeting was held in February and the subjects of discussion included (1) the demand for, and supply of port and harbor workers; (2) labor conditions; (3) welfare; (4) education and guide; (5) suggestions to port and harbor transportation enterprisers in connection with labor; (6) the normalization of the relation between labor and management in the port and harbor industry.

* Japanese Shipyard in Brazil

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The Niigata Iron Works, Ltd. Tokyo, which has been studying the establishment of a shipyard in Brazil, has decided to form a company as a joint undertaking with Mr. Yamagata, a Japanese-descended Brazilian. The company will, for the time being, engage in the production of engines, planning to begin the building and repairing of 1,000 to 1,500-gross-ton midium size ships and 300-ton size fishing ships.

PORT OF SHIMONOSEKI

Western Japan's Gateway Port and the Nation's Largest Fishing Boats Base

Located in the farthest western end of the main island of Japan and on the southern side of the Shimonoseki Channel, Shimonoseki has thrived from olden times as her western gateway to the seas.

During the feudal ages when intercourse with the outer world had been prohibited for 226 years under the national seclusion policy, the Port of Shimonoseki was claiming its great importance as the commercial center of Western Japan, with close connections with the ports on the Pacific, the Japan Sea and the coasts of Kyushu Island. With the opening of foreign intercourse and commerce in 1862, however, Shimonoseki cut its figure as an active foreign trade port and in 1884 it was designated as a "special export port" by the Government. Later, when the Shimonoseki-Pusan Ferry-steamer service was inaugurated, it became Japan's gateway port to and from the Chinese continent. On the other hand, Shimonoseki today is

known as the largest fishing port of Japan, which forms the base for her ocean fishery boats.

Largest Base for Deep-Sea Fisheries

The fishery boats harbor is located to the north of the commercial port of Shimonoseki, with which it is connected overland. True to its name, this largest base for fishery boats of Japan affords an ideal and spacious harbor to accommodate at one time hundreds of fishery boats of all kinds. From this base are made the expeditions of deep-sea fishery boats far to the Antarctic Ocean, the Indian Ocean, the Yellow Sea, the East China Sea. etc. The enormous catches brought back by these fishing fleets are transported from Shimonoseki to the Osaka-Kobe district and farther to the Tokyo areas, thereby supplying a greater part of the people with various marine products as an important protein source for them.

Around the fishery boats harbor there are thriving numbers of factories and plants for processing and canning the marine products, to say nothing of the modern refrigeration and cold-storage facilities. Their products are not only supplied to the domestic markets but exported also to many other countries.

Because of its geographical position which shields it from the northwesterly seasonal wind, Shimonoseki Harbor is kept calm even in the winter season; moreover, the harbor is conveniently situated far from the rapid currents running through the Shimonoseki Channel. All this affords very favorable conditions to ships' entry and cargo handling operations.

Eastern Harbor

The commercial port of Shimonoseki is divided into the Eastern Harbor and the Western Harbor. The Eastern Harbor is chiefly assigned for the shipping of domestic and foreign trade cargoes. It is equipped with ideal storing facilities, besides being directly connected with the municipal fish and vegetable wholesale market.

The main facilities of this harbor consist of two wharfs: The one is 596.5 meters in extension and 6.3 meters in the depth of water, which is capable of accommodating 19,000 gross tons, and the other, 236.3 meters in length and 5.5 meters in the depth of water, has the accommodation for 9,002 gross tons.



Photo shows a part of the Western Harbor Pier, viewing the National Railways Corporation ferry boat plying between Shimonoseki and Moji, accross the Channel.

Western Harbor

The Western Harbor is centered in the municipal pier, which has four berths, each 9 meters in the depth of water, for 10,000-ton freighters. The pier is equipped with the municipal reinforced concrete transit shed and other storing facilities, whose total capacity exceeds 70,000 tons. The most noteworthy of them all, however, is the modern grain warehouse for continuous operation of unloading of bulk grain and its packing. Assisted by the modern cargo handling equipments, these facilities give high efficiency to the shipping and cargo handling operations at the Port of Shimonoseki.

Opening of Kanmon Undersea Tunnel and its Effects

The Kanmon National Undersea Highway, connecting Shimonoseki on the main island and Moji on Kyushu island, was officially opencd for traffic on March 9, after 21 years' construction work with $\frac{1}{7}$. 500,000,000 expenditures. Known as the first undersea tunnel to have ever been constructed in the world, this submarine tunnel is 3,460 meters in length, of which 780



Photo shows part of the Kan-Undersea mon Tunnel under construction

meters pass through undersea and 2.681 meters underground. It consists of two courses, upper and lower. The upper course is for the passage of pedestrians and the upper for motor vehicle .

Shimonoseki was municipalized in 1889, and during the past 70 years it has developed into one of the most prosperous local cities of the country, having a population



With the opening of the Kanmon Undersea National Highway, the City of Shimonoseki is destined to further development as a key point of the so-called North Kyushu Industrial district, which forms one of the nation's three major industrial centers, with the consequent rise of the Port of Shimonoseki as an industrial port. On the other hand, the newly opened undersea tunnel will serve to abundantly supply industrial water to the industrial areas across the channel, which has been suffering from shortage of water. All this points to the great contribution to this country's industrial development, which will be resulted from the opening of the new undersea highway.



Unloading a vessel at Pier 1, Western Harbor.

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PORT OF SHIMONOSEKI



Japan's Gateway to the Chinese Continent and South East Asia



Shimonoseki Celebrates the 70th Anniversary of its Municipalization and the Opening of the Kanmon Undersea National Highway!

CITY OF SHIMONOSEKI

- - -

City Office: Nabecho, Shimonoseki City

Tel.: (2) 6111, 6121

Research Organ on Port Development and Harbor Works in Japan

By Hiroji Otao

Assistant Director, Transportation Technical Research Institute, Ministry of Transportation

Background

The study of port development and harbor works, being closely tied up with the country's industrial development, is carried on in Japan with an enthusiasm almost unparalleled elsewhere in the world.



Hiroji Otao, Asst. Director, Transportation Technical Research Institute.

Statistically speaking, Japan at present possesses harbors almost on every 4 kilometers along her coastline, while practically all of her major cities owe their prosperity to their possession of or immediate access to harbors and ports. It is not perhaps too much to say that problems of planning, construction and operation of ports and harbors are inseparably bound up with the political and economic fate of the nation.

For some time after Japan was first opened to foreign trade in 1868, natural harbors with no manmade breakwaters and other port facilities were regarded as sufficient to cater to the then prevailing trading requirements of the country.

With the rapid industrialization of the country, modernization of ports and harbors began to be considered essential due to the necessity of creating land space for factories in waterfront area and to the consequent urgency of dealing with the problems of ground sinking, stinking filth emanating from factory premises and so forth.

Aside from these, the Government as well as the general public have increasingly been aware of the need of improving port and harbor facilities in order to prevent damages constantly caused to harbor areas, especially the blocking of estuary ports, by chronic visitation of seasonal typhoons and river flooding.

World's highest percentage of shipwrecks at harbor entrances and in the neighborhood of ports and harbors in Japan is due to violent maritime meteorological conditions as well as dangerous shoals and sand banks scattered in extreme complication along the country's coastline. This state of things, however, should not be left as it is without further technical studies conducted for its prevention.



General view of Port Development and Harbor Works Research Group's laboratories in Kurihama.



Calibration is being done on the wave height meter, invented by the Institute.

Research Organ Created in Kurihama

In recent years, particularly in post-war years, the operation of large sized tankers and freighters coupled by increased operation of all types of vessels has intensified the urgency of replenishing and expanding the existing facilities of principal ports and harbors in the country.

It was, indeed, to meet the above described situation that an embryonic organization devoted to the technical study of the problems relating to ports and harbors, which had hitherto been done separately by different universities, was created in the autumn of 1949. Some 40 research workers, who had been specially recruited for the purpose, started then to refurnish a modest wooden building left over by the defunct Imperial Navy, located 68 kilometers off Tokyo, to make it a laboratory of the newly created Port Development and Harbor Works Research Group in Kurihama, near Yokosuka.

Principal Researches

Later, with the installation of required equipments and acquisition of some 16 acres of adjacent ground, the institution has become a research center fitted to carry out its purposes. A few instances of admirable researches carried out by the staff of the institution, which might be of general interest, are mentioned below in order to acquaint the readers with the nature of research works conducted by the institution.

(1) Survey of Wave Movement

For the purpose of ascertaining the extent of striking power of high waves hitting at Japan's coast line during the typhoon season, the Beach Research Section of the Group has been conducting a painstaking experimental study on the movements of high waves with the use of self-registering wave meters, originally invented by the staff, supplemented by three dimensional serial photo pictures of actual wave movements in various parts of Japan. Surveys have also been made on the conditions of sea-beds along Japan's coast as well as on the meteorological conditions in the country's coastal areas. Already valuable results have been obtained out of these studies.

