PORTS and HARBORS

MARCH 1961 Vol. 6 No. 1

PORT OF YOKOHAMA

THE INTERNATIONAL ASSOCIATION OF PORTS AND HARBORS

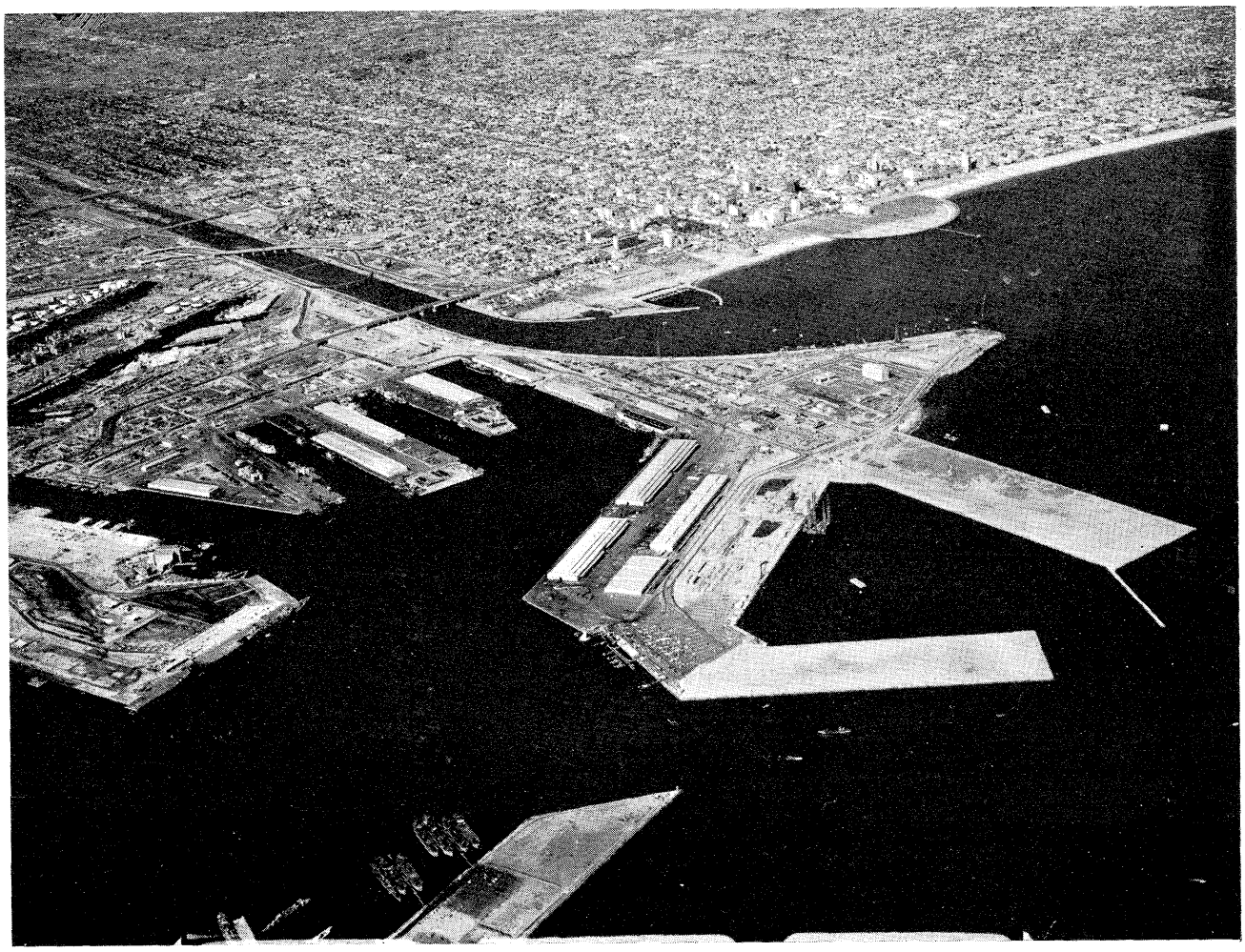
Introducing The Crests of Co-Member Ports

(*Each Issue One Port*)

THE PORT OF LONG BEACH

America's Most Modern Port

The Port of Long Beach celebrates this year the golden jubilee in many colorful events.



Aerial of Long Beach horbor—"America's Most Modern Port." New piers in the foreground are piers F and G. In the background is the City of Long Beach.

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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Published by

The Central Secretariat of the International Association of Ports and Harbors

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(Director and Alternate Director for Brazil are yet to be elected.)

From The Central Secretariat

By Gaku Matsumoto
Chief of the Central Secretariat
I. A. P. H.

We have the pleasure to report important Association affairs as well as those which have been undertaken by the Central Secretariat during the past quarter of the year, in accordance with the decisions of the Executive Committee meeting of Honolulu, Hawaii, May 19 through 20, 1960, which have been approved by the Board of Directors meeting by correspondence.

* * *

Publication of "IAPH International News Letter"

For the purpose of exchange of information on ports and related industries between Association members and disseminating among the ports of the world useful information relative to port activities, port facilities, international waterborne trade, related national and international organizations, etc., "IAPH International News Letter" a monthly publication, was started, beginning January, 1961. This news letter covers news and views taken from various sources, on the basis of those supplied by our members.

* * *

Second Vice President Resigns

Pursuant to his promotion to Assistant General Manager, the Manila Railroad Co., Philippines, in February, 1961, Md. Francisco A. Medrano resigned from the post of Second Vice President and Philippine Alternate Director of this Association. He has been succeeded by Mr. Francisco H. Calinawan, newly appointed General Manager, the Manila Port Service, as Philippine Alternate Director, while the Second Vice Presidency being left vacant.

* * *

Election of New Directors

(1) Australia

Mr. H. C. Meyer, Australian Alternate Director, has resigned from the post of General Manager, The South Australian Harbors Board, Adelaide, retaining the office of Commissioner. He remains as the Australian Alternate Director.

(2) Ceylon

The Port (Cargo) Corporation, Colombo, Ceylon, reported its election of the natinal Director and Alternate Director as follows:

Director—Mr. C. Mylvaganam, General Manager Port (Cargo) Corporation, Colombo

Alternate Director—Mr. V. P. Vittachi, Assistant General Manager, Port (Cargo) Corporation, Colombo

(3) Burma

The Board of Management for the Port of Rangoon, Burma, has reported the election of the Burmese National Director and Alternate Director as follows:

Director—Mr. Saw Sein U. Chairman, Board of Management for the Port of Rangoon

Alternate Director—Mr. U Win Pe. Commissioner, Board of Management for the Port of Rangoon

(4) Philippines

Pursuant to the resignation of Mr. Francisco A. Medrano, Philippine Alternate Director, Mr. Francisco H. Calinawan, new General Manager, The Manila Port Service, has succeeded him as Alternate Director of the Philippines.

* * *

Changes in Executive Committee Members

To fill up the vacancies left by Col. Howard W. Quinn, former Executive Director, Port of Callao Authority, Peru, and Mr. Francisco A. Medrano, former General Manager, Manila Port Service, their successors, Comm. Enrique B. Camino, Technical Director, Port of Callao Authority, and Mr. Francisco H. Calinawan, General Manager, Manila Port Service, have been appointed by our President members of the Executive Committee. o

I. A. P. H. Membership
(As of March, 1961)

Countries	Regular	Unit(s)	Supporting	Unit(s)	Total	Unit(s)
Australia	—		3	(3)	3	(3)
Belgium	—		1	(1)	1	(1)
Brazil	1	(1)	—		1	(1)
Burma	1	(1)	—		1	(1)
Canada	2	(2)	10	(10)	12	(12)
Ceylon	1	(1)	—		1	(1)
China	4	(4)	3	(3)	7	(7)
France	—		1	(1)	1	(1)
Israel	1	(1)	—		1	(1)
Japan	28	(67)	17	(22)	45	(89)
Liberia	1	(1)	—		1	(1)
Mexico	—		4	(4)	4	(4)
Pakistan	1	(1)	—		1	(1)
Peru	1	(1)	—		1	(1)
Philippines	1	(1)	—		1	(1)
Sweden	1	(1)	—		1	(1)
Thailand	1	(2)	—		1	(2)
Turkey	—		1	(1)	1	(1)
U.S.A.	8	(16)	4	(5)	12	(21)
Venezuela	1	(1)	—		1	(1)
Viet-Nam	1	(1)	—		1	(1)
Total	**54**	**(102)**	**44**	**(50)**	**98**	**(152)**

Appointment of Standing Committees

In accordance with the lists of candidates recommended by the Directors of the member countries, our President nominated 9 Permanent and 3 Alternate Members of No. 1 Standing Committee (on Port Administration and Utilization) and 8 Permanent and 3 Alternate Members of No. 111 Standing Committee (on Cooperation with Other International Organizations) at the Executive Committee meeting of May, 1960, at Honolulu, Hawaii. Accordingly, the Central Secretariat has conveyed these nominations to the persons concerned, who have consented to serve on the Committees namd. The Standing Committees and their members are given below.

* * *

Chairmen of Standing Committees Appointed

Following the nomination of their members, the following two gentlemen were appointed by our President Chairmen of the two Standing Committees, as follows:

Mr. Charles L. Vickers, General Manager, Port of Long Beach, U.S.A....No. 1 Standing Committee

Mr. Mineo Nakamichi, Director, Port and Harbor Bureau, Ministry of Transportation, Japan ...No. 111 Standing Committee

* * *

Permanent Council Meeting

The Permanent Council was called in meeting on March 29, 1961, in Tokyo, to audit the Association accounts for 1960 and deliberate on the working budget for 1961. The Council, attended by Mr. Gaku Matsumoto, ex-officio Chairman, and the three members, Mr. Royal S. Wintemute, Mr. Hirisave Ramia and Mr. H. D. Lenhardt, approved the settlement of accounts for 1960 and the working budget for 1961. Also, report was made by the Chief of the Central Secretariat about Association affairs and works, as given in the agenda:

Agenda for Permanent Council Meeting

March 29, 1961

1. Candidates for a Vacant Councillor.
2. Report on Association's affairs since the last meeting (October 7, 1960).
3. Third Triennial Conference—Site and Agenda.
4. Cooperation to holding a training seminar on port problems in Tokyo, October1~30, 1961, on the initiative and at the proposition of this Association, in accordance with the Technical Cooperation Scheme of the Colombo Plan.
   This seminar will be attended by the port officials (about 20 men) from the member countries of the Colombo Plan.
5. Proposed holding of Executive Committee (in April).
6. Statement of Accounts for 1960 and Budget for 1961.
7. New business.

NO. I STANDING COMMITTEE

(on Port Administration & Utilization)

Permanent Members (9)

Mr. Carlos Castillo	Chief, Harbor Division Manila Port Service, Philippines
Capt. Salvadores Yenko	Marine Superintendent Manila Port Service, Philippines
Mr. Dudley W. Frost	Executive Director Port of Oakland, U.S.A.
Mr. Charles L. Vickers	General Manager Port of Long Beach, U.S.A.
Mr. Hu King-fin	Chief, Wharf & Warehouse Dept. Keelung Harbor Bureau, Taiwan Rep. of China
Mr. Jan Hung-Kwei	Harbor Master Kaohsiung Harbor Bureau, Taiwan Rep. of China
Mr. Luis Rdolfo Pinto Salinas	Chief, Technic & Statistic Div. General Administration Autoridad Portuaria del Callao, Peru
Mr. Eiji Itabashi	Director, Port & Harbor Bureau City of Yokohama, Japan
Mr. Tomokichi Nishibe	Director-General, Port & Harbor General Bureau, City of Kobe, Japan

Alternate Members (3)

Mr. Itsujiro Iida	Director, Port & Harbor Bureau Tokyo Metropolis, Japan
Mr. Heiji Kan	Chief Engineer, Port & Harbor Bureau, Tokyo Metropolis, Japan
Mr. Kozo Yomoda	Asst. Director-General Port & Harbor General Bureau City of Kobe, Japan

NO. III STANDING COMMITTEE

(on Cooperation with Other International Organizations)

Permanent Members (8)

Mr. Chang Shao-chow	Deputy Director Keelung Harbor Bureau, Taiwan Rep. of China
Mr. Tang Shing-yi	Manager, Business Dept. China Merchants Steam Navigation Co., Ltd., Taipei, Taiwan, Rep. of China
Mr. Walfrido A. Lin	Office Manager Manila Port Service, Philippines
Mr. Ichizo Maeda	Deputy Administrator Nagoya Port Authority, Japan
Mr. Mineo Nakamichi	Director, Port & Harbor Bureau Ministry of Transportation, Tokyo, Japan
Mr. Josef Moneta	Head, Research Section Port of Haifa Authority, Israel
Mr. Ben Nutter	Chief Engineer & Asst. Executive Director, Port of Oakland, U.S.A.
Mr. Thomas J. Thorley	Asst. General Manager Port of Long Beach, U.S.A.

Alternate Members (3)

Mr. Ken Nishiyama	Chief, General Dept. Nagoya Port Authority, Japan
Mr. Kyoshiro Okada	Chief, Port Management Sec. Port & Harbor Bureau, Ministry of Transportation, Tokyo, Japan
Mr. Nobuo Tsuchihashi	Asst. Director Port & Harbor Bureau, City of Yokohama, Japan

Visitors

On January 25, Dr. Jose Arnaldo Puigbo, General Administrator, National Port Service, Ministry of Finance, Venezuela, who is the Alternate Director for Venezuela, visited the Central Secretariat, during his visit to Tokyo on official business.

On March 15, the Central Secretariat had the visit of our First Vice President, Gen. Huang Jen Ling, Chairman, Board of Directors, China Merchants Steam Navigation Co., Ltd., China, who was visiting Japan on business.

* * *

New Publication

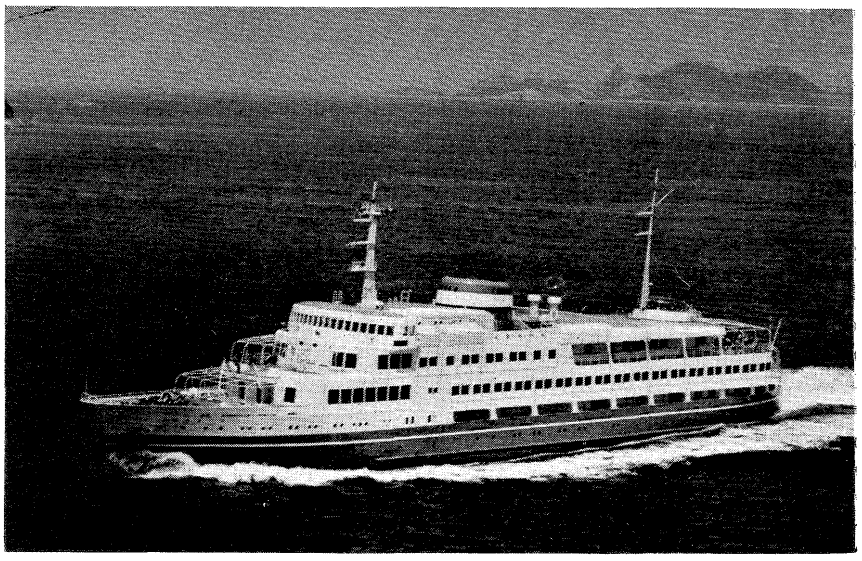
The Japan Dredger Technical Society has issued a 100 page book, introducing the principal dredgers and special work vessels constructed in postwar Japan, entitled "Dredgers of Japan 1961." Each page is for the introduction of the product of each of the Society members, with photographic illustrations and particulars of the vessel.

This excellent publication is available free for those who are concerned in other countries on application to The Japan Dredger Technical Society, 3, 6-chome Yaesu, Chuo-ku, Tokyo, Japan.

* * *

Largest Dredger Launched

The Suez, largest dredger ever built in Japan was launched on January 31 at Aioi Shipyard of Ishikawajima-Harima Heavy Industries, Ltd. Ordered by Mizuno Gumi for the dredging work on the Suez Canal, the ship has nice living quarters for 50 workers at the same level as large ocean-going vessels. Her maximum dredging depth is 18 meters and dredging volume is 657,300 cubic meters. After completion late in February, she will be taken in tour to the Suez Canal.



The world-renowned Inland Sea of Japan has recently added to its many attractions the newly constructed 2,928 ton de luxe tourist ship "Kurenai Maru", which plies between Kobe, Osaka, Takamasu and Beppu on the sea.

Port of Los Angeles and Southern California

Developments at the Port of Los Angeles during the last fiscal year significantly increased the scope of Southern California's future.

This was revealed by Bernard J. Caughlin, general manager of the Port of Los Angeles, in an article of the port's just published annual report for the last fiscal year.

Caughlin cited as prominent among these developments: the dedication of a new general cargo terminal; building the first marine grain terminal; partial completion of a dock for handling containerized cargo exclusively; and announcement that during the next five years the port will spend $36,690,000 on new facilities.

"The year's all-time high in revenues and general cargo tonnage afforded a statistical framework on which to build the shape of things to come," he said.

Gross revenues of $8,971,359, he reported, were almost $1 million above the preceding year's earnings. A net income of $3,903,900, after provision for depreciation, was more than $1 million better than the preceding fiscal year. And the equity of the City of Los Angeles in its port increased from $106,439,468 to $109,690,202.

General cargo tonnage hit 3,919,770 tons—an increase of 5.61 percent over fiscal '59, according to Caughlin. Total commerce rose 5.67 percent to 24,620,397 tons. (An analysis of a statistical breakdown of commodities by broad trades reveals that bulk petroleum and bunkers accounted for almost 81 percent of the total cargo.)

Big contributors to a 1,402,366-ton rise in imports were steel mill products and pipe and tubing with the former soaring 92 percent and the latter 82 percent. Other import gains in fiscal '60 were scored by molasses, bananas, copra, steel wire and manufactures, veneer and plywood, and automobiles. Vegetable fibers and manufactures bumped window glass from the port's list of the 10 most important general cargo imports. Crude rubber receipts declined.

On the export tally sheet, Caughlin noted, two commodities made spectacular gains — cotton shipments nearly tripling and scrap metal more than doubling, with Japan taking the largest share of both. Citrus fruits, infusorial earth, and animal fats and greases also increased and old newspapers and magazines moved up to replace canned fish on the top-ten list. The remaining four—borax, industrial chemicals, machinery and parts, and steel mill products —Borax, industria lchemicals, decreased—over the preceding year.

Turning to developments in fiscal '60, Caughlin listed them in this order:

- $4,000,000 general cargo terminal, built by the port and assigned to General Steamship Corp., agents for eight steamship lines, was opened on January 28. The 1,200 feet long concrete wharf for berthing two ships has since been extended 500 feet to accommodate a third ship.
- The 260-foot portion of the special dock for container shipments, which was undamaged by the March 17 fire, has been operated by Matson Navigation since August on a restricted basis. Full operation is scheduled for the coming summer.
- The Los Angeles Harbor Grain Terminal was nearing completion at the end of the fiscal year. Its high-speed equipment, geared to load 17,000 bushels or unload 10,200 bushels an hour, went into operation on Aug. 8.
- Work progressed on the huge passenger-cargo terminal on Main Channel which will be assigned to American President Lines. Construction of the wharf and foundation of the main building was well along, with completion of the entire $15,000,000 project scheduled for late 1962.

"Last February," reminded Caughlin, "the Board of Harbor Commissioners approved a comprehensive development plan under which 15 new berths and five general cargo terminals will be added to the port's facilities during the next five years. The large-scale program, estimated to cost $36,690,000 will also include modernization of 13 existing berths and rehabilitation of various other installations.

"All this building for the future of a great and growing Southland will be done without the use of tax-derived funds. We anticipate that $28,000,000 will come from the sale of revenue bonds which will be repaid entirely from the port's earnings, as will the balance of the costs of the five-year plan."

Looking into the future, Caughlin said: "Tomorrow's harbor will be a larger and better one than we have today. Ships of advanced design now only dreamed of will call here with cargoes now unknown. But they will also discharge on our wharves goods identical with those stowed in the holds of early sailing ship—the eternal cargoes made manifest by human need."

* * *

Yokohama and Kawasaki Ports Traffic in 1960

According to the Yokohama Customs House, vessels arriving at the two ports of Yokohama and Kawasaki in 1960 were:

Port	Nationality	No. of vessels
Yokohama	Japan	2,722
"	United States	884
"	Britain	541
"	Liberia	283
"	Norway	273
"	Greece	209
"	Denmark	170
"	Netherlands	148
"	Panama	126
"	Sweden	93
"	Others	515
Kawasaki	Japan	504
"	Liberia	134
"	Norway	105
"	Britain	88
"	Greece	67
"	Panama	44
"	United States	28
"	Denmark	18
"	Sweden	17
"	Soviet Union	17
"	Formosa	16
"	Others	63

PORT OF LONG BEACH CELEBRATES GOLDEN JUBILEE

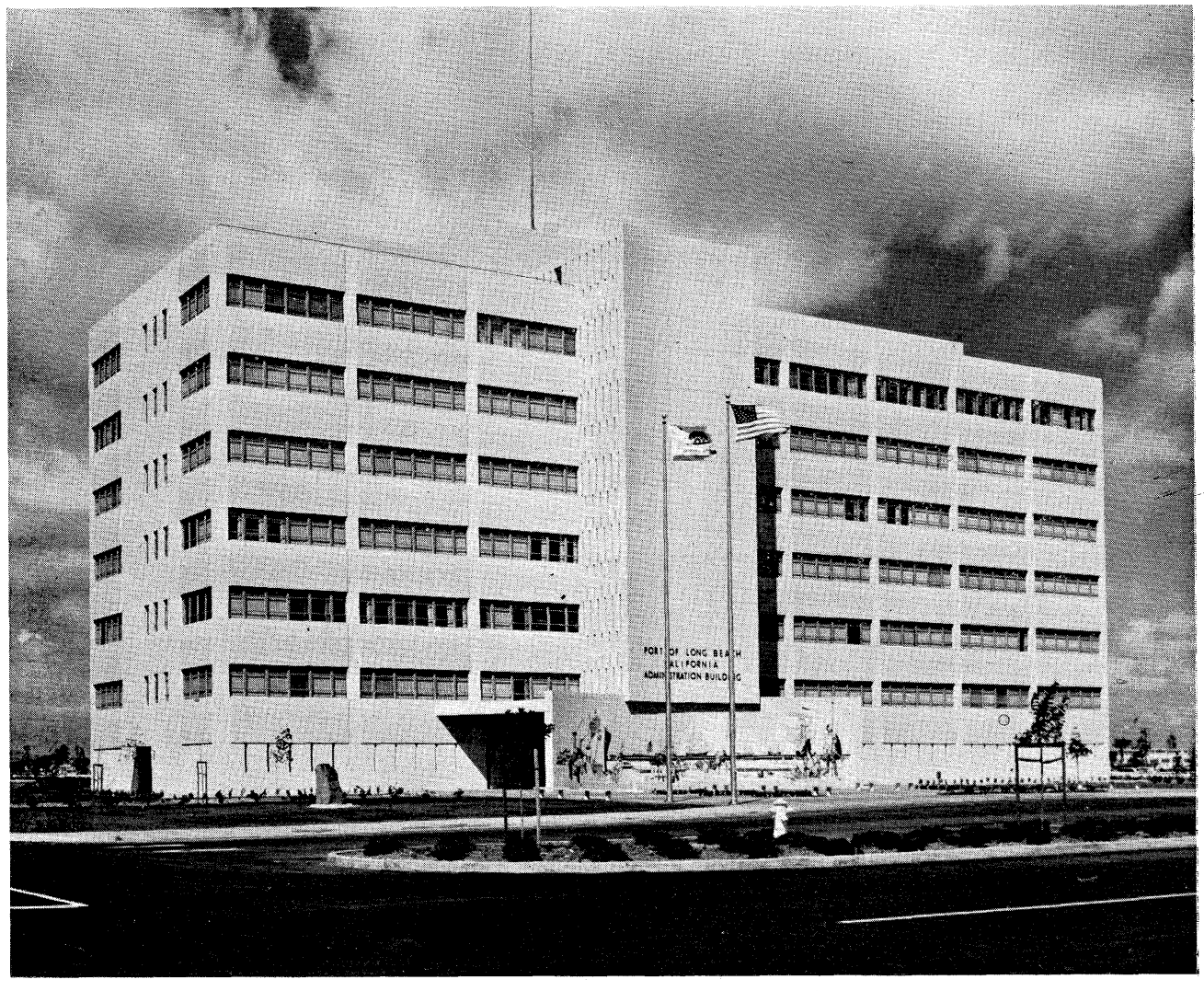
Fifty Years' Progress Reviewed

The first municipal bond issue for the purposes of harbor improvement and the development of shipping in Long Beach was approved by the people in 1909. The amount of the issue was $245,000 and provided for the purchase of water frontage in the inner harbor and the construction of Pier 1, which was to be used as a municipal wharf. The formal opening of the wharf took place June 24, 1911. That month marked the beginning of the municipal port with the arrival of the S.S. IAQUA, carrying 280,000 feet of redwood from Eureka, California, on June 2, and the docking of the 250-foot steamer SANTA BARBARA, which called here with 350,000 feet of Oregon pine.

It was noted that the dedication of the new facilities was well attended by the citizens of Long Beach, who formed a long procession headed by the municipal band and walked or rode from downtown Long Beach to the new pier.

Another steamer, the SANTA CLARA, called here on January 26, 1912, proposing to make Long Beach a port of call on its regular sailings between Santa Barbara and San Diego. The city council had promised to make arrangements for providing a water supply for the ship, but, in the excitement this detail was overlooked; so, after the Santa Clara had docked, the city fire department was called out, a line of hose was laid and water was pumped to the ship.

Meanwhile, port development had been hindered by floods which raged down the Los Angeles River bed and through the harbor, leaving dredged areas filled with sand and silt. In 1913-14, so destructive were these floods that many forecast the end of port growth.



New administration building of the Port of Long Beach, occupied by the staff in February, 1960. The 120,000 square foot structure is located on Pier A and is noteworthy for its 74 foot ceramic mural depicting the history of the Port.

The harbor's future was saved, however, when the Los Angeles County Flood Control District was established and construction began on a silt diversion channel. The Federal government took up work on this project in 1919 and completed it in 1923. As a result, drainage waters from the north are brought into the ocean at a point east of the harbor and deflected eastward, dispersing and settling in the outer harbor.

Because of the floods, however, the Dock and Terminal Company handed over the dredging problem to the City of Long Beach in 1914, after which the voters authorized a bond issue of $300,000 to complete the dredging operations.

In 1917, the City of Long Beach created the first Board of Harbor Commissioners. Since that time the affairs of the port have been handled largely by its successive Boards, although it was not until 1925 that a five-man harbor commission was established as an entity, independent of already existing City departments.

On May 8, 1924, the citizens of Long Beach voted nearly 18 to 1 in favor of a $5,000,000 bond issue for harbor development. As the result of that bond issue, improvement of the existing harbor and preliminary development of the outer harbor was begun as a major milestone in the port's history.

The work included a breakwater extending 7,140 feet into the ocean from a point just west of the flood control channel which, following its completion in 1928, furnished a quiet-water ship anchorage.

Two flanking moles were also constructed to protect the harbor entrance, the easterly mole totaling 3,196 feet in length and the westerly mole 3,500 feet. The project called for a total of approximately 1,737,000 tons of granite.

Purpose of the moles was to divert movement of sand which would otherwise tend to refill the entrance channel. Also, the project was planned to serve a double function in later years.

With a steel sheet pile retaining wall or bulkhead constructed some distance from and parallel to the rock structures, the space between could be filled with dredged material, thus providing dockage facilities. This was the start of modern development in the Long Beach outer harbor.

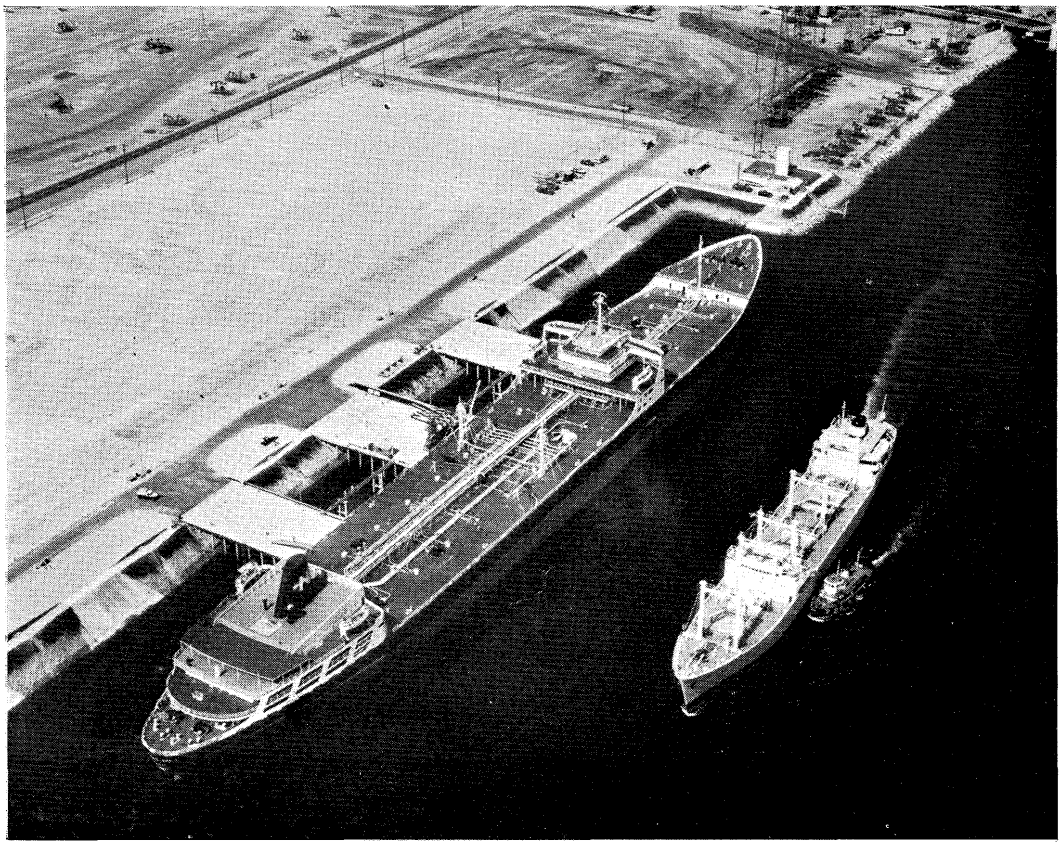
In 1928, voters approved a $2,700,000 bond issue for construction of additional piers, wharves and other terminal facilities. Work commenced immediately on reconstruction of Pier 1 in the inner harbor, then known as the Municipal Wharf.

Two modern transit sheds, completed in 1930 and 1935, were also to be constructed on the pier and the terminal was to be served by a municipally-owned rail line constructed with switching facilities connected directly to the Pacific Electric, Southern Pacific and the Union Pacific Railway lines.

Under the same bond issue, construction was begun in 1930 at Pier A, Berths 1, 2 and 3, and Pier B, Berths 11, 12, 12 A and 18, in what was then designated as the outer harbor. This gave a total berthage of 3,500 feet, so designed as to accommodate five large vessels at one time.

These piers were in the lee of the Long Beach breakwater and constituted the initial step in dockage facilities for a municipally-owned outer harbor.

During the 1928-29 fiscal year, 2,000,000 tons of cargo moved through the port, despite the fact that the port's only municipal transit shed was a wood frame structure, 60 by 10 feet, on the municipal wharf. Cargoes consisted mostly of pipe, case oil, steel, lumber and other products not needing covered storage.



First dockside unloading of a supertanker in the United States was accomplished at the Port of Long Beach when the Richfield Oil Corporation's new terminal —first of its kind in the Western Hemisphere — was dedicated March 7. The PRINCESS SOPHIE discharged dockside 506,000 barrels of crude oil in a little over 24 hours. New terminal, costing $2,843,000, has a chicksan unit, a frontage at the pierhead line of 1225 feet. Water depth dockside at MLLW is 52 feet. With an overall length of 859 feet, the 80,000-ton tanker has a service speed of 17 knots.

Between Piers A and B, landing facilities were constructed for use of the United States Navy representing an investment in excess of $100,000. This facility provided accommodations for the men of the Pacific Fleet and brought into Long Beach many millions of dollars in payrolls that have been reflected in almost every form of community activity.

Prior to 1930, all financial expenditures necessary for development of the harbor had been borne solely by the city or by private interests. However, the Federal River and Harbor Act of July 3, 1930, authorized construction by the Federal government of a 12,500-foot extension to the San Pedro breakwater to a point south of the Long Beach outer harbor construction.

This project, finished in 1937, provided additional protection for the harbor, permitted ultimate development of Terminal Island's south shore and increased deep water area available for anchorage of commercial and Naval vessels.

As a matter of historic interest, the first vessel to dock in the outer harbor was the steamer JACOX, which discharged a cargo of lumber on June 17, 1931, from the Pacific Northwest at Pier A. The pier, at this stage of development, had no transit shed and was 1,684 feet long and 352.5 feet wide.

With the improvement of the harbor under way, industry was attracted to the area. Within a period of about ten years prior to 1936, Richfield Oil Corporation, J. H. Baxter Co., Standard Gypsum Co., Rio Grande Oil Co., Ford Motor Co., Monarch Oil Co., Spencer Kellogg Co., Pacific Meal and Oil Co., and the Procter & Gamble Manufacturing Co., established large plants and marine terminals in the port. These installations represented initial investments of more than $30,000,000.

For the next few years, lack of funds seriously hampered further expansion of the harbor. However, several projects were accomplished with the aid of the Federal government's Work Projects Administration.

PORT OF LONG BEACH AVAILABLE FACILITIES

1. The PORT OF LONG BEACH is located in the eastern part of San Pedro Bay, latitude 30°45′ N. Longitude 118°12′ W.

2. AUTHORITY:
The Board of Harbor Commissioners, City of Long Beach, California is the governing body of the Port of Long Beach and provides rules and regulations for the operation of all municipal port facilities.

3. DEVELOPED WHARVES AND BULKHEADS:
There are 53,300 lineal feet of developed wharves and bulkheads suitable for berthing:
32,613 lineal feet municipally-owned;
5,217 lineal feet privately owned; and
15,470 lineal feet U.S. Government facilities.

4. MUNICIPAL AND PRIVATE BERTHS:
There are 33 municipal berths and 6 private berths capable of handling seagoing vessels, both passenger and cargo.

5. RAILROAD TRACKS:
There are 44.6 miles of railroad tracks in the Port area.

6. GRAVING DOCKS AND DRY DOCKS:
There are 3 large-capacity graving docks located at the Navy base. These should not be confused with numerous smaller dry docks located within the Port area.

7. SHIPS ARRIVALS:
There were 1668 ships arrivals, cargo and passenger, and 80 Navy ships; a total of 1748 ships that used the Port of Long Beach facilities during the fiscal year.
Of this number, 874 were of foreign register.

8. TONNAGE OF CARGO HANDLED DURING FISCAL YEAR:
10,285,867.99 Short Tons, with an estimated value of $756,154,107.62.

9. STEAMSHIP LINES:
There are 65 steamship lines serving the Port of Long Beach.

10. TRANSIT SHEDS AND WAREHOUSES:
There are 10 transit sheds and 6 general warehouses available. One additional transit shed is under remodernization.

11. SPECIAL FACILITIES—municipally-owned:
Conveyor belt bulkloading equipment with a capacity up to 500 tons per hour and three 35-ton capacity wharf cranes are available.

12. SPECIAL FACILITIES—privately-owned:
Barge: cranes available and owned by Smith-Rice Derrick Barges, Inc.:
One 45-ton;
One 50-ton;
One 75-ton;
One 110-tons;
One 125-ton;
One 175-ton;
One 250-ton, with revolving derrick boom at 100-feet radius, 800 tons at 50-feet radius; with sheer legs.

13. NAVIGATIONAL AIDS:
Port radar system to permit ships to navigate during foggy weather or periods of low visibility.

14. COST OF EXISTING FACILITIES EXCLUSIVE OF LAND AND OIL:
Approximately $64,778,321.73.

15. DEPTH OF HARBOR CHANNELS:
40-51 feet at mean low water.

16. NEW CONSTRUCTION IN PROGRESS:
Pier E—Berths Nos. 125, 126 and 127
Pier E—Berth No. 118, a bulk oil terminal.
Pier A—Berths Nos. 210-211, a grain terminal, of 810,000 bushel capacity and loading rate of 1300 tons/hour.
Pier F—Two new berths, Nos. 212 and 213.
Pier G—Four new berths, Nos. 214, 215, 216 and 217.

A second transit shed was completed on Pier 1, and Pico Ave. was extended to serve Pier A. The port joined with WPA to finance a concrete and steel passenger and freight terminal at Pier A in addition to construction of a 560-foot wharf and other improvements on Pier B at a total cost of $625,903, beginning in 1937.

In 1936, oil was discovered in the harbor area, at a point just west of the city limits and north of Cerritos Channel, by General Petroleum Corporation. On March 8, 1938, the first Harbor Department well, produced by Westgate-Greenland Oil Co., was brought in to begin the flow of riches which was to create problems for the port along with wealth.

Long Beach Oil Development Co. became the city's major oil operator on March 15, 1939. By early 1943, LBOD's drilling program encompassed 126 harbor wells producing 17,000 barrels a day, and municipal revenue from harbor oil development passed the $10,000,000 per year mark.

As oil revenues began accumulating in early 1939, the mounting income provided impetus for a surge of progress through the port.

During the year, the entire area between Santa Clara Ave. on the east, the entrance channel to the inner harbor on the west, Seaside Blvd. on the north, and the ocean on the south, was filled by hydraulic dredging from outer harbor channels, the turning basin and slips. Ground was created for the equivalent of nine city blocks of open area south of Seaside Blvd. The first Pier A transit shed, 120 feet by 992 feet, was completed also in 1939, together with track and pavement improvements to serve the facility.

The year saw also improvement of facilities for lumber carriers. A wharf designed primarily to handle mechanically the loading of bulk cargo was built.

In 1940, a 6,000-foot continuation of the middle breakwater was begun, a $71,000, two-story harbor administration building was constructed, and the United States Navy obtained more than 100 acres of land on Terminal Island from the port for $1 as a site for a new Naval Base. Port authorities retained the right to extract petroleum from beneath the site.

Presaging the flood of ships which were to be built here during World War II, the S. S. CAPE MENDOCINO, first merchant ship constructed in Southern California since World War I, was launched at Consolidated Steel Corp. shipyard in Long Beach Harbor.

During the war, the burgeoning demands of military shipments stretched the port's capacities to their limit. An accelerated development program was begun, resulting in construction of a $400,000 access road and temporary bridge over the Cerritos Channel, building of a 607-foot extension costing $204,800 to Pier D, which was leased to the government, construction of Pier 2 in the inner harbor, creation of more than 100 acres of new land, construction of Victory Pier as a $3,000,000 extension of Pier A, and other projects.

The new Terminal Island Naval Base was commissioned September 1, 1942, with the shipyard activated the following year. A pontoon bridge was built across the inner harbor entrance channel. Work on the final 13,350-foot leg of the Federal breakwater, begun in 1941, was halted in 1943 because of a war-caused shortage of materials and was not finished until after the war.

Following the end of hostilities, the mushrooming growth of the port continued. Clear-span transit sheds went up along Pier A, filling operations were completed at Piers B and C, and the $5,400,000 Commodore Heim Bridge was constructed across Cerritos Channel by the U.S. Navy and the State Division of Highways to provide better access to Naval and port facilities on Terminal Island.

In 1949, the first shore-based radar installation in the Western Hemisphere for the guidance of ship traffic was installed on Pier A as another example of the port's progressive leadership.

However, it had not been—and was not to be—a trouble-free climb to a triumphant position as one of the world's leading ports.

By 1950, attention of harbor and city authorities had been increasingly turned to serious threats to the port's future on two fronts: the apparently inexorable march of subsidence and a series of legal attacks on the greatest asset of the port, its oil wealth.

Subsidence, a gradual lowering or sinking of the earth's surface, had been detected in the Long Beach-Wilmington-San Pedro area at various times prior to 1940. Very little attention was given to it, however, because it amounted to only a few hundredths of a foot.

However, in August, 1941, surveys showed that Terminal Island had settled vertically at its east end up to a maximum of 1.3 feet, with diminishing sinkage eastward toward Long Beach.

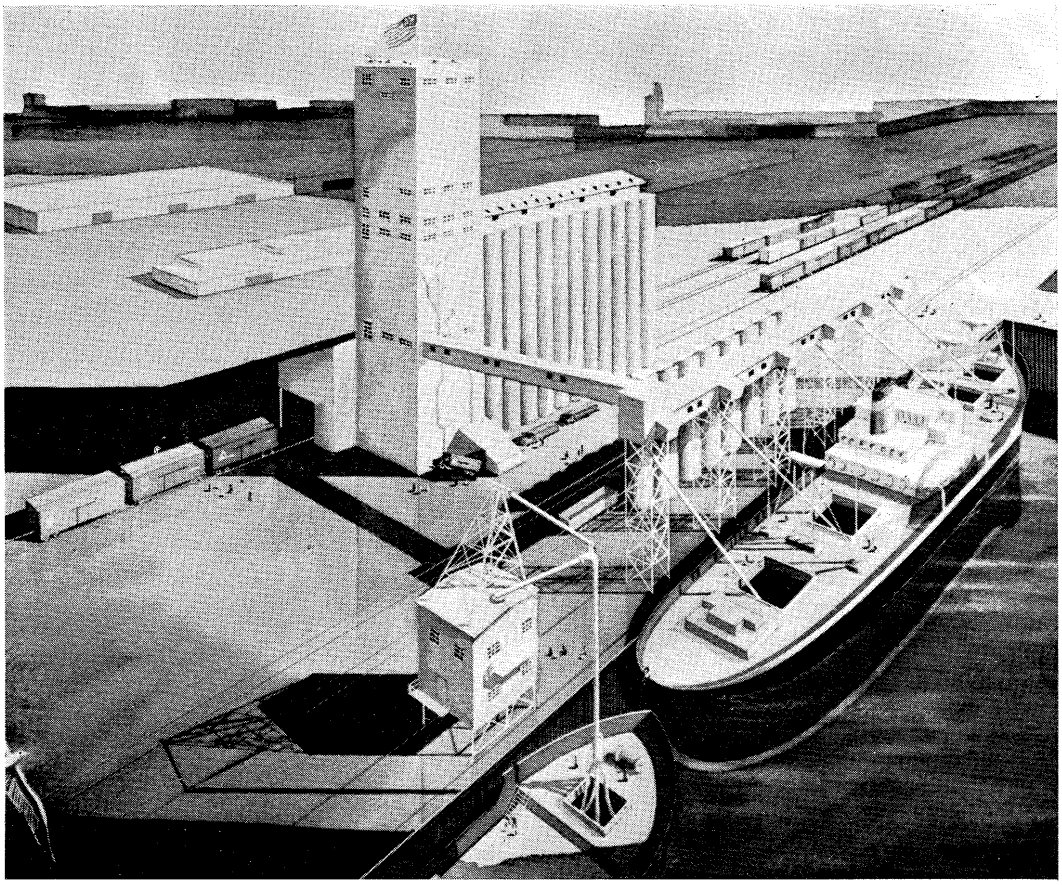
It was assumed at that time that the sinking was a phenomenon that would soon cease and there was no great worry over the situation.

World War II swung the spotlight to more pressing problems for the next few years. But by 1945, subsidence had gained major importance as dikes became necessary to protect the low areas from being flooded at high tide. Consulting engineers and geologists were employed—both by the Harbor Department and by private concerns—to study the problem.

Large scale injection of sea water into the sub-surface area was decided upon by engineers. It was estimated that this would result in recovery of an estimated 440,000,000 barrels of oil which would not have been produced under normal primary production methods.

With this plan in mind, an injection program was begun in 1953 on a limited scale, with installation of a pilot water-flood plant on Pier B.

By 1957, however, an area of 16 square miles had subsided from two to 24 feet, forming an egg-



The newest and most modern grain elevator on the Pacific Coast is now being built at Berths 208 to 211, Pier A, Port of Long Beach.

Now nearly completed, the elevator will have a workhouse 24 stories tall and will be able to load ships at a rate of 43,000 bushels per hour.

The Port is building the $4 million plant and will lease it to Koppel Bulk Terminals as operators over a 40 year period.

shaped bowl with its major axis in a northwest-southeast direction. The rate of subsidence, though less than its 2.4 feet maximum yearly rate in 1951, still was an alarming 1.2 feet at the bowl's center.

Naval authorities in Washington began to express serious concern over subsidence effects at the Long Beach Naval Shipyard and intimated that the Yard might have to be closed.

The Naval Shipyard employed about 6,509 men and women, with an annual payroll of more than $30,000,000. Its loss would have been a heavy blow to the city's economy.

At this time, a greatly increased water injection program began. Injection plants sprang up around the harbor and negotiations for essential unitization and cooperative agreements began among the city and other affected oil operators in the Wilmington field.

By 1960, the "Battle for the Shipyard" appeared to have been won and an end to subsidence seemed to be in sight.

A total of 260,000,000 barrels of water had been injected into the ground by October. The annual sinkage rate had been slowed to .5 foot per year and subsidence in about 60 per cent of the shipyard area had ceased. Total subsidence approached 27 feet at the center of the bowl but there was every indication that its limit had been nearly reached.

Cost of subsidence has been enormous. Since 1951, when remedial expenditures began on a large scale, more than $46,000,000 has been spent on reconstruction of harbor facilities, filling of the subsided land . . . which amounted to placing an entirely new harbor on top of the old one . . . and other remedial projects. Additional similar work costing $10,700,000 was in progress late in 1960.

On their second front, a battle to retain the vast, port-building income, city and harbor officials eventually met partial success.

Through the years, there had been continuing attempts by the Federal government to claim title to tidal oil lands. Those states affected led a long and bitter fight to retain ownership, a battle which was climaxed by the so-called Tidelands Law of 1933. This bill, held constitutional in 1954 by the Supreme Court, denied the right of other states to challenge ownership of the tidelands.

However, the seed for another threat to harbor oil revenues had been planted in 1951, when an amendment to the original 1911 tideland grant to the city was passed, authorizing use of half the tidelands oil money for non-harbor purposes.

A Long Beach tax payer, Felix Mallon, joined later by another tax payer, Alma Swart, filed suit to prevent the city from using tideland oil and gas revenues for other than harbor improvements.

The State Supreme Court, in 1955, held that when the Legislature freed half the oil reenue and all gas revenue from terms of the 1911 state grant, these revenues should go to the state, not to Long Beach.

After the Mallon decision, the state filed suit to recover its share of the oil income. In the Spring of 1956, city and state representatives sat down in Sacramento

and reached a compromise whereby the city accepted the Mallon decision and the state, in turn, declared the remaining half of the oil money could be usefully spent by Long Beach for state trust purposes.

The compromise, Assembly Bill 77, was enacted by the Legislature and resulted in more than $120,000,000 being turned over to the state by the city, along with a commitment for future payment of 50 per cent of all oil revenues derived from Long Beach tidelands, plus all revenue received from sale of dry gas. The state also agreed to pay a percentage of subsidence costs.

Meanwhile, the tidelands oil revenues which have transformed Long Beach Harbor from a "bush league" seaport in 1936 to one of the world's most modern and progressive commercial gateways are still coming in, though at a lesser rate than during the peak years of the early 1950's.

The harbor's share of income from operations of Long Beach Oil Development Co. hit a high of $23,495,916 for the 1951-52 fiscal year. Highest annual return to the city from Richfield Oil Corporation, which joined LBOD as a city operator under contract in 1948, was $8,731,009 in 1956-57.

Total net income to the city from both operators up to June 30, 1960, amounted to $345,365.551, representing recovery of more than 264,000,000 barrels of oil, in addition to the dry gas produced.

By 1959-60, the yearly oil income from both contractors had declined to $13,145,965, before the city's 50-50 split with the state called for by AB 77, the tidelands compromise bill.

However, the large scale water flooding program marked the transition in the Wilmington Oil Field from primary producing methods to a secondary recovery stage.

Late in 1960, engineers estimated that 9,500 barrels of the 35,400-barrel daily oil production by tidelands wells could be attributed to the water flooding program. They estimated that the program had already resulted in recovery of 6 million barrels of oil which would not have been produced under primary recovery methods.

Oil income levels will probably not approach those of the peak years but, through water flooding and through development of offshore oil sands not yet tapped, substantial revenues are anticipated for another 25 to 30 years until the economic limit of the Wilmington Field is reached.

Considering the distractions of the period, the fact that the port's development program continued unabated during the turbulent 1950's represented a remarkable achievement.

Completion of new bridges across the Los Angeles River Flood Control Channel, together with extension of the Long Beach Freeway south into the harbor district tremendously increased ease of access to the port.

New spans included the Anaheim St. Bridge, completed in 1953 at a cost of about $3,400,000; the Robert R. Shoemaker Bridge, finished in 1959 for about $10,000,000, and the Ocean Blvd. Bridge, completed a few months later for a little over $5,000,000 in construction costs. These replaced older structures which had become flood hazards.

Large, modern transit sheds were erected at Berths 9 and 10, Pier A, and at Piers 1 and 2 in the inner harbor. Similar facilities were constructed on Piers B, C and D, and several new warehouses were built. Three huge gantry cranes for handling scrap metal and other cargo were purchased and located on Pier D, Berths 20, 21 and 22. Mammoth earth fills were placed in position as the systematic raising of sunken areas went on.

Another phase of harbor activities became prominent during the period as sportfishing took its place as a major industry here. Pierpoint Landing, established in 1948 on Pier A, grew to become the largest sportfishing operation in the world. A second sportfishing center, Pacific Landing, was also located on Pier A.

The beginning of a new era for the port came early in 1960 when 250 port employees, plus about 100 from Long Beach Oil Development Co., moved into a new $2,825,000. eight-story harbor administration building on Pier A East, from where they could watch history in the making as two magnificent new piers, F and G, took shape extending from the south side of Pier A.

The new piers, completed during the summer of 1960, were the first step in a 20-year expansion plan calling for eventual creation of a new 40-berth southeast basin. Included in the plan are two other piers, H and J, to the east of F and G.

During the construction of F and G, the Board of Harbor Commissioners selected the firm of Moffatt & Nichol and associates, Long Beach engineers, to conduct a comprehensive land-use study of the new land, including recommendations for its development.

As proof that the Harbor Board's faith in the port's future was not misplaced, revenue tonnage through the harbor during 1959-60 set an all-time record of 10,285,868 tons, accompanied by an operating income of $3,191,196, another record.

Projects under way include a bulk oil terminal for super tankers on Pier E, the largest grain elevator in Southern California under construction at Berth 211, Pier A; wharf construction on the west side of Pier E for the U.S. Navy which, when completed, will allow return to port control of two berths on the pier now used by the Navy, and final freeway developments which will speed truck shipments to and from the harbor.

During its first half-century, from an empty stretch of ocean, beachland, sloughs and salt marshes, Long Beach Harbor has become a modern, thriving seaport. And the outlook for the future indicates that even greater prestige will come as the port assumes its position as the Southern California gateway for the commerce of the world.

Tonnage Report

As a fitting climax to its 50 years of progress, the Port of Long Beach broke all previous records during 1959-60 in volume of tonnage handled and in gross operating revenues.

For the first time in port history, the 10,000,000-ton goal was achieved in cargo handled at the harbor, with an unprecedented 10,285,868 tons registered during the fiscal year.

Gross revenues climbed to a record high of $3,191,196, a $425,610 surge past the previous year's total.

Of the tonnage handled here, 4,860,934 was through coastwise commerce, 396,583 intercoastal and 5,028,351 foreign. Dollar value of all cargoes was estimated at $756,154,107.62.

Leading import commodities were petroleum products, 1,580,181 tons; steel, 427,922 tons; paper, newsprint, 318,649 tons, and lumber, 156,702 tons. Others in the top ten were rattan and bamboo manufactures, coffee beans, automobiles, glass manufactures, porcelain, china and earthenware and iron ore.

Petroleum products also headed the list of exports through the port with 4,343,278 tons. Bulk potash was second, with 475,230 tons, followed by bunker fuel, 263,932 tons, and petroleum coke, 194,423 tons. Others were borax, cotton, tallow, scrap steel, citrus fruits and bulk flax.

Linda Joy Lackey, 1961 Maid of Cotton, examines cotton shipment at Port of Long Beach, March 9, during her six-month tour of the United States, Canada and Europe. A junior at the University of Mississippi, Maid Lackey examined cotton storage facilities at the port which is the West Coast's leading cotton exporter.

Port Recreational Facilities

Despite its business-like reputation among the world's shippers, the Port of Long Beach—this year celebrating its 50th anniversary—is known to thousands of Southlanders as a place for fun.

Diversified forms of water activities are provided for enthusiasts. Fishing, yachting, water skiing, pleasure boating, sightseeing—all are popular in their sections of the harbor.

And this, too, results in swelling port revenues. Income from recreational activities here during the 1959-60 year amounted to $156,661.97.

Focal points of sportfishing for Southern Californians are Pierpoint and Pacific Landings, which carry thousands each year to well-stocked fishing grounds along the coast and out to sea.

Harbor sightseeing craft tour the Port on regular schedules. A recent addition to this service is the weekend presence of a helicopter at Pierpoint Landing which takes visitors aloft for a unique view of the port and city.

A large, four-motor flying boat utilizes the harbor waters in season as a "landing field" in its passenger service between here and Catalina Island, 22 miles off shore. The 250-passenger vessel Magic Isle is available for those who wish a more leisurely means of reaching the famous island.

Pier A restaurants include the Reef, featuring a South Seas motif; the Galley at Pacific Landing and Pierpoint Landing's restaurant.

Recreational aspects of the Port will be substantially augmented following construction of a new 270-acre pier, "J," authorized recently by the Board of Harbor Commissioners. Present plans call for a good portion of the pier—planned to extend south from the east end of Pier A—to be reserved for light commercial use.

Cotton Exports Thru Los Angeles All-time High

At mid-year all indications point to the possibility that 1960-61 Port of Los Angeles cotton exports may approach the all-time high of 408,316 bales handled in 1956-57, according to the port's traffic manager.

For the first five months of the year, the Port of Los Angeles recorded 97,941 bales, a figure which represents almost a 25 per cent increase over the same period of 1959-60.

Industry spokesmen and cotton shippers in the area express optimism that the second half of the fiscal year will run approximately 10 per cent over the corresponding period last year. On this basis, Port of Los Angeles cotton exports may run considerably ahead of the estimate at the end of the year, providing that the present 25 per cent pace continues.

During fiscal 1959-60 a total of 315,916 bales were handled across the wharves. Compared to 1958-59 this amount represents a whopping 204,320-bale increase.

Shipments for last year went to 26 countries—five more than the previous year—with Japan again receiving almost half the total. Others in the top 10 were India and dependencies, United Kingdom, France, Italy, West Germany, Netherlands, Hong Kong, Belgium, and the Philippines.

Of 10 principal commodities shipped out, cotton ranked fourth behind iron and steel scrap, borax, borates, and boric acid, and citrus fruits. Currently, the order appears to be about the same as last year.

Cotton, in recent years, has always been high on the list of exports, and to handle this consistent flow, the Port has kept pace with the needs of shippers with special cotton handling facilites.

Six of the Port's warehouses are particularly suited for cotton storage, offering space for more than 80,000 bales.

Near the top of the list of most important facilities is a high-density cotton compress, now owned by the Port and situated in an outer harbor terminal.

Other storage units include two reinforced concrete, sprinklered warehouses in the Wilmington district, each with space for 15,000 bales; a six-story, concrete, sprinkled warehouse in the San Pedro outer harbor district, with space for 30,000 bales; two sprinklered warehouses, approved by Commodity Credit Cotton for storage, in the outer harbor area, each of 7500-capacity; and another outer harbor warehouse with a 20,000-bale capacity.

* * *

Construction of Exhibition Ship Decided

The construction of an exhibition ship whose subsidy was included in the new fiscal year budget by the Ministry of International Trade and Industry, Japan, has been approved as the result of budget negotiations on January 16. The floating trade fair was held three times, and each time it took ¥250,000,000 to charter and refit a private ship. In order to eliminate such waste expense the MITI was planning the construction of a ship which can be used as an emmigrant vessel except when it is used as a floating trade fair. Under the plan the ship (11,800 tons gross), which will have 430 booths (3.3 sqr. meters per booth), will be capable of accommodating 120 persons in case of using as floating trade fair and 952 passengers in case of using as emmigrant ship.

* * *

Yokohama Marine Tower Opens

Yokohama Marine Tower, which had been under construction since November 1958 at the site in front of Yamashita Park at a cost of ¥350,000,000 was recently completed. A ceremony to announce the completion was held on January 14 in the presence of those concerned. The tower was constructed by the cooperation of Yokohama Municipal Office, the Yokohama Oceanographic Science Museum and the Yokohama Observation Tower in order to commemorate the centenial of the opening of Yokohama Port. The 106-meter tower houses the highest light-house in Japan and the oceanographic science museum.

Cotton Shipments Via Long Beach

Cotton shipments through the Port of Long Beach during the first seven months of the fiscal year totaled 195,669 bales, according to Charles L. Vickers, general manager. This represents a 3.37 per cent decrease over the same period last year.

Countries receiving the largest shipments were respectively Japan, France and India.

Breakdown for the seven-month period includes August, 3,163 bales; September, 1,697; October, 9,780; November, 38,930; December, 51,331; January, 62,012; and February, 27,873.

Vickers said that during the 1960 calendar year 361,098 bales were handled at the port. Of this total, 113,315 bales arrived by rail; and 247,783 bales were shipped to the port by truck.

* * *

Iino Line to Extend to Chicago

With the understanding of the Ministry of Transportation, Iino Line decided on February 16 to extend its regular service to East Canada and Great Lakes to the Chicago area with the March vessel Muneshima Maru (12,093 tons d.w.). The Line extended its New York run to both areas with the opening of the St. Lawrence Seaway in the spring of 1959 and in July 1960 separated the extended service from the New York service. Since then the direct liner service between Japan and both areas has been in operation. The extention to Chicago is the Line's final object. The new ports of call resulting from the extended service include Chicago, Milwalkee and Bay City (if inducement). Sailing time between Yokohama and Chicago will be 40 days and Yokohama and Milwaukee 42 days. The vessels scheduled to be commissioned in the service will be the Muneshima Maru (12,093 tons d.w.), the Tsuneshima Maru (12,137 tons d.w.), the Takeshima Maru (12,021 tons d.w.) and the Masashima Maru (10,514 tons d.w.).

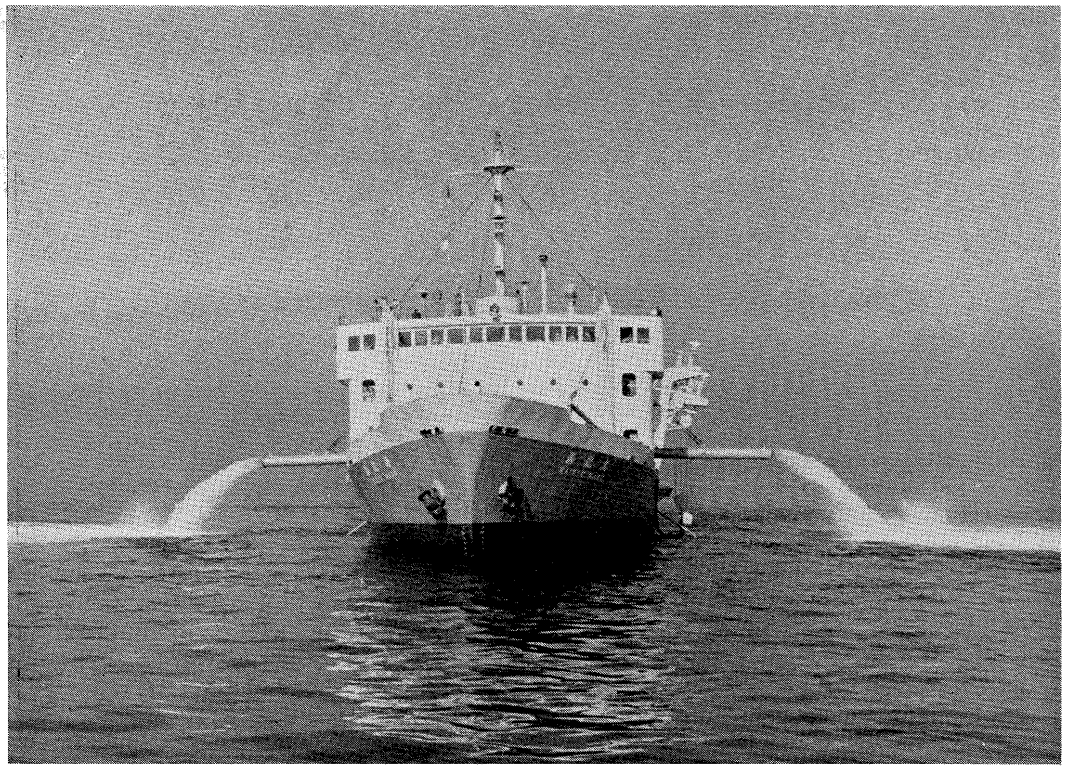


Photo shows the Kairyu Maru in operation, discharging through the discharge pipes on board.

Large Modern Drag-Suction Dredger Constructed in Japan

To Be Employed for the Improvement of Nagoya Harbor

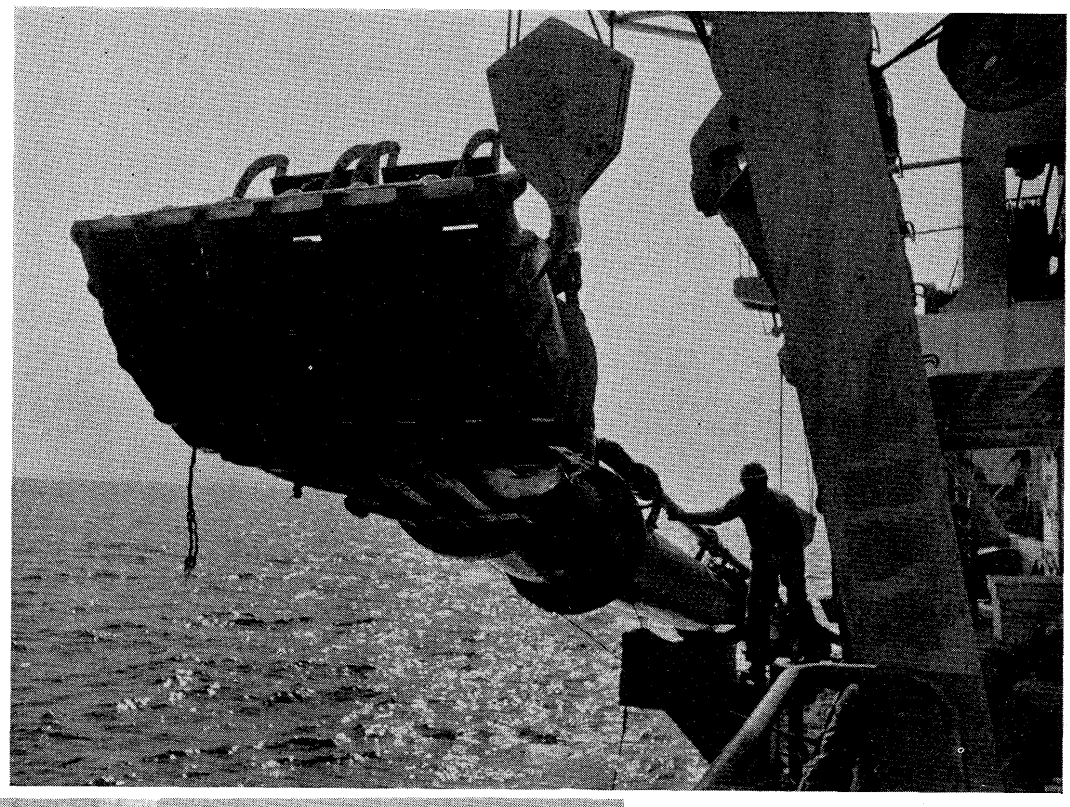
The trailing type drag-suction dredger "Kairyu Maru", the first of this type to be constructed in Japan, was put into operation in Nagoya Harbour in February 1961. Ordered by the Ministry of Transportation in October 1959, the dredger was recently completed in the Yokohama Shipyard & Engine Works of Mitsubishi Nippon Heavy-Industries, Ltd. Constructed mainly for dredging in the Harbour of Nagoya, both the propulsion engines and dredging pumps are Diesel electric driven, the constant current control system being adopted. With its extensive current control system being adopted. With its extensive remote control system, modern equipment, adequately rigid hull construction, etc., she is one of the most efficient dredgers.

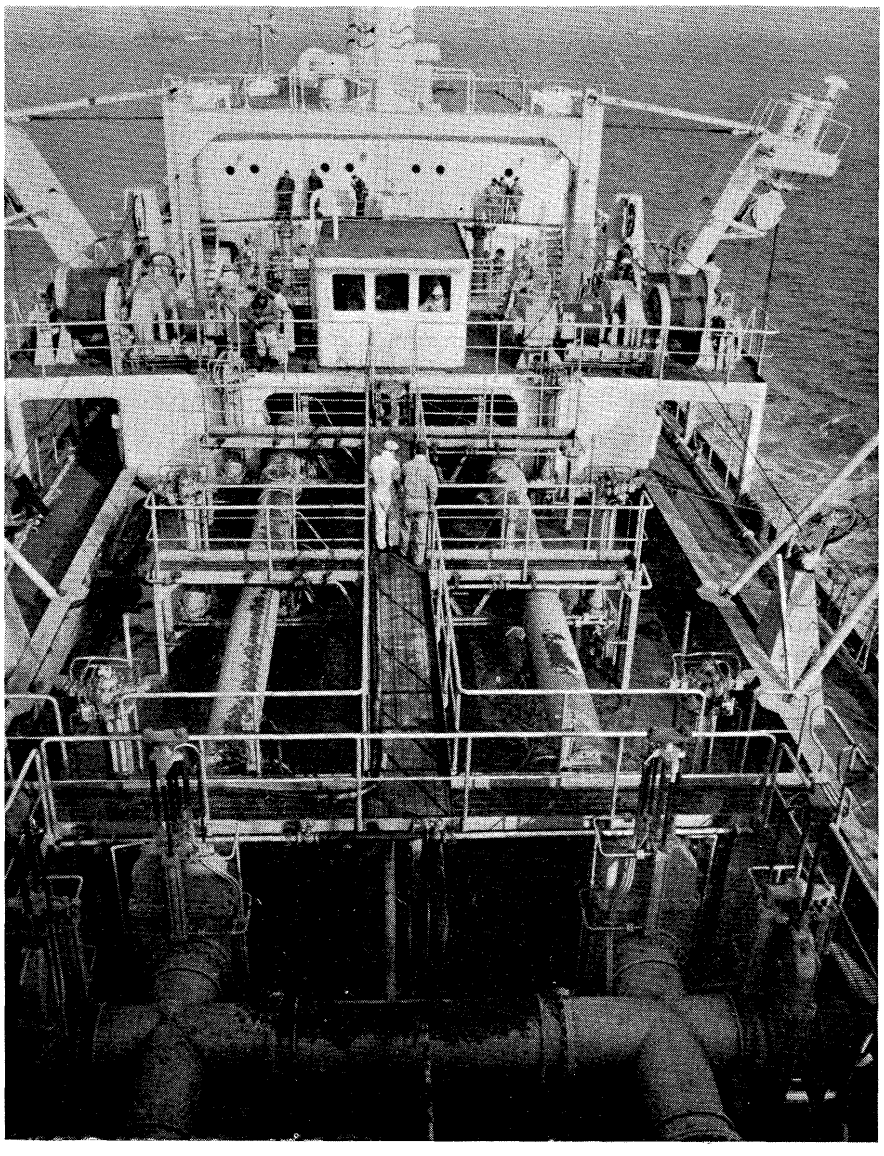
Principal particulars are given below.

Length, between p.p.	85.00 meters
Breadth, moulded	14.60 "
Depth, "	7.00 "
Designed draft, above top of keel	5.60 "
Deadweight tonnage	3,200 "
Gross tonnage	2,647 "
Hopper capacity	1,700 cub. m
Max. trial speed	12.79 knots
Main generators	2 sets of D.C. 600 V 1,000 KW
Engines for main generators	2 sets of Yokohama M.A.N. 1,800 PS × 360 r.p.m.
Propulsion motors	2 sets of D.C. 600 V 900 KW 300 r.p.m.
Dredging pumps	2 sets of 4,100 cub. m/h × 18 m
Dredging pump motors	2 sets of D.C. 300 V 450 KW 220 r.p.m.
Max.dredging depth	18 m
No. of crew	70

A twin-screw and twin-rudder ship, the pump room is in the forepart. Six-section hoppers are located amidships, the engine room being aft. The crew's quarters are on the deck above the pump and engine rooms, and include a recreation room, mess room, etc., all of which are air-conditioned by a thermotank system. Each hopper has on the ship's bottom two hopper doors, which are hydraulically opened and closed in the minimum of time from the hopper door operating room above the hoppers. One steel plate drag-arm 620 mm in diameter is equipped on each side of the ship. They are long enough to dredge the sea bottom 18 meters deep at a 45° inclination. The drag-arm has a ball joint, so as to keep the drag-head in good contact with the sea bottom and not to pass the impact caused by the drag-head directly to the hull. Three kinds of drag-

Photo at left shows the drag-head and photo below shows the hoppers and winch platform.





heads are provided; they are interchangeable depending on the consistency o fthe mud. The trunnion is of the fixed type. The drag-arms are suspended by jibs at two points near the ball joint and the drag-head. The arms are drum electric winches installed on each side of the winch platform. The winches are operated from the wheel house. They have two drums so designed as to raise and lower the arm in a straight line. It is also possible by the clutch to operate the drum for the ball joint independently. The drag-head jib can be hydraulically extended 3.5 meters outside of the ship side, permitting the drag-head to operate at an adequate distance from the ship.

The discharge pipe on board has two square outlets above each hopper. These outlets are provided with tainter gate valves, which are opened and closed by levers in the hopper door operating room. The mud and sand loaded in the hopper are generally dumped out of the hopper doors. When it is necessary to use the material

for reclamation, it is also possible to discharge it outside the ship through the discharge pipe.

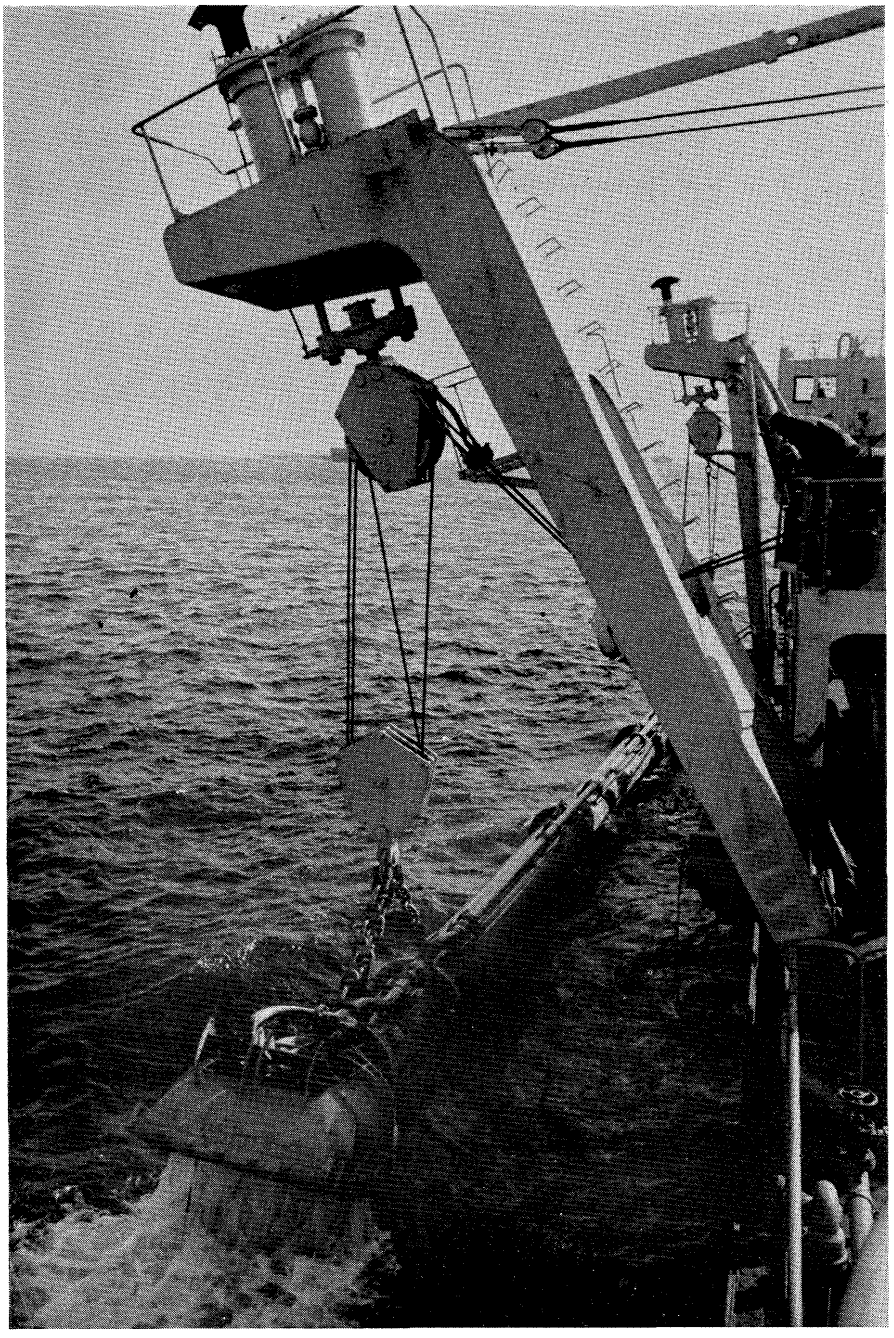
Provided on the hopper bottom, so as to assure a good discharge of the material, is a jet pipe which projects water into the hoppers by the jet pump in the pump room.

Two dredging pumps of the single stage, single suction, volute type are installed in the pump room, each having a capacity of 4,100 m^3/h at 18 m total head. They gave an efficiency as high as 74% at the rated point on the test bed.

The power generating equipment consists of two sets of D.C. 1,000 KW generators driven by two Yokohama M.A.N. G8V 40/50 AL type Diesels, which are four-stroke cycle, supercharged engines with an air cooler, each developing 1,800 PS at 360 rpm, with eight cylinders of 400 mm bore and 500 mm stroke.

The two propulsion motors and the two dredging pump motors are direct-connected D.C. electric motors, the rating of each being 900 KW at 300 rpm and 450 KW at 220 rpm respectively.

All these four motors and the two main generators are connected in series through a main circuit, by which the main generators supply electric power to the motors. This plant is controlled by a constant current system. The electric current in the main circuit is always maintained constant by the automatic control device despite the motor load variation which responds to the electric voltage. Hence the revolutions of these four motors can be independently controlled by the motor field current regulation. And this control system has the advantage that one generator can supply power for any number of motors simultaneously within the limits of its capacity.



Above photo shows the drag suction pipe working.

As this control system has never before been applied to marine service in Japan, the design was carefully made. For instance, an automatic protecting device has been installed for all extraordinary conditions such as motor overspeed due to sudden load reduction, due to surdden load reduction, inverse power input to the main circuit at crash stop astern, commutator damage when the motor has stopped leaving the rated circuit current flowing, etc.

The trial results carried out in January, 1961 proved that the automatic control device and the automatic protecting device were most satisfactory, and no current agitation in the main circuit could be observed during all the operating period.

The wheel house has adequate space, in which are arranged the propulsion remote control desk, dredging pump remote control desks, drag-arm winch controllers, a compass, radar, draft meter,

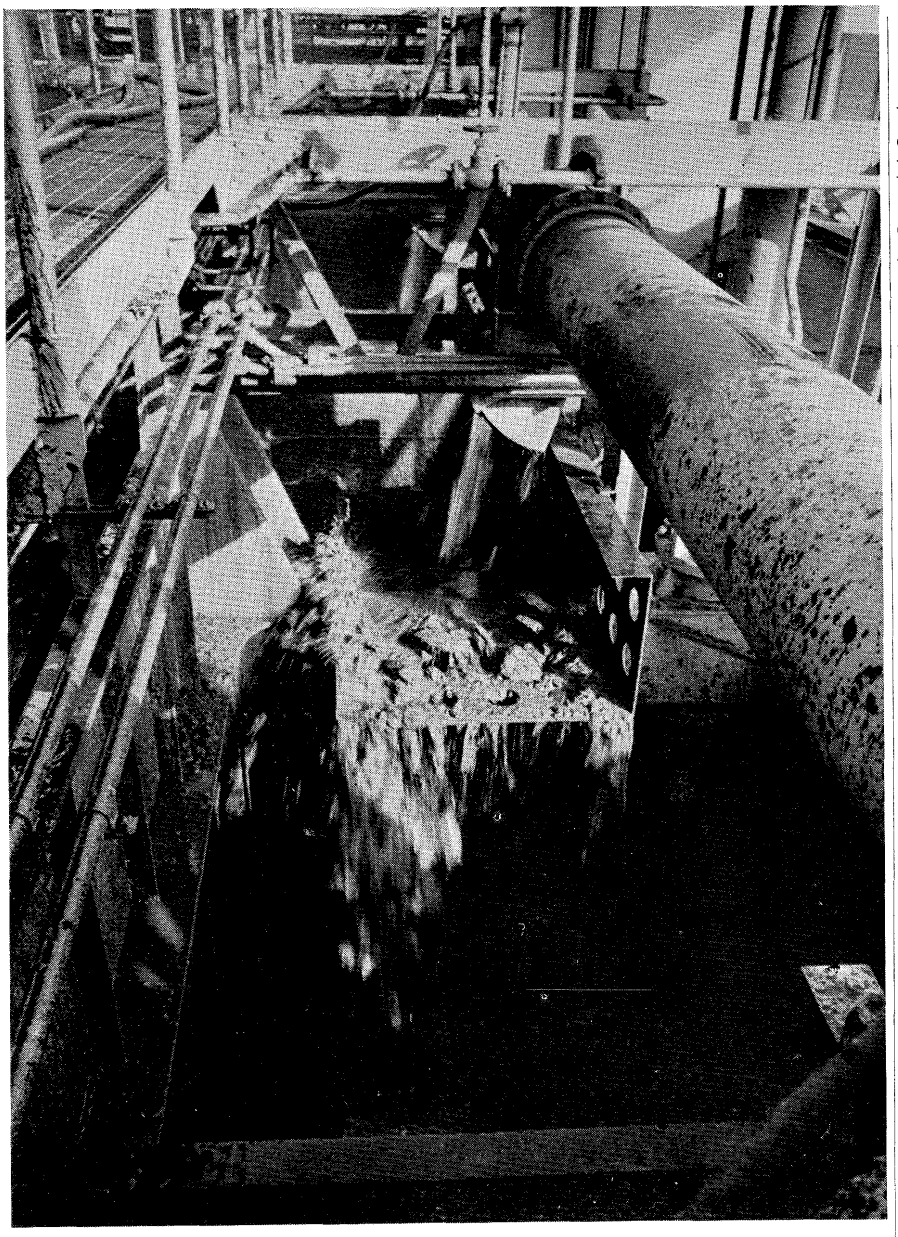


Photo shows the hopper in operation.

dredging pump vacuum meter, pressure gauge, vacuum automatic recorder, dredging valve opening and closing indicator, etc. They enable the Master to observe and control the whole dredging operation. The hopper door operating room has a hopper door and tainter gate operating valve, as well as a dredging pipe valve opening and closing controller.

Of robust construction and adequate propulsion capacity, the ship can continue dredging operations in rough weather or against a four-knots current. Working on a three-shift system, operations can continue for a full 24 hours, and thus the crew's cabin acommodation for the necessary personnel is adequate to permit them complete rest and every comfort.

The series of trial runs and dredging tests carried out proved most satisfactory. Notwithstanding the various new devices embodied in the first trailing type dredger built in Japan, the manœuvrability, stability and dredging capabilities received high commendations from all quarters.

It is confidently anticipated that many such dredgers will be built in Japan in the future.

Wakayama North Port Wharf Completed

The first stage of the construction work on the wharf for the exclusive use of Sumitomo Metal Industry Co. in Wakayama North Port being recently completed, a ceremony was held to mark the completion on January 24 on the occasion that the Liverpool Maru (18,675 tons d.w.) was berthed at the wharf. With a 500-ton unloader the newly completed wharf 220 meters long, and 9.50 meters deep, is capable of accommodating a 15,000-gross-ton ore carrier.

* * *

Rest House for Foreign Seamen to be Set up in Kobe

It has been decided to build in Kobe the only service station for foreign seamen in Japan. With no rest place in principal ports here so far they take their holidays in Hong Kong and Singapore. In order to meet their requirements and to earn dollars Sentochi Kogyo Company, Osaka has started the construction of a 10-story building with three basements named "Kobe Port International Service Station for Domestic and Foreign Seamen." In addition to 200 rooms for seamen the building will have souvenir shops, amusement rooms, etc.

* * *

Nitto to Expand Services

Nitto Shosen Line recently concluded a contract with Ishikawajima-Harima Heavy Industries, Ltd. and Kure Shipyard Company for the construction of three medium speed cargo vessels (12,500 dwt. each) at a cost of ¥3,000,000,000, which will be financed by the newly increased capital.

The vessels, two of which are to be constructed by Ishikawajima-Harima and one of which by Kure are scheduled for completion from the end of this year to the middle of next year. After completion they will be placed on the United States Pacific West Coast service (Los Angeles, San Francisco and San Diego) which is the main route of the company and the Ceylon run.

Safety Measures For Large Vessels Against Typhoons

(In view of the great damage inflicted on the Ports of Nagoya and Yokkaichi by the typhoon of September 26, 1959 and the bitter experience learnt by them, The Japan Association for Preventing Sea Casualties has made various investigations on the counter-measures. As one of the investigations, including many problems of practical importance, this article has been reproduced here with the permission of the Association—Editor)

The Japan Association for Preventing Sea Casualties is a public service organization, incorporated in August, 1958, with the cooperation of government authorities and private bodies for the purpose of preventing sea casualties.

The Association had under consideration safety measures recommended for large vessels against typhoons, which sweeps over this part of the world in July to October every year, causing considerable losses of lives and property, including ships. The disastrous typhoon that hit the Ise Bay in central Japan, with the important ports of Nagoya and Yokkaichi, on September 26, 1959, brought havoc not only to land, but also caused extremely serious damages to shipping in its passage.

This prompted the Association to make special studies of this typhoon and the lessons it taught. A special committee was named, consisting of experts and experienced navigators. After careful studies of relevant data, the Committee submitted in August, 1960, to shipping and allied industries "Lessons of the Ise Bay Typhoon and Safety Measures for Ships" and "Guiding Principles of Safety Measures for Ships against Typhoons".

I. Lesson of the Ise Bay Typhoon and Safety Measures for Ships

Extensive data were collected from every available source, and carefully analysed by experts. Local opinions were also heard and considered. The Committee's conclusions are as set forth hereunder:

1) *Seeking Shelters*

The following observations are mainly with regards to the port of Nagoya: but would apply equally to the port of Yokkaichi.

A. *Ships at Anchor* There being no suitable anchorage ground in Nagoya harbour for ships of over 1,000 tons, it would be best for large ships to seek shelters outside the port.

B. *Ships Tied to Buoys* Because of relatively short distances separating the buoys, there is considerable danger of ships dragging anchors or drifting, very serious damages will ensue. All ships that can do so should seek safety outside the port.

C. *Ships Tied at Wharves* For the reason mentioned in the second part of B, and in view of the possibilities of Storm Surge, ships in this group would be well advised to find shelters outside the port.

NOTE: In the Ise Bay typhoon, 3 foreign vessels tied to buoys remained there and managed to escape damages. They were, however, nearly fully loaded; and thanks to other ships having gone out of the port, they had relatively large berths, and were free from the risks of other ships dragging anchors or drifting. Thus their safety was fortuitous.

Had the typhoon longer, they might have been involved in casualties. Their examples can not be recommended for others to follow.

D. *Time to Seek Shelters* Ships should start seeking shelters 9 hours before the port is within the range of typhoon. This is for the reason that ships will not be manouvable in the port when the wind is blowing at 15 meters per second from the North or 10 meter per second from the South.

NOTE: 9 hours in advance was arrived at in consideration of the fact that the steaming time to Nomazaki anchorage area in the Ise Bay is 3 hours, and the fact that 35 vessels occupying all available berths in the port will require 6 hours to clear out of the port.

E. *Recommendation to Seek Shelters* This recommendation can best come from the close cooperation between port authorities and shipping companies concerned, and carried out with utmost smoothness, as has been worked out by the Casualties Prevention Team of the port of Kobe.

2) *Selection of Anchorage Ground in the Ise Bay*

A. *General Observation* If the the port happens to be in the left hand semi-circle of the typhoon, there are many anchorage grounds to which ships could go for safety, and in this case the forces of both the wind and the waves will be less strongly felt. Consideration is given, therefore, to cases where the eye of the typhoon passes to the West of the port, that is to say, when the port happens to be in the right hand semi-circle of the typhoon.

(a) Avoid the deepest part of the Bay that runs in the general North-South direction.

The deepest waters are 30 to 40 meters in depth and fairly wide. In the event of Storm Surge running to the port, it is said that current runs strong in the deep part of the Bay.

(b) Beware of the danger of mines. (The mine-sweeping work is in propress and will be completed shortly.) Avoid dangerous anchorage areas, though in 1959 several ships did safely anchor in, or go dragging anchors through such areas.

(c) Safe Distance Leeward. Where there are shallow waters to the lee of the anchorage ground chosen, keep a safe distance of 5 to 11 nautical miles depending upon the condition of the ship.

These figures are calculated on the following data:

i) Wind: At the port branch of the Nagoya Meteorological Observatory, wind of more than 20 meters per second was registered between 20.00 and 23.00 hours.

ii) Anchor dragged: by different ships ranged from the minimum of 1 hour to the maximum of 6 hours, average 3 hours.

iii) Speed and Distance of Ships dragging anchors: The highest speed was 1.8 knots; average speed of ships that dragged anchors for more than 3 nautical miles, was 1.6 knots.

iv) Direction of ships dragging anchors: The largest majority drifted to the North West; others ranging from the North to the West. Not a single ship to East of the North; nor South of the West.

NOTE: Experiments conducted with anchors on muddy or sandy bottom showed that when they are dragged, they rise and turn over to take hold of the bottom again. This is repeated, so that it is possible to speak of average speed of dragging anchors. The experiments goes to confirm the common experience of finding anchor chains badly twisted after the ship dragged anchors in storms.

In strong wind when cast onto clay soil, the anchors either bite too deep into the ground, making it very hard to weigh them up; or if the clay soil is shallow, the anchors are dragged with clay covering them completely. In the latter case, the anchors will not hold again, unless they are weighed, clay removed, and let go again, and the speed of ships dragging anchors will be surprisingly high.

II. Guiding Principles of Safety Measures for Ships

It has always been thought best, as a general rule, at all the ports in Japan for vessels to seek shelters and safety by moving out of the ports. From our recent studies of the Ise Bay typhoon, this guiding principle has been found to be sound and is applicable to all the ports in the country.

In this connection, two recommendations are submitted: One dealing with the method of anchoring, and another with the displacement and trim of a ship.

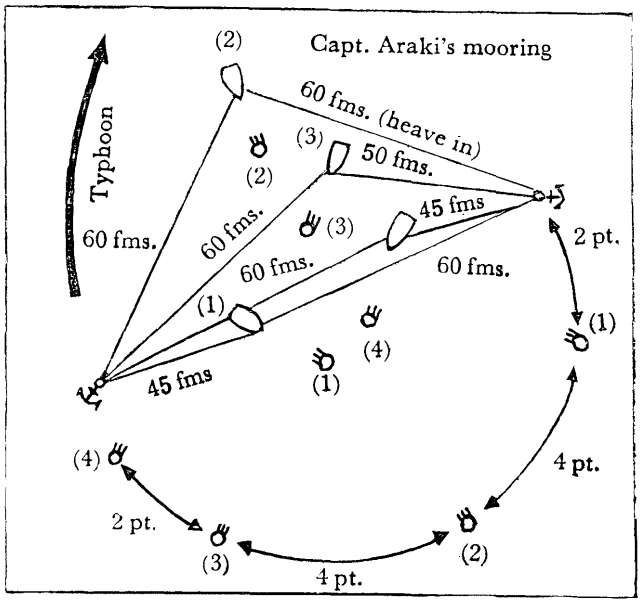
3) *Methods of Anchoring*

The following three methods were considered, and are mentioned as worthy of note by mariners.

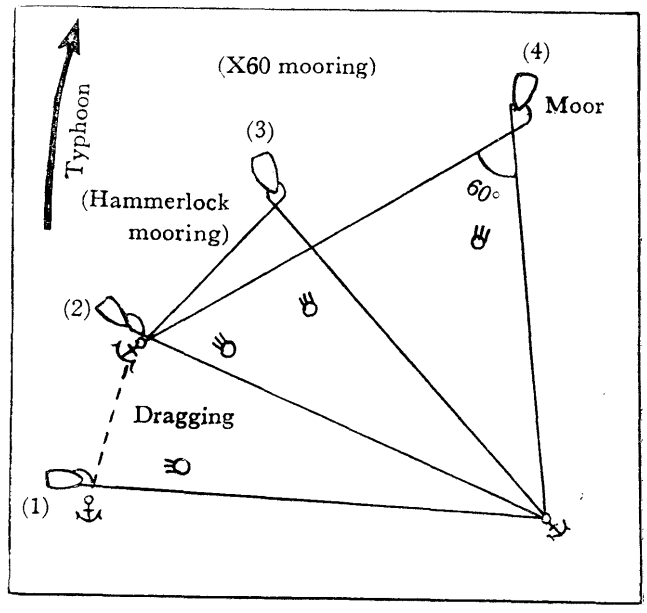
A. *Captain Araki's Mooring* is for ships anchoring when the wind is beginning to gain in force.

(a) Proceed to the selected anchorage at slow speed, with the wind at 2 points on the starboard. Drop the starboard anchor. Using engine suitably, proceed in the same direction until the starboard anchor chain is practically all veered out.

Then let go the port anchor. Adjust the port and starboard chains until they are 60 fathoms and 45 fathoms in length re-



Capt. Araki's Mooring.



X60 Mooring.

spectively.

(b) When the wind changes six points to the right, its force is at its height, keep both chains out 60 fathoms.

(c) With further shift of 4 points of the wind, heave in port anchor chains to some extent so as to prevent the bow from swinging.

(d) When the wind shifts another 2 points, or the total of 12 points from the beginning, the center of the typhoon is moving away, and its force will be diminishing.

NOTE: Lengths of chains are given for ships of about 2,000 tons. Larger vessels had better use practically the entire lengths of chains on board.

B. *X60 Mooring* as developed by the Tokyo Nautical College, is so designed as to have cross mooring with 8-10 shackles of both chains out, forming an angle of 600 at the height of the wind force (stage 4). At stages 1 and 2, the port anchor is used to prevent swinging of the bow. With the wind shifting from East to South, extend the port anchor chain until at stage 3 it will be the Hammerlock mooring. Veer out the port chain more so that at the height of the wind both chains are out the same length. This cross mooring will reduce the swinging of the bow.

NOTE:

(a) By using sufficient length of both chain, it is possible to keep the direction of the wind within the angle formed by the two chains.

(b) This mooring seems to take no account of the effects of swells and gustiness of wind. Results were very good however, in the wind tunnel experiments.

(c) In the wind tunnel experiments, the swinging of the bow was the least, and the shock load on the chains was the minimum, when the chains formed an angle of 60°.

C. *V60 Mooring* also developed by the Tokyo Nautical College, is a modification of X60 Mooring in B above, by changing the directions of two anchors, where cross mooring is feared to result in foul chains.

Model tests in wind tunnels indicated, however, that both swings and shock load were less in X60 mooring than mooring in V60.

4) *Displacement and Trim of a Ship*

A. *Displacement* It is suggested that ballast tanks and, if necessary, holds, be flooded in order to bring the ship as close to the fully loaded condition as possible. It has been found that, where the weight was more than 75% of the fully loaded displacement tonnage, there was no instance of dragging anchors.

Method of Flooding

Preliminary Works

(a) Clean the holds so as to prevent exhaust pipes, rose boxes, etc. from choking up.

(b) If time permits, remove bottom ceilings and side sparrings and place them on the tween or upper deck.

(c) Move oil in double bottom tanks from the foreward tanks to aft tanks. This will give empty tanks foreward.

(d) Remove the man-hole covers in the tank tops of the empty tanks.

Flooding

(a) Connect hoses to wash-deck pipes, and pour seawater into the holds through open hatches. This will give generally 20-160 tons of water per hour.

(b) Flood the holds through empty double bottom tanks, starting with foreward tank, by using ballast water pumps. 160 to 300 tons of water can be poured in per hour generally.

NOTE: Model tests in wind tunnel indicated that, with the ship trimmed by the stern and with the wind of 35 meters/sec., the bow swung 46° in ballast condition, and only 18° fully loaded. This is a reduction of nearly 60%. Shock-load on anchor chains was reduced from 93 tons to 24 tons, or about 75% less.

Pumping Water Out Afterwards

(a) Bilge and ballast pumps can be used; also portable pumps.

(b) If clogged roses make it impossible to pump water out by the use of bilge and ballast water pumps, empty drums slung on derricks can be used to bail water out of holds. This methods, according to those who tried it, is more efficient than it appears at first sight.

B. *Trim* It is desirable to trim the ship by the head. Where this can not be accomplished, bring her to even keel.

NOTE: In the similar tests, a model ship fully loaded and trimmed by the stern in a normal manner, swung the bow 18° in the wind of 35 meters/sec., but only 5° when trimmed by the head, a reduction of over 70%. Chain shock-load was reduced from 24 tons to one of negligible proportion.

Similarly, tests indicated that a model ship in ballast with a normal trim by the stern swung the bow 46° in 35 meters/sec. wind; but if trimmed 1 meter by the head in a loaded conditions, she would swing only 5°, or only about 1/10 as much. Chain shock-load in thees cases was reduced from 93 tons to almost negligible.

Safety in Ports in Relation to Nuclear-Powered Vessels

By K. J. N. Wie

Inter-Governmental Maritime Consultative Organization

(This article officially entitled "Evaluation and Classification of Ports Which Are Likely to Be Wanted and/or Needed as Ports for Nuclear-Powered Ships" was presented by Mr. K. J. N. Wie to the Symposium on Nuclear Ship Propulsion with Special Reference to Nuclear Safety, which was jointly sponsored by the International Atomic Energy Agency and the Inter-Governmental Maritime Consultative Organization at Taormia, Sicily, Italy, November 14-18, 1960. It has been reproduced here by the courtesy of Mr. K. J. N. Wie and Mr. Ove Nielson, Secretary General, IMCO.—Editor)

At the International Conference on Safety of Life at Sea in London this summer, regulations for nuclear-powered ships were agreed to for inclusion as chapter VIII in the new safety convention. As an annex to the convention, various recommendations on the more technical aspects of such ships were also agreed to.

Some of the regulations, particularly regulation 7 and 11, bear directly on the subject matter. Regulation 7 requires that for each nuclear-powered ship a safety assessment should be prepared, which should be made available in advance to the government of a country which a nuclear-powered ship intends to visit, in order to evaluate the safety of the ship. Regulation 11 permits a government to carry out a special control of a nuclear-powered ship before entering the ports of its country, in addition to the other controls and surveys required and permitted by the convention. At the conference, however, the opinion of the various member states differed widely with regard to these two regulations. According to the Norwegian philosophy at this stage of development, these regulations would seem to indicate the right and the necessity of considering all aspects of an intended port of call when evaluating the safety assessment of a nuclear-powered ship

A land-based reactor will as a rule be situated where it will cause the least danger to the population and to food and water resources. Accidents are inherent in the plant itself and possible accidents to be considered are usually of internal nature. On the other hand the very nature of international commerce makes it necessary for a nuclear-powered ship to call at more or less densely populated areas. Furthermore, such a ship is subject to the same navigational and marine hazards as any other ship, hazards of such nature as may cancel usual safety measure of a shipborne reactor. Consequently it seems obvious that it will be necessary to evaluate the ports or areas which a nuclear-powered ship intends to visit, in the same manner as the area surrounding a land-based reactor is evaluated regarding environment hazards. The characteristics of ports must be considered with a view to classifying their suitability as ports of call (loading or discharging ports) for nuclear-powered ships, based on the safety assessment.

The various ports may also be valued against each other taking into account the various types of reactors which may be installed in ships, and the safety measures taken on board. In this way it may be possible to classify or grade each port as regards suitability for visits of nuclear-powered ships. How this grading should be effected has not yet been discussed in Norway. However a nuclear-powered ships safety committee has been officially appointed and one of this committee's main tasks is to carry out such an evaluation and classification of the main Norwegian ports.

The committee has come to the conclusion that each port which might pe used as a port for nuclear-powered ships should be evaluated as regards suitability, considering possibilities of accidents caused by outside causes, consequences of an accident and possibilities of reducing such consequences as well as control procedure and conditions imposed for an intended call.

In this respect it is suggested that the following characteristics and aspects related to each port should be taken into account:-

1. The nature of the waters such as approaches, distance, shoals and current and tidal conditions.

2. Density of traffic, frequency of collisions and groundings relative to the vessels' tonnages and speed.

3. Prevalence of fot and ice and wind and weather conditions.

4. Pilotage, radiostations, lights, buoys and feasibility of radar observations e.g. safety of navigation in the approaches to the port.

5. Berths, loading and discharging arrangements of the port. Whether the ships must be locked in and out of dock.

6. Airports in vicinity.

7. Mine danger in surrounding waters.

8. Sabotage.

9. Possibilities of accidents due to internal causes.

10. Capacity of shipyards and cranes at or near the port.

11. Tugboats available.

12. Preparedness as regards communications and warning arrangements in approaches and in the port. Capacity of fire services in the port.

13. Anchorages and places suitable for beaching in or near the approaches to the port.

14. Salvage possibilities of the port or neighbouring ports, also equipment and capacity.

15. Possibility of decontamination in the immediate vicinity of the place where the ships normally are moored or anchored.

16. Possibility of reception and storage or radioactive materials.

17. Density of population.

18. Meteorological observations such as velocity and direction of wind, downpour, turbulence and inversion relative to geographical conditions.

19. Oceanographic observations such as height of tide, replacement of water, and marine life. In this connection I may mention that in a certain fiord in Norway where one of the largest cities is situated the water is reckoned to be replaced only once a year.

20. Agriculture, fisheries and industries within the area likely to be affected by an accident.

21. Goods storage in the port and in the vicinity of the port.

22. The Port's fresh water resources and catchment area.

23. Importance of the port as a communications centre.

24. Damage claims (insurance), also relative to neighbouring countries.

25. It is further suggested that the following subjects of a genera nature should be considered, based on the above mentioned evaluation of the various conditions of the ports and their approaches.

a. Water (or waterways) and ports for which a permit may possibly be given for nuclear-powered ships to enter. In this connection I may mention that along the Norwegian Coast there are several internal natural waterways, some of which are very narrow, but also very important to our coastal traffic. The consequence of a nuclear-powered vessel grounding in such waters could be a very serious blow to our coastal traffic.

b. Conditions which should be imposed regarding safety measures etc. and what control should be carried out.

c. Who (which authorities) should deal with applications for visits of nuclear-powered ships, and how should applications be dealt with.

d. How should a vessel act in a possible accident and which authorities should then be notified and how should they act.

Finally I may point to the 1960 Safety of Life at Sea Convention.

Article VI. Suspension in case of War.

This article gives a member state the right to suspend the operation of the whole, or parts of the convention in case of war or other hostilities.

I believe that this article has no bearing on nuclear-powered vessels, but still war or other hostilities may also have to be taken into account when evaluating the various ports suitability as ports for nuclear-powered vessels.

Article VI. reads as follows:

(a) In case of war or other hostilities, a Contracting Government which considers that it is affected, whether as a belligerent or as a neutral, may suspend the operation of the whole or any part of the Regulations annexed hereto. The suspending Government shall immediately give notice of any such suspension to the Organization.

(b) Such suspension shall not deprive other Contracting Governments of any right of control under the present Convention over the ships of the suspending Government when such ships are within their ports.

(c) The suspending Government may at any time terminate such suspension and shall immediately give notice of such termination to the Organization.

(d) The Organization shall notify all Contracting Governments of any suspension or termination of suspension under this Article.

Naess Sovereign Delivered

The Naess Sovereign, the largest tanker (87,500 tons d.w.) ever built by Japanese shipyards was delivered to owners on January 20 at Nagasaki Shipyard of Mitsubishi Shipbuilding and Engineering Company. The vessel is one of the two tankers ordered by Naess Shipping Company of the United States. She left Nagasaki on her maiden voyage to the Persian Gulf on the 21st to engage in the carriage of crude and refined oil between the Percian Gulf, Australia and the Philippines. Her sister vessel Naess Champion now under construction is scheduled for delivery at the end of May 1961. Her principal particulars are: Length, 254.00 meters; Breadth 37.20 meters; Depth, 19.50 meters; Draft, 14.33 meters; Gross tonnage 57,500; D.W. tonnage, 87,-500; service speed, 16 knots; and price, about ¥4,200,000,000.

* * *

First Drag Suction Dredger Completed

Completed at Yokohama shipyard of Mitsubishi Nippon Heavy Industries, Ltd. the drag suction dredger Kairyu Maru (3,200 tons d.w.) was delivered on February 4 to owners, the Second Port and Harbor Bureau of the Transportation Ministry. The vessel, which is the first of its kind to be built in Japan, will engage in dredging in Nagoya Port.

* * *

Hikawa Maru Kanko K.K. Formed

Hikawa Maru Kanko K.K. was formed on February 27. The company with a capital of ¥300,-000,000 intends to operate a youth hostel by using the Hikawa Maru, NYK's last passenger vessel surviving World War II, which withdrew from her active service last fall. Its business is scheduled to be commenced at the end of April. Its head office is located at the Yusen Building, No. 9, 3-chome, Kaigan-dori, Naka-ku, Yokohama.

Projects Underway in Long Beach Harbor

As the Port of Long Beach begins its second half-century,, a series of major projects mark the harbor's determination to maintain the phenomenal growth for which it has become known.

First work slated for completion is a $1,250,000 super tanker terminal at Berths 118, 119 and 120 on Pier E, scheduled for formal opening in February.

The 20-acre terminal, under 35-year lease to Richfield Oil Corp., will unload the monster 100,000-ton tankers by means of four "chiksan" units, remote-control pipe lines which will do away with the need for the old type flexible oil lines.

Richfield has constructed a 24-inch pipe line to its tank farm on Channel 2, a mile away. A 14-inch return line is provided for bunkering ships.

A fairway 50 feet deep has been dredged from the breakwater harbor entrance for the huge tankers, some of which draw as much as 48 feet of water when loaded.

The port's versatility will receive a boost next July when the newest and most modern grain facility on the Pacific Coast will be completed at Berth 211 for lease to Koppel Bulk Terminals over a 40-year period.

Speediest of its kind in California, the terminal will be able to load ships at a rate of 1,300 tons or 43,000 bushels per hour. Storage capacity will be more than 810,000 bushels.

The $2,500,000 plant will include a 17-story workhouse, which will be a harbor landmark as one of the tallest structures in Southern California.

A year after completion, the facility will be handling more than 10 million bushels annually, it is predicted.

Also under way in the harbor is a $2,000,000 project to reconstruct the wharf at Berths 3 and 4, Pier A, including rehabilitation of the 14-year-old transit shed at a location 18 feet higher, a move made necessary by subsidence. Engineers estimate that 300,000 cubic yards of fill will be needed to raise the area.

When the job is completed early in 1962, the Port will be one of the few in the world with no timber wharves. The contract with Guy E. Atkinson Co. calls for replacement of the timber piles at A-3 and 4, the only wooden wharf structure left in the harbor, with pre-stressed concrete piling.

* * *

Mitsui Line to Join Conferences

Mitsui Steamship Company has decided to accept the proposal made by the Japan Outward Freight Conference and other interested Conferences and replied to that effect to them on February 18. With this, the Company will formally become a full member of the Japan Outward Freight Conference, the Japan Homeward Freight Conference and the Japan/Gulf of Aden and Red Sea Ports Conference and an associate member of the Far Eastern Freight conference as from June 1. Though some restrictions will be imposed on sailings, cargo booking, etc., the line will be allowed to independently operate the European services. It is expected that the admission of the Line to the conferences will enhance the international position of the Japanese maritime industry.

* * *

Mitsui's 50,000-Ton Dock

Construction work is progressing on Chiba works of Mitsui Shipbuilding and Engineering Company. Of the site amounting to 281.000 tsubo (1 tsubo=3.3 sq.m.) 180,000 tsubo has been reclaimed and the remaining reclamation is scheduled for completion at the end of March. A 50,000-ton graving dock 230 meters long, 45 meters wide and 10.50 meters deep, the largest of its kind in the Kanto District will be completed at the end of October and will come into operation in November.

* * * *

Daido to Represent Marchessini

Daido Line made announcement on February 28 that as from March 6 it will take the agency in Japan for Marchessini Lines, New York City operating the regular services to the United States. Daido will engage in cargo solicitation for the Lines. Marchessini has been admitted to the Japan Atlantic and Gulf Freight Conference and its membership application for the Transpacific Freight Conference of Japan is now pending. The company is now providing a monthly sailing each for the Pacific Coast and New York.

* * *

Double-Purpose Bulk Loader Planned for Los Angeles

A proposal for a $6,500,000 facility for unloading and loading bulk cargoes at the Port of Los Angeles was tentatively approved by the Board of Harbor Commissioners.

According to the port's General Manager Bernard J. Caughlin, the long-needed new facility will be the first double-purpose bulk-handler on the Pacific Coast.

"We envision unloading such commodities as chrome ore from India and the Philippines, rutile from Australia, bauxite from Jamaica and iron ore from Venezuela," he said. "Outbound bulk cargoes will include iron ore, potash, borax, petroleum coke, phosphate rock and coal."

Caughlin will negotiate details of the project with Scientific Bulkhandling, Inc., Los Angeles, and its affiliate, Natos Construction and Engineering, Corp., subject to final approval by the Board.

Scientific Bulkhandling, Caughlin explained, has applied to the Harbor Department for a 50-year lease on 18 acres of land in the Outer Harbor area, near the new supertanker terminal, and has offered to install a complete bulk loading and unloading facility there at a cost of approximately $4,500,000.

The port, as its financial contribution to the development, will construct a 1,200 foot-long wharf at an estimated cost of about $2,-000,000. Scientific Bulkhandling will operate the facility, paying the Harbor Department wharfage, dockage, land rental and other fees.

The equipment will be engineered to load 2,000 tons an hour and unload 800 tons an hour. Caughlin estimates the big facility will handle as much as 1,500,000 tons of bulk cargo a year.

Still Available !

By the Collaboration of the Jaan Port and Harbor Association and the International Association of Ports and Harbors,

"PRINCIPAL PORTS IN JAPAN"—1960

will be shortly published as a revised edition of the much appreciated publication on Japan's leading ports, which was first introduced in 1952. Since then, however, there have taken place considerable changes and remarkable improvements in those Japanese ports in facilities, operation, and what not. The revised edition, which has been compiled by the Japan Port and Harbor Association for inclusion of all of the up-to-the minute information and latest data, will, we believe, well meet the requirements of port, shipping and foreign trade people in the world.

As a revised edition of **"PRINCIPAL PORTS IN JAPAN"-1952**, the forthcoming publication will also come out in the same form, $11\frac{1}{4}$"x$7\frac{1}{2}$", with about 200 pages and many maps and diagrams.

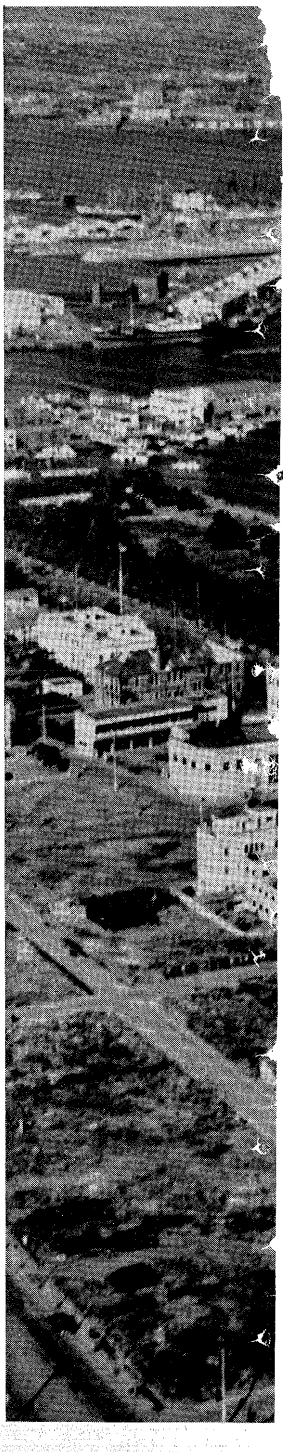
★ **The price is US $3.00 per copy, including sea mail postage.**

Purchase order will be accepted by

Central Secretariat of the International Association of Ports and Harbors

Rm. 715-A, N.Y.K. Bldg.
20, Marunouchi 21, Chiyoda-ku, Tokyo, Japan

Great merchant ships from around the world call at the Port of Los Angeles, leading cargo port on the Pacific Coast and natural gateway to the fastest growing market in the U.S. Typical is this scene where, after a quick discharge of overseas goods, cotton—one of the port's leading exports—is swung aboard.



As a symbol of the Port of Yokohama, the 106-meter Yokohama Marine Tower was erected and opened to the public January this year. It serves as a light house, maritime museum and tourist attraction. South Pier in left background.

Central Secretariat of the International Association of Ports and Harbors

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