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PORTS OF GALVESTON, HOUSTON, AND TEXAS CITY

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CORPS OF ENGINEERS, U. S. ARMY
AND
UNITED STATES SHIPPING BOARD

PORT SERIES No. 6

THE PORTS OF GALVESTON, HOUSTON, AND TEXAS CITY, TEXAS

24-26997

Prepared by the
BOARD OF ENGINEERS FOR RIVERS AND HARBORS
WAR DEPARTMENT
In cooperation with the
BUREAU OF RESEARCH
UNITED STATES SHIPPING BOARD

WASHINGTON
GOVERNMENT PRINTING OFFICE
1924

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WAR DEPARTMENT
CORPS OF ENGINEERS, U. S. ARMY
AND
UNITED STATES SHIPPING BOARD

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PORT SERIES No. 6

THE PORTS OF GALVESTON, HOUSTON, AND TEXAS CITY, TEXAS

U.S. Engineer dept.

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The following numbers of the port series have already been published and may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at the prices indicated:

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War Department,
Board of Engineers for Rivers and Harbors,
Washington, D. C., May 1, 1924.

Subject: Report on the ports of Galveston, Houston, and Texas City, Tex.

To: The Chief of Engineers, United States Army.

1. There is transmitted herewith report by the board on the ports of Galveston, Houston, and Texas City, Tex., prepared by this department and the Shipping Board as a result of the cooperation prescribed by section 8 of the merchant marine act, and in furtherance of the objects entrusted to the War Department by section 500 of of the transportation act of 1920.

2. The information contained in this report relative to the terminal and shipping facilities of Galveston, Houston, and Texas City was compiled by the statistical division of this office under the supervision of Mr. A. H. Ritter, chief statistician of the board, who has devoted his personal attention thereto. After compilation, the tables showing the facilities of the ports were forwarded to the district engineer at Galveston, and the results checked under his supervision.

3. Information regarding our ports has not heretofore been available in such form as to afford for a selected port all data essential to a vessel desiring to call or to enable a shipper to make a comparison of the facilities, services, and charges at one port with those at another for the particular class of business in which he is interested. The report includes information regarding the traffic movements through the ports and the development of foreign and domestic trade. On account of the value of the information to commerce and shipping interests, and to the successful operation of the American merchant marine, it is recommended that the report be published with the accompanying illustrations.

For the board:

G. R. Young,
Resident Member of the Board.

[First indorsement.]

Office Chief of Engineers, *May 1, 1924.*

To: The Board of Engineers for Rivers and Harbors, Washington, D. C.

Approved.

H. Taylor,
Acting Chief of Engineers.

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INTRODUCTION.

This is No. 6 of a series of reports on the principal ports of the United States, prepared to meet the needs of the War Department in its development of harbors and its encouragement of port facilities, of the Shipping Board in its promotion of an American merchant marine, and of commercial and shipping interests in the upbuilding of their business.

The War Department is required by law to assist the various ports in the design and construction of modern port terminals of such character as to handle the particular business of the port in the most expeditious and economical manner. The United States Shipping Board in its encouragement of an American-owned merchant marine can afford to overlook no detail which will contribute to the economy of ship operation, and the curtailment of the time spent by vessels in port is an important item in ship economics. Before they can properly function in the encouragement of ports and ships, both the War Department and the Shipping Board must have the facts, without which the shipping business can not be successfully conducted, nor the port terminal correctly planned and economically operated.

Before establishing shipping agencies, the manufacturer must consider every factor influencing the prompt and economical movement of his products. Traffic does not always follow the shortest route, or that having the lowest line-haul rate, but it will usually be found that there are sound reasons for this seeming disregard of economy. Frequently the principal of these reasons is to be found at the port through which the traffic must pass. In order to attract business a port must first provide the facilities essential for handling the particular commodities which it is likely to be offered, and this requires a detailed study of production and consumption within the territory naturally tributary to the port, and the provision of equipment especially designed to meet the several requirements of this traffic. The ships calling, or likely to call, at the port must be studied in the endeavor to provide the facilities and render the service which will permit their most rapid turnaround. The railroad situation is frequently a controlling element in port success. There should be ample trackage serving the terminal or terminals, with the most economical interchange both between the several railroads entering the port and between these railroads and the ship. Not only should the physical

characteristics of the terminal with regard to the coordination between railroad and ship be examined, but the railroad rates should be scrutinized, as in various instances a commensurate utilization of a port has been rendered impracticable by unfavorable rate conditions.