(2) Ground Improvement

The Soil Research Section has been carrying on intensively soil nature tests of various kinds of clay and the study on their applications. One of the fruitful applications of this section's research activities has been publicly recognized in the case of preparing the soil foundation for the installation of a gigantic coal burning furnace of the Tokyo Gas Company in the harbor area of Tokyo. Having minutely tested the soil taken from the spot where the furnace was to be installed at the Group's laboratory kept at constant temperature and moisture, the research staff has recommended the application of sand draining technique to consolidate the foundation. Through the application of this method under the supervision of the institute's technicians, the foundation soil has sufficiently been consolidated for the installation of



Photo shows the beach erosion in Niigata City, on the Japan Sea.



Float fixed to the pontoon of the sand conveyance tube.

one of the biggest coal burning furnace in the world.

(3) Research on Sand Dredging

Dredging sandbanks and using the recovered sands for creating reclamation ground are common practices for a country like Japan, which is short of land space as well as natural resources.

The usual method of measuring the amount of sand used in reclaiming land has hitherto been to measure the intended amount of sand by conducting a thoroughgoing survey of the depth of sandbanks before dredging and then to repeat the similar process after the reclamation work is completed.



Registration of the self-recording mud-meter.

However, more often than not there has occurred a wide discrepancy in figures between the predredging and post-dredging survey. In order to remedy this handicap in the past practice, the institute's machinery laboratory has carried out a series of researches on the problem and has succeeded in working out a device of measuring the actual amount of sand passing the sand conveyance tube. Due to the unexpectedly successful results of the experiment, this device has since become popular in land reclamation projects throughout the country.

(4) Beach Erosion Prevension

The city of Niigata is a port town along the Sea of Japan coast, located on the estuary of Shinano river. Due to industrial expansion, the city has grown to hold nearly 260,000 inhabitants.

An unusually rapid erosion of the beach line in the seaside area of Niigata has recently been causing a considerable amount of alarm among the population of the city. Statistical figures show that during 21 years since 1921 there has been a retrogression of 200 meters in the most badly affected point of the city's beach line caused by erosion, while during 4 years since 1942 there has been observed a similar retrogression of 40-50 meters on the same beach line.

In order to cope with this situation, a technical investigation committee was set up in 1948 to inquire into the problems relating to "harbor sinking and beach erosion".

The institute's staff have been cooperating with this committee by conducting on the spot surveys. They have already obtained excellent achievements in the way of theoretically clarifying the phenomenon of beach line erosion supported by hydrographical experimental results.

In the foregoing we have described a part of our institute's activities. We shall in the table given elsewhere in these pages outline the institute's organizational set-up and its present facilities.



Soil pressure experimental box in the Soil Pressure Research Section.



Inside of the soil pressure experimental box.



Long water channel with wind blower.



Large model basin just completed and started for experimental operation.



Model basin with water circulation and water channel with movable slope.



Large-scale experimental wave tank.



Vibration box in the Soil Vibration Research Section.



One of the Soil Research Section laboratories.

Port Development and Harbor Works Research Group

Transportation Technical Research Institute of the Ministry of Transportation

I. HARBOR HYDRAULIC ENGINEERING DIVISION

Beach Research Section

Principal Researches:

Basic meteorological, oceanographical, hydrological researches

Principal Research Objectives:

Prevention of typhoon disasters; construction and con-Principal Existing Facilities:

servation of fairways through channels, etc.

Model basin with water circulation $(40m \times 50m)$

(Shimonoseki Channel now under experiment)

Estuary Research Section

Principal Researches:

Estuary hydrography, constructions on estuary, waterway hydrography

Principal Research Objectives:

Construction and conservation of contour facilities of an estuary port; construction and conservation of facilities in port canals and navigable rivers

Principal Existing Facilities:

- 1. Water channel with movable slope
- (15m×0.8m×0.6m)
 Water channel with wind blower (15cm wave height)
 - $(22m \times 1.2m \times 1.0m)$
- 3. Model basin with water circulation

 $(20m \times 29m, 150 l/s)$

4. Experimental water channel on density currents

Breakwater Works Research Section

Principal Researches:

Breakwater structures and locations

Principal Research Objectives:

Construction and conservation of contour facilities of general seaports

Principal Existing Facilities:

1. Large-scale experimental wave tank (70cm wave height)

(105m×2.5m×3.0m)
Medium-scale experimental wave tank (20cm wave height)

 $(40 \mathrm{m} \times 2.0 \mathrm{m} \times 4.5 \mathrm{m})$

* Draft Sand Hydraulic Section

Principal Researches:

Draft sand theory; groin structures

Principal Research Objectives:

Measures against draft sand

- Principal Existing Facilities: Basin with draft sand on bed
 - $(50 \times 2m \times 30m)$ (under construction)

* Observations and Surveys Section

Principal Researches:

- Model experiments
- Principal Research Objectives:

Improvement of spot observation and model experiments

Principal Existing Facilities:

- 1. Fan-shaped harbor model basin $(40m \times 1.5m \times 20m)$ Experiment is being done now with Kurihama
- Harbor as the experimental objective 2. Observation tower installed with tidal gauge

II. SOIL MECHANIC DIVISION

Soil Research Section

Principal Researches:

Researches into soil nature and quality

- Principal Research Objectives:
- 1. Measures against sinking ground
- 2. Improvement and utilization of weak and soft ground

Principal Existing Facilities: Experimental room with constant temperature and moisture; various kinds of meters and gauges

Soil Pressure Research Section

Principal Researches:

Soil pressure theories
 Rational designing of structures

Principal Research Objectives:

Construction of such structures as quays, piers, etc. which are affected by soil pressure

- Principal Existing Facilities:
- Soil pressure experimental box with adjustable tidal changes

 $(8m \times 4.5m \times 3m)$

Soil Vibration Research Section

Principal Researches:

- 1. Seismic and vibration theories
- 2. Effects of vibration on structures and ground Principal Research Objectives:
- Measures against earthquake damage; anti-vibration structures

Principal Existing Facilities:

 $2\,$ vibration boxes; Response analyser

* Foundation Research Section

Principal Researches: Trial construction of structure foundations and their experiments Principal Research Objectives:

Development and improvement of piles and other foundations

* Ground Test Section

Principal Researches: Ground test by request Principal Research Objectives: Improvement of ground test methods Principal Existing Facilities: Boring apparatus for thin wall sampler; vibration ground test apparatus

(N.B.: * Denotes Section yet to be established)

THE HARBOURS OF SOUTH AFRICA

offer you every modern facility

General Description

The major harbours are Durban, Cape Town, Port Elizabeth, East London and Walvis Bay, under the control and management of the South African Railways and Harbours Administration, which provides all harbour services except stevedoring on board ship. All of the harbours are modern, wellequipped and highly efficient.

At Table Bay Harbour, Cape Town, there are two enclosed docks for commercial shipping and two graving docks-one of which the "Sturrock" is one of the largest in the world. The depths alongside guays are from 30 to 40 ft. L.W.O.S.T. 102 electric wharfside cranes of 3 to 15 tons and mechanical appliances are available for cargo landing as well as a floating crane of 60 tons. Other facilities include a grain elevator, shipping 1,000 tons per hour, a precooling store of 10,770 tons capacity and 27,000 ft. of quayage with cargo sheds of 8,741,961 cu. ft. Durban Harbour serves the wealthy Witwatersrand area. It has 97 electric wharfside cranes of 3 to 15 tons and one fixed 80 ton, also a floating crane of 25 tons, a grain elevator shipping 1,000 tons per hour, a coaling appliance capable of shipping 4,400 tons per hour and 30,000 ft. of quayage with depths alongside of 30 to 42 ft. L.W.O.S.T. The port has a floating dock of 4,000 ton lift and a graving dock of 1,150 ft. in length.

Port Elizabeth is equipped with 48 electric quayside cranes of 4 to 15 tons and other mechanical handling plant. The port is well situated to serve the Federation of Rhodesia and Nyasaland. This port will probably become the Union's chief mineral export port. The Harbour has 9,240 ft. of quayage with depths alongside ranging from 25 to 36 ft. L.W.O.S.T. East London is a river port and has 37 electric wharfside cranes of 4 to 20 tons and 7,384 ft. quayage.

Walvis Bay Harbour serves South West Africa. With the exception of Durban, most of the ore exports pass through Walvis Bay. The 1,500 feet of quayage is being extended to 2,800 ft. At present this port has 9 cranes of 3 to 7 tons which will be increased by one 15 ton and nine 4 ton cranes.

The Administration has large powerful tugs at all ports, for the berthing of vessels and the rendering of salvage services. All quays are equipped with sheds, and precooling chamber facilities are available. Although the ports are well equipped to handle cargo, large scale improvements are being undertaken to expedite the turn round of shipping. Mechanised cargo handling is being rapidly developed at all ports.

The System Manager at any of these ports will be glad to give you any further information you may require, or write direct to General Manager, South African Railways and Harbours, Johannesburg.



Table Bay Harbour (Cape Town)



Durban



Durban, the main port serving the highly developed industrial area of the Witwatersrand, has a total quayage of 30,259 ft. worked by 97 electric wharf cranes of 3, 4, 10, 15 and 80 tons capacity. Shed accommodation consists of 970,407 equare feet with a capacity of 8,733,633 cubic feet. The pre-cooling store has accommodation for 1,800 shipping tons and the grain elevator has a capacity of 42,000 tons with intake and shipping capacity of 1,000 tons per hour.

Privately owned bulk-oil storage and oil-fuelling facilities with 133 tanks of an aggregate capacity of 403,031 tons are available. There is coal storage for 70,000 tons and the mechnical facilities are capable of shipping an aggregate of 4,400 tons per hour. Six large first class tugs are available equipped with wireless telegraph and telephone and salvage and fire-fighting appliances and one tug also has radar apparatus. There are two pilot tugs equipped with wireless telephones and a second class tug are also available.

Facilities include a graving dock 1,150 feet long served by one 25ton, one 10-ton, one 5-ton and one 3-ton crane, together with a floating dock of 350 feet with a 4,000 tons lifting capacity.

Cargo Shed and Pre-Cooling Store

Harbour improvements which will soon be commenced are estimated to cost about £3,206,000, and will include the construction of two sheds at "L" and "M" berths on the T-jetty which, together with wharf cranes, will cost about £1,-122,250. The shed at "L" berth will be built at the landward end of the jetty and will be a single storey shed with a floor space of 600 ft. by 120 ft. It will be connected with "M" shed at first floor level by means of a shipping gallery which will facilitate the shipping of fruit from both "L" and "M" berths.

The shed at "M" berth will be a three-storey brickfaced building at the outer end of the jetty. The ground floor, with a floorspace of 900 ft. by 160 ft., will consist of an airlock and an engine room with space for cargo stacking. The first floor will be 900 ft. by 150 ft., a quarter of which will accommodate a staff mess, change rooms, various offices and cargo space. The balance will consist of precooling chambers capable of handling approximately 3,000 tons of fruit. This floor will be designed to enable the doubling of the capacity of the pre-cooling chambers at a later stage.

Passenger Terminal

A portion of "M" shed will be used for handling passenger traffic and will incorporate the latest designs based on the terminal at Southampton. The terminal will be provided with refreshment rooms, customs offices, offices for shipping companies, publicity purposes, the Port Captain and administrative staff. Work on this project is expected to be completed in about two year's time.

Ship Repair Facilities

Ship repair facilities will be moved from the T-jetty to the Bay Head where 77 acres have been reclaimed. The work on this project will consist of the construction of a 700 ft. long double faced jetty, deepening of the basin and approaches to a depth of 28 ft. L.W.O.S.T. and the construction of a dolphin berth along the south eastern arm of the basin at a total estimated cost of £250,000.

Other Developments

Further major works in the harbour area include the replacement of the existing wood and iron sheds at "D" and "E" berths with a single shed of 760 ft. by 120 ft. of the latest steel frame design with brick panels at an estimated cost of £216,000. At Maydon Wharf the 2,000 ft. long timber constructed wharfs at berths 1, 2, 3 and 4 are being rebuilt with steel piling in units of 500 ft. to give a depth of 32 ft. 6 in. L.W.O.S.T. at an estimated cost of £400,000.



Table Bay harbour has two enclosed docks for ocean-going ships —the Victoria Basin and the Duncan Dock. Six tugs, of which four are equipped with wireless telegraph, telephone, salvage and fire-fighting equipment and two with radar, are on the establishment of the port.

The port has two graving docks of which the "Sturrock Dock" is one of the largest in the world—it has a length of 1,149 feet with a possible length of 1,212 ft. which can be obtained by placing the caisson in the emergency stop at the entrance. One 50-ton, one ten and two 5-ton electric cranes are available at this dock. The "Robinson Dock" has a length of 500 ft. and is served by one 4-ton electric and one $1\frac{1}{2}$ -ton steam crane.

The harbour has shed and storage accommodation with a floor space of 759,630 square feet and 8,741,961 cubic feet capacity. Present equipment for handling cargo consists of 102 electric cranes with lifting capacities of from three to 15 tons, a floating crane capable of

lifting 60 tons at 80 ft. radius, coal storage sites for 17,000 tons served by two 4-ton cranes and a grain elevator of 30,000 tons storage capacity with 1,000 tons per hour intake and shipping capacity. Table Bay has been selected for experiments in conection with mechanisation of goods handling, by means of fork-lift trucks, pallets and other appliances. Twentythree storage tanks with a capacity of 51,270 tons of petrol and fourteen with a capacity of 24,763 tons of paraffin together with 21 fuel-oil tanks with a capacity of 131,100 tons, all privately owned, handle the discharge and oil-fuelling of all visiting vessels.

The total pre-cooling accommodation of approximately 10,800 tons consists of a store of 4,330 tons capacity at "B" berth, Duncan Dock, from which pre-cooled commodities can be conveyed direct to vessels at this berth, or via an underground tunnel to the adjoining "A" berth. Fruit may also be shipped at Nos. 3 and 4 berths Victoria Basin, via an overhead



East London



Port Elizabeth

gantry. Accommodation for the cold storage of 2,690 tons of perishable cargo is available at "A" berth and at the South Arm there are facilities for the pre-cooling of a further 3,780 tons. During 1956 these stores handled 293,505 tons of a total of 524,821 tons exported from South Africa, representing a tonnage greater than the total tonnage exported through other Union Harbours.

As a result of a continued rise in the tonnage of fruit exported, including deciduous and citrus, from Table Bay during the past few years pre-cooling facilities at this port are being extended. Work was started on the building of a new pre-cooling store at "D" berth at an estimated cost of £2,000,000. During the off-season, portion of the store will be used as a cargo shed.

In addition to the new building at "D" berth the existing pre-cooling facilities at the South Arm are being enlarged at an estimated cost of $\pounds 137,000$ which when completed will make the total capacity available at this berth approximately 6,780 tons. East London, the only river port of the Union, has a quayage of 7,384 ft. served by 37 electric wharf cranes of 3, 4, 5, 10, 15 and 20 tons lifting capacity.

EAST LONDON

Sheds of 263,533 square feet capable of accommodating 4,058,785 cubic feet of cargo and 9 acres of open storage ground for rough goods are available. The pre-cooling stores can accommodate 2,400 shipping tons of citrus and deciduous fruit and the bulk-oil storage facilities consist of 33 privately owned tanks with a capacity of 98,373 tons of petrol, paraffin and fuel-oil. There are nine bunker points for delivery of fueloil to vessels.

Facilities include the Princess Elizabeth Graving Dock with a length of 633½ feet served by two 15-ton and one 5-ton electric cranes together with a slipway of 1,000 tons displacement capacity. This port has three powerful tugs and two pilot tugs. One tug is equipped with radar, but all three have fire-fighting appliances, direction finding apparatus, wireless telegraph and telephone and the pilot tugs are equipped with wireless telephone.

In August 1956 work was commenced on improvements to East London Harbour, including the building of a new tanker berth and the widening of the turning basin and an amount of $\pounds 2,305,000$ has been sanctioned for this purpose.

The revised project provides for a turning basin 1,200 ft. wide, 1,800 ft. long and 35 ft. deep and a tanker berth 850 ft. long which will accommodate one oil tanker at a time.

The work on the turning basin will be done in two stages. Stage one will be the widening of the basin to approximately 1,070 ft., and completion is scheduled for the end of 1958. Stage two will be the widening of the basin to the full width of 1,200 ft. and should be completed by the end of 1960.



Post Elizabeth, has a quayage of 8,600 ft. with separate accommodation for large tankers, and can accommodate 5,116,700 cubic feet of cargo in sheds with a floor space of 457,000 square feet with an outside cargo stacking area, equipped with cranes of approximately 141,620 square feet. Quayside pre-cooling facilities for approximately 4,500 shipping tons are available and the privately owned bulk-oil storage tanks have a capacity of 91,337 tons of petrol, paraffin and fuel-oil. Forty-eight electric wharf cranes with lifting capacities of from 4 to 15 tons are available. Two first class tugs equipped with salvage and firefighting appliances, wireless telegraph and telephone and one pilot tug with salvage and fire-fighting appliances and wireless telephone are part of the equipment of the port.

It is anticipated Port Elizabeth will become the Union's principal port for the export of ores and minerals by means of the latest type of mechanical handling appliances.

This harbour is linked by efficient rail services to all parts of the Union and the port is a most convenient point of entry for traffic destined for the Federation of Rhodesia and Nyasaland. The main railway route to the north is direct to Johannesburg via Bloemfontein, to Rhodesa via Kimberley and Mafeking and is now one of the easiest routes from the point of view of gradient and curvature from the coast to the interior.

The approved programme of improvements on which work is now in progress will add almost three million pounds to the capital invested in the port.

WALVIS BAY

per hour.

Walvis Bay Harbour serves South-West Africa, and has a quayage of 1,500 ft. served by six 4-ton, two 3-ton and one 7-ton electric wharf cranes and has storage accommodation of 60,000 square feet on covered floor space, 58,000 square feet on uncovered platforms and 79,000 square feet for ores on uncovered platforms.

Privately owned bulk-oil storage facilities can accommodate 20,000 tons of petrol, gas oil, paraffin and light diesel oil in twelve tanks, while three fuel-oil tanks of aggregate capacity of 4,000 tons are available. Ships can be supplied with coal bunkers by means of a crane at the rate of 25 tons per hour. Fresh water can be supplied to vessels at the rate of 15 tons The port has one first class tug and one pilot tug both of which are fitted with radar, wireless telegraph and telephone and salvage and fire-fighting appliances.

Facilities at Walvis Bay are being improved by the extension of the existing quay from 1,500 ft. to a length of 2,800 ft. which will provide berthage for two additional large vessels.

The new quay will be provided with a cargo shed (400 ft. by 100 ft.), one 15-ton and nine 4-ton cranes, one storage bin for ores, two mechanical shovels and 100 tipping buckets. It is expected the work will be completed towards the end of 1960.

ing the period from January to Decem-

ber 1957, there were thirty-six con-

tracts, which contained 15 officers and

115 ratings, the details of which were:

Editor's Note

It is gratifying that thanks to the cooperation of many of our members, we are now sending out the present issue to all of our members throughout the world. Some of the articles and stories included in it were furnished to us last year, but owing to the editorial deadline and limited space, we were obliged to withhold their publication in the last December, 1957, issue. Since then, we have received from their contributors revised versions or more recent figures to keep all the information up-to-date. We wish to take this opportunity to deeply thank them for this cooperation and the trouble so generously taken for us.

Japanese Seaman Aboard Foreign Ships

According to the statistics prepared by the Ministry of Transportation regarding the Japanese seamen who were employed by foreign vessels dur-

Officers deck engine radio pursers	3 17 3 2	Ratings	deck engine purser's depart- ment	41 51 23
total Shipowners included 33 Liberi	25 ans, 2	Panamanians	total	115

On the heels of the present issue, however, we have to set about the preparation for the next issue. With apologies and gratitudes, let the greedy editor ask our members for the articles, photographs and what not, for the next June issue. The dealine is May 10.

Biggest Japanese Emigrant Ship Launched

The emigrant ship Argentina Maru (10,600 tons gross) for the O.S.K. Line which was under construction at the Kobe shipyard of the Mitsubishi Heavy Industries, Reorganised was launched in.



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BULK WINE RUSHES by the thousands of gallons through special pipelines into wine tanks of S.S. Angelo Petri, America's first specially-constructed wine vessel. Hosepipes from ship connect to stationary pipes leading from Port of Stockton's bulk wine storage facility, which can hold 2,500,000 gallons.

3,000 H.P. SUCTION DREDGER, the biggest of the kind to have ever been constructed in Japan, was recently completed by the Ishikawajima Shipyard for the Mizuno-Gumi Construction Co., the owners. It will soon be employed for the reclamation work in the Tobata area for the Yawata Iron & Steel Co.





Central Secretariat of the International Association of Ports and Harbors SHIPS OF 30 NATIONS visit Los Angeles Harbor regularly. Seen here, the stern of a Japanese vessel and the bow of a European freighter frame a view of one of the Prince Line cargo carriers.

Rm. 715-A, N.Y.K. Bldg., 20, Marunouchi 2, Chiyoda-ku, Tokyo, Japan