The absence of any one essential may prevent what should be an economical route or port from securing its tributary business. The trouble may be the lack of adequate terminals, the absence or inaccessibility of storage facilities, the imposition of excessive switching or wharfage charges, the absence of repair or docking facilities, the lack of well-balanced cargoes and frequent sailings, or other conditions affecting the movement of goods through the port and ability of vessels to earn a fair revenue. Port coordination and management are apt to play a considerable part in the success or failure of the port community to attract and hold business. Where possible, the control of all deep-water frontage by the public, as represented by the State or municipality, including the ownership and operation of a belt-line railroad connecting all rail lines and all terminals, is a practical solution of the coordination problem, and is an effective remedy for many of the ills that now exist.

Ports should not have to depend upon the good will or selfish interests of either railroads or steamship lines to develop business. The railroads may prefer to have the business go elsewhere, and the water carriers could scarcely be expected to undertake extensive operations designed to bring goods to a particular port. In other words, the development of traffic should be regarded as one of the permanent functions of the port itself. Among the important objects, therefore, which it is hoped to attain from this series of reports is a more general appreciation of the benefits to be derived from proper development of our ports.

In obtaining the necessary information for our purpose, it has been deemed of great importance that the statistics be compiled on an equal basis for all ports, and a comprehensive questionnaire and supporting tables, which were prepared as a basis of port information, have been as nearly as practicable alike for all ports under examination. These questionnaires and tables have passed the scrutiny of the office of the Chief of Engineers of the War Department, the Division of Operations of the Shipping Board, and the Bureau of Foreign and Domestic Commerce of the Department of Commerce. The reports cover the port and harbor facilities for shipping, port charges, railroad systems serving the port, local conditions and costs of transfer between rail and water, and also the cost of transportation between the port and the interior. The important conditions governing the movement of traffic through the port are followed,

and much additional information presented of value to operators of vessels, and to producers and manufacturers seeking the most economical outlet for their finished products and for the importation of raw material.

The reports contain extensive information relative to the character and amount of commerce handled through the port, its origin and destination, the tendencies with relation to the development of traffic, and the adaptability of the physical facilities to meet the requirements of business which the port should serve.

THE PORT OF GALVESTON, TEX.

PORT AND HARBOR CONDITIONS.

GENERAL DESCRIPTIONS.

Galveston Bay is a large, irregularly shaped, shallow body of water in the coast of Texas, about 285 miles westward from Southwest Pass, Mississippi River, and 755 miles westward from Key West, Fla. The bay is about 30 miles long in a general north-northeast and south-southwest direction, about 17 miles wide at its widest part, and has general depths of 7 to 9 feet. It is nearly separated into two parts about midway of its length by a chain of small islets and shoals known as Redfish Bar, through which a channel has been dredged near its western end. That part of the bay northward of Redfish Bar is generally designated as the "Upper Bay," the part southward as "Lower Bay." The northeastern end of the upper bay is known as Trinity Bay. Galveston Bay is the approach to East and West Bays, Houston Ship Channel, and the cities of Galveston, Texas City, and Houston as well as to numerous smaller towns and bayous.

Galveston Entrance is the approach to the bay and harbor from the Gulf of Mexico. It is between Bolivar Peninsula, lying northeastward, and Galveston Island, lying southward, and has a least depth of 32 feet in a channel 800 feet wide. The entrance is obstructed by a bar which extends nearly 4 miles into the Gulf; this bar has been improved by dredging and the construction of two converging jetties about 4 miles long and 1¼ miles apart at the outer end.

Galveston Harbor is the name generally applied to the entrance and southern part of Galveston Bay. It is about 345 miles west of the mouth of the Mississippi River, 180 miles northeast of Aransas Pass, and 280 miles northeast from the Rio Grande. The harbor extends from the Gulf through the pass between the jetties on Galveston Island and Bolivar Peninsula to Bolivar Roads, where it connects with the ship channels to Galveston, Houston, Texas City, and Port Bolivar. It is divided into two parts, Bolivar Roads and Galveston Channel. The former includes the deep water between Bolivar Point on the north and Pelican Island and Fort Point on the south. It affords good anchorage in 30 to 50 feet for large vessels at all seasons except during hurricanes, and during the winter months furnishes refuge for coasting vessels.

Galveston Channel extends from a point in Galveston Harbor between Bolivar Peninsula and Fort Point across the former inner bar to and along the wharf front of Galveston, and has a length of about 5 miles and a width of 1,200 feet. It is about 5 miles southwest of Port Bolivar and 7½ miles southeast of Texas City. A dike along the southerly side of Pelican Spit prevents a sea in Galveston Channel during northers.

The Houston Ship Channel connects Galveston Harbor, at a point opposite Port Bolivar, with the city of Houston, extending 50 miles in a northwesterly direction across Galveston Bay, through the San Jacinto River and Buffalo Bayou to the turning basin. The channel has a width of 250 feet on the bottom for 25 miles across Galveston Bay, 150 feet thence for 4½ miles to Baytown, and 100 feet the remaining distance inland to the turning basin, which is about 1,000 feet wide. The channel is well marked by beacons and spar buoys. There are six passing points in the channel marked with pile beacons for moorings and signboards. All but one of these turnouts are 1,000 feet in length and have 100 feet extra bottom width. One is only 700 feet long, but has the same bottom width as the others.

The Texas City Channel extends from deep water in Galveston Harbor off Bolivar Peninsula through Galveston Bay to the wharves at Texas City, a distance of about 7 miles. It is protected on its northerly side for about 4 miles out from the mainland by a timber and earth dike 600 feet from the axis of the channel. This channel has a width of 300 feet.

There is a dredged channel connecting Galveston Harbor with Port Bolivar. It is about 4,500 feet long and 200 feet wide on the bottom, terminating in a turning basin 1,600 feet long, having an average width of about 750 feet.

Information regarding depths available in these channels is given later in the report.

The City of Galveston, situated near the eastern end of Galveston Island, covers the entire width of the island southwestward to the city limits and has a total area of 15 square miles. The wharves are built on the north side of the city and abut on Galveston Channel. The south side of the city fronts upon the Gulf of Mexico and is protected by a concrete sea wall 17 feet high. Galveston is connected with the mainland by Galveston causeway, a concrete and earth viaduct 1¾ miles long, crossing the northerly end of West Bay. On the causeway are carried the tracks of four railways, three steam and one electric, and a roadway for vehicles and pedestrians. The draw apron, about midway of the causeway, has a lift opening 100 feet in width.

TIDES.

The maximum normal tidal action is 2 feet at the end of the jetties, 1.5 feet at Galveston, and 0.7 foot at Morgan Point, and occurs near the time when the moon's declination is greatest, north and south. At such times there is but one high tide daily. When the moon is near the equator there are two high tides daily, though small.

The tides are irregular, depending almost entirely upon the force and direction of the winds. In this part of the Gulf east and southeast winds raise the water in the bays from 2 to 4 feet above mean low tide. The winds then suddenly change to the north and blow steadily and with considerable violence for several days, blowing the water away from the bay and reducing the level of the Gulf and the bay to 2 or 3 feet below mean low water.

TIDAL CURRENTS.

The currents are largely dependent on the force and direction of the winds. Easterly and southeasterly winds cause the current to set inward between the jetties, sometimes continuously for three days; northers then cause an outward current of increased velocity. The normal tidal currents, unaffected by wind, also have considerable velocity at times on the bar at the entrance, along the wharves, and in the dredged cuts in the bay and tributaries.

ANCHORAGES.

The best anchorage for large vessels is in Bolivar Roads, between Bolivar Point and Pelican Island and Spit. The depths range from 18 to 48 feet and the bottom is good holding ground. The quarantine anchorage is northwestward of Fort Point. On account of the amount of traffic, Galveston Channel can be used only for temporary anchorage by steamers preparing to berth at the wharves or after leaving the wharves before going to sea.

In Galveston Bay small craft can anchor anywhere outside of the dredged channel where the depth is sufficient. During a norther, however, the water is blown from the bay and vessels of 5 feet draft will lie on the bottom. Vessels outside of the bar, if prevented from entering by a norther, can anchor in about 30 feet, with Bolivar Point Lighthouse bearing about northwest. The holding ground is good and there is ordinarily but little sea.

WEATHER CONDITIONS.

Open season for navigation.—Galveston Harbor and Channel are navigable throughout the year.

Prevailing winds.—The prevailing winds are northerly from November to February and southerly the remaining months. Northers

occur occasionally from December to March. These gales, although occasionally blowing with a velocity of 40 miles, are not dangerous to vessels anywhere close to the coast, as they blow directly offshore and the sea is not heavy. This region is subject to tropical storms of great intensity, which usually occur between the months of June and October.

Fogs.—From November to April, inclusive, fog may occasionally be encountered near the coast. It is most dense in the vicinity of the harbor entrances and the prominent points, such as Cape San Blas. Usually southerly winds bring it in and northerly winds clear it away.

Precipitation.—The Weather Bureau reports for a period of 36 years show a mean annual precipitation of 47.06 inches. The rainfall was heaviest during this period in August, with 5.01 inches, and September, with 5.41 inches. During 1921 the annual precipitation was 39.90 inches. The table below gives the mean precipitation for each month.

Temperature.—The annual mean temperature is 69° F. Weather Bureau reports for the past 37 years show the annual mean maximum temperature to be 74.8° F. and the annual mean minimum 64.9° F.

Meteorological data.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Daily mean maximum temperature for 37 years (°F.).												
59.2	61.2	67.9	74.1	80.3	86.1	88.2	88.0	84.4	77.5	68.6	62.0	74.8
Daily mean temperature for 37 years (° F.).												
48.2	50.4	57.8	64.7	71.1	76.9	78.7	78.4	75.1	67.7	58.1	57.3	64.9
Maximum wind velocities and direction for 51 years.												
64 S.	59 N.	61 N.	72 N.	60NW.	62 SE.	68 E.	93 E.	84 NE.	62NW.	54NW.	54 N.	93 E.
Prevailing direction of wind for 20 years.												
SE.	SE.	SE.	SE.	SE.	SE.	S.	S.	SE.	SE.	SE.	SE.	SE.
Mean precipitation (inches) for 36 years.												
3.62	3.10	2.90	3.13	3.23	4.75	3.98	5.01	5.41	4.18	4.02	3.73	47.06

HEALTH CONDITIONS.

The health conditions at Galveston are excellent. There is no special season when unsanitary conditions prevail. The water supply of the city comes from deep wells located on the mainland and is considered to be of good quality. Although the anopheles mosquito is found in and about Galveston, few cases of malaria occur except imported ones. The stegomyia mosquito is also found in this locality, but yellow fever has not been present for a number of years. A few human cases and several rodent cases of bubonic plague were found during 1920, but extensive antiplague measures have been in progress under the supervision of the Public Health Service ever since the disease was discovered, and a majority of structures in this city are now rat proof.

BRIDGES.

There are no bridges across the Galveston channel. The city is connected with the mainland by Galveston Causeway, a concrete and earth viaduct 1¾ miles long, crossing the northerly end of West Bay. The draw span, about midway of the length of the causeway, has a lift opening of 100 feet width.

HARBOR IMPROVEMENTS BY THE UNITED STATES.

GALVESTON HARBOR.

The original project for the improvement of this harbor was adopted by Congress June 23, 1874. The existing project began with the authorization of the present jetties by the act of August 5, 1886, and was later extended by the acts of March 2, 1907, and July 18, 1918. The project provides for two rubblestone jetties, one extending from Galveston Island and the other from Bolivar Peninsula to the 30 foot contour in the Gulf of Mexico. The present length of the north jetty is 25,907 feet, and of the south jetty 35,900 feet. The act of July 18, 1918, provided for an experimental channel 35 feet deep at mean low tide and 800 feet wide from the Gulf to Galveston Channel, a distance of 6 miles, and its maintenance for a period of two years. Work is now being prosecuted under a slightly modified plan, which contemplates dredging to 34 feet on the outer bar only where heavy wave action is encountered and doing only such occasiona maintenance dredging on the inner bar as will insure a depth of about 32 feet. On March 20, 1922, the outer bar channel had a depth of 34 feet and width of 800 feet, and the inner channel had a depth of 31½ feet with a width of about 600 feet.

GALVESTON CHANNEL.

The original project for improvement of Galveston Channel was adopted in 1902, and as modified in 1907, 1910, and 1916 constitutes the existing project. This project provides for a channel 30 feet deep at mean low tide and 1,200 feet wide from the outer end of the old inner bar, near Fort Point, to Fifty-first Street in the city of Galveston; with authority for its extension when the interests of navigation and commerce require it, with a width of 1,000 feet and depth of 30 feet to Fifty-seventh Street. It further provides for an extension of the existing sea wall, which lies along the Gulf front of Galveston, from its angle at Sixth Street and Broadway to a point abreast and in front of the nearest battery at Fort San Jacinto. This extension of the sea wall is for the purpose of protecting the outer end of the channel from the effect of hurricanes.

On June 30, 1922, the ruling depth in the channel was about 30 feet for a least width of about 400 feet. The various parts of the project are in the following states of completion: Sea wall, 77 per cent; sea-wall fill, 0 per cent; and Galveston Channel dredging, 50 per cent; making the entire project about 36 per cent complete.

WATERWAY BETWEEN GALVESTON AND CORPUS CHRISTI.

The intercoastal waterway system along the coast of Texas from Galveston to Corpus Christi, a distance of about 202 miles, connects various natural waterways with the Texas ports. The improved sections of the intercoastal waterway consist of the West Galveston Bay and Brazos River Canal, the channel between Brazos River and Matagorda Bay, the channel from Pass Cavallo to Aransas Pass, and the channel from Aransas Pass to Corpus Christi. The first three of these have been completed to a project depth of 5 feet at mean low tide, with a bottom width of 40 feet. The existing project for the improvement of the channel from Aransas Pass to Corpus Christi provides for a channel 25 feet deep at mean low tide and 200 feet wide on the bottom, with widened places for passing, from deep water at Port Aransas through Turtle Cove and Corpus Christi Bay to the shore line at Corpus Christi. Certain work is to be done by local interests, including the construction of a turning basin and a channel connecting this basin with the Government channel. No work has yet been done on the existing project. The ruling depth on June 30, 1922, was about 5 feet at mean low tide in the present channel and about 10 feet in the turning basin.

TERMINAL IMPROVEMENTS.

The terminals used for coastwise and overseas purposes were constructed by the Galveston Wharf Co. and the Southern Pacific Terminal Co. There are no publicly owned terminals. The city of Galveston, however, is the largest individual stockholder of the wharf company, owning one-third of the property of the company, including all improvements. The most recent water-front improvements include the construction of a wharf by the Gulf Refining Co. and a pier by the Mexican Petroleum Corporation. Detailed information regarding these facilities is given under the general heading of piers, wharves, docks, etc.

OWNERSHIP OF WATER FRONT.

The Galveston Wharf Co. is the principal owner of the improved city frontage along Galveston Channel. The property of this company extends from Tenth to Forty-first Streets, with linear frontage of about 2.5 miles and a frontage, including slips, of about 5.9 miles.

The only improved water frontage held by other interests is that of the Gulf, Colorado & Santa Fe Railway Co., extending from Fourth to Tenth Streets and adjoining on the east the property of the Galveston Wharf Co., and that of the Southern Pacific Terminal Co., extending from Forty-first to Fifty-first Streets and adjoining on the west the Galveston Wharf Co. property.

The Southern Pacific Terminal Co. owns 318 acres of land, of which 215 acres are in active use. This company owns a channel frontage of 4,290 feet, of which 1,350 feet are developed, giving a wharfage, including slips, of 6,890 feet.

The Chicago, Rock Island & Pacific Railway Co. owns a section of unimproved frontage extending from Fifty-first to Fifty-seventh Streets and adjoining on the west the property of the Southern Pacific Terminal Co.

The city of Galveston owns none of the improved water front on Galveston Island, but it owns all of the land west of the United States immigration station on Pelican Spit, having a channel frontage of 23,200 feet. About 4,000 feet of this frontage is leased by the city to various concerns at very low rental. The remainder of this land is susceptible of development, which, when accomplished, will double the capacity of the port.

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PORT CUSTOMS AND REGULATIONS.

FEDERAL ACTS AND REGULATIONS.

General regulations.—The port is open at all hours. Vessels may be cleared by agents between the hours of 9 a. m. and 4.30 p. m.

PUBLIC HEALTH SERVICE, TREASURY DEPARTMENT.

Quarantine.—The national quarantine station is located at the north end of Pelican Spit at the entrance to Galveston Channel. Vessels are boarded by the doctor at the quarantine anchorage in Bolivar Roads.

Hospitals.—Relief is furnished at Galveston as provided in the United States Public Health and Marine Hospital Service regulations for stations of Class II. The nearest marine hospital is at New Orleans. There are two well-equipped hospitals at Galveston—the John Sealy Hospital, located at Avenue B and Ninth Street, and St. Mary's Infirmary, located at Avenue D and Eighth Street.

The following is a digest of the principal regulations of the United States Public Health Service:

The exclusion from the United States of the quarantinable diseases of cholera, plague, yellow fever, typhus fever, smallpox, leprosy, and anthrax is effected through the inspection abroad of vessels, their crews, passengers, and cargoes by American consular or medical officers. They are also inspected, detained, and treated in this country by officers of quarantine stations which are established at or near the principal ports. These stations are provided with adequate equipment and personnel for the effective treatment of such vessels and contents when infected or suspected of being infected with quarantinable diseases.

With the exception of vessels from certain Canadian, Mexican, and Cuban ports, and certain United States naval vessels, all vessels arriving at American ports from abroad must, before entering, present for examination to quarantine officers stationed there—

1. *Bills of health* in duplicate issued to them at ports of departure by American consular or medical officers whose authority so to act is conditioned upon the full observance by vessels concerned of American quarantine requirements, including inspection, applicable abroad to vessels, contents, and full personnel.
2. *Supplemental bills of health* similarly issued at ports of call en route.
3. *Passenger and/or crew list.*
4. *Clinical records* covering all cases of illness, births, and deaths at sea, maintained by ships' physicians.

5. *Cargo manifests and necessary disinfection certificates* relating thereto issued by the American examining officers abroad.
6. *Ships' logs* when desired and during inspection.
7. *Inspection cards* issued by American examining officers abroad to such steerage passengers as may be given transportation.

Quarantine inspection at American ports is required of (*a*) all vessels arriving from abroad with the exceptions noted above; (*b*) all vessels with sickness aboard; and (*c*) vessels from domestic ports where cholera, plague, or yellow fever prevails, or where smallpox or typhus fever prevails in epidemic form. Such vessels shall be considered to be in quarantine under the necessity of observing full quarantine requirements until released, without or after detention, and treatment. Inspection shall be made between sunrise and sunset except in cases of vessels in distress or carrying perishable cargoes, and certain regular line vessels.

Vessels with contents and personnel shall be placed in quarantine for treatment if bearing, having borne en route, or considered by quarantine officers as bearing quarantinable diseases; or if arriving during certain seasons from ports infected or suspected of infection from yellow fever. Vessels shall remain in detention until freed from infection, when they will be granted free or provisional pratique to enter port. Passengers and crews may be detained for a longer or shorter period than vessels, according to circumstances. Quarantine officers in charge of detained vessels are clothed with such full authority and control over them as will insure the most effective execution of quarantine measures.

A departing vessel, foreign bound, must obtain a consular "bill of health" from the consul of the foreign country of destination. Such vessels must also obtain from an officer of the Public Health Service, or in his absence from the collector of customs, a "port sanitary statement," indicating the number of cases of certain diseases and the deaths therefrom at the port of departure during the two weeks prior to sailing, for presentation to the quarantine officer at the first foreign port of call.

CUSTOMS SERVICE.

The customhouse is located five city blocks south of Pier No. 25. It is open from 9 a. m. to 4.30 p. m. except on Saturdays, when it closes at 12 noon. It is not open on Sundays or national holidays. The working hours of the customs inspectors are from 8 a. m. to 5 p. m. daily. Under special arrangements, covered by the customs regulations, inspectors are assigned to duty outside their regular hours.

The surveyor of customs superintends and directs all inspectors, weighers, measurers, gaugers, guards, and collector's laborers.

Transfer of commodities between vessel and customs warehouses is made by persons or firms licensed for that purpose. The cargo is delivered by inspectors of customs, but no receipt is given for cargo. The cartman or lighterman conveying the merchandise is held liable under his bond for the prompt delivery of cargo in sound condition, unless otherwise noted on the ticket. Any negligence or carelessness is cause for revocation of license.

The following statement indicates briefly the more important features of United States customs control over vessels and freight in overseas commerce:

DIGEST OF CUSTOMS REGULATIONS.

Customs control.—Vessels carrying freight or passengers, or in ballast, inward bound from foreign ports come within the jurisdiction of American customs laws when within 4 leagues of the coast and enter customs control when boarded by customs officers upon their arrival within any collection district.

Boarding officers.—Masters of such vessels must deliver to boarding officers for inspection the original cargo manifest and one copy thereof for each port at which freight is to be unladen; if an American vessel, the certificates issued by American consular officers abroad covering the carriage thereon to the United States of any returned, destitute American seamen; the certified copy of the crew lists; and copies of seamen's customs statements. If a vessel carries passengers, a list thereof shall be submitted for examination if required.

A boarding officer, after comparing the original manifest with the copies thereof, shall certify on the former as to their production and on the copies as to their agreement with the original, and shall transmit a copy to the collector of customs of each district to which cargo is consigned. He shall, if the vessel be American, muster such destitute Americans as may be on board in order to verify consular certificates relating thereto; shall check the crew with the crew list; and shall seal or otherwise secure hatches covering cargo, and place under seal surplus sea stores.

Reporting arrival of vessel.—The master of a vessel arriving foreign must report its arrival within 24 hours thereof at the customhouse; he must, before entry, deposit all foreign mail on board in the nearest post office and take a receipt therefor; if the district be a nonnaval office district, he must mail one copy of the manifest to the Auditor for the Treasury Department, Washington; and he must make entry at the customhouse within 48 hours after arrival, exclusive of Sundays and holidays. If calling merely for bunker coal, customs entry and clearance are not required.

Formalities to be observed upon arrival and entry.—Upon entry the master must deposit with the collector: (*a*) Certificate of pratique issued by quarantine officer upon arrival; (*b*) original and two copies of cargo manifest; (*c*) duplicate bills of health if vessel arrives from a port at which American consular or medical officer is stationed; (*d*) the ship's register and clearance and other papers issued to it at last port of departure for the United States, the register, if vessel be American, to be retained by collector until clearance is granted; (*e*) list of sea stores; (*f*) statement of American consular services without fee to the vessel on its last voyage and copies of receipt from consular officers covering fees for services performed; (*g*) receipt covering all foreign mail delivered at nearest post office upon arrival; and, if the vessel be American, he must state under oath that delivery has been made at the proper foreign port of all mail received before last clearance from the United States, and also, if the district has no naval office, that he has mailed a copy of the cargo manifest to the Auditor for the Treasury Department, Washington.

Incoming passengers.—If vessels carry steerage passengers, compartments occupied by them will be measured by customs inspectors on arrival. A correct copy of the passenger list must be deposited with the collector and a head tax of $8 for each alien on board must be paid to him by the master or other representative of the vessel within 24 hours after its entry.

Vessels of foreign registry.—If the vessel be of foreign registry the master must within 48 hours after arrival deposit with the consular officer of the nation to which it belongs, if this practice be reciprocal between that nation and the United States, the register or other document in lieu otheref, together with clearance and other papers issued to the vessel at the port of departure for the United States; and the certificate of that officer that the papers have been so deposited must be delivered to the collector. Such papers shall not be returned to the master by that officer until the former exhibits a clearance from the collector.

Assumption of control of vessel by customs officials.—Entry of the vessel having been made, the necessary permit for its discharge is issued by the collector; discharging inspectors are assigned to superintend unloading and delivery of cargo and customs guards are posted. Discharging inspectors must take possession of specie and valuables in charge of pursers as soon as possible after they first board the vessel.

Time allowed for unloading vessel.—The legal time allowed for unloading by customs regulations is as follows: Vessels of less than 500 tons, 10 working days after entry; 500 tons and less than 1,000 tons, 15 working days; 1,000 tons and less than 1,500 tons, 20 working days; and 1,500 tons and upward, 25 working days. If additional discharge time is required an extension not to exceed 15 days will be allowed by the collector; but inspector's compensation for attendance after legal time shall be paid by the vessel. "Working days" do not include the day of entry, legal holidays, or stormy days when discharge would endanger cargo's safety. Unloading between 6 p. m. of any day and 7 a. m. of the following day will be allowed only under authority of a permit issued by the collector when the nature of the cargo or conditions at the pier are such that it will not jeopardize customs revenue. Similar permits are required for unloading or loading on Sundays and holidays. Cargo remaining on board after the expiration of legal time, or additional period of 15 days, which is not recorded for transshipment to some other customs district or to some foreign place, may be taken possession of by the collector and stored at owner's expense.

Ballast.—Ballast of no mercantile value may be unloaded under authority of a customs permit. Ballast cargo or coal can not be taken on board vessels while discharging except on a lading permit.

Entry of goods.—Formal entry of imported merchandise is required to be made within 48 hours, exclusive of Sundays and holidays, after the entry of the importing vessel. Entry must be made of all importations, whether free or dutiable and regardless of their value, and is made principally for the following purposes: (*a*) Consumption; (*b*) warehouse, for storage for three years, if desired, without payment of duty; (*c*) warehouse and immediate exportation; (*d*) warehouse and transportation, and (*e*) transportation without appraisement.

Unless such production is impracticable, no merchandise exceeding $100 in value, except personal effects accompanying passengers and goods entered for warehouse and immediate exportation, is admissible into the United States without production, upon entry of the goods, of a "consular invoice" prepared before the shipment thereof, describing the goods and specifying the foreign sale price thereof and all charges assessed thereon to the point of exportation, and certified

by the American consular officer at the place of manufacture or exportation, or by designated substitutes. The consular invoice and the covering bill of lading or express receipt, or bonds providing for their production, must be presented upon application for entry together with, when required, a statement by the manufacturer abroad showing the cost of production and the purchase price of the goods.

Delivery of goods.—Entries having been made in writing according to prescribed form by the consignee or agent and duties estimated and paid, or secured to be paid, necessary delivery permits are issued by the collector. Merchandise for which no delivery permit has been received within 48 hours after a vessel's entry shall be taken possession of by the discharging inspector and stored at owner's expense in general order stores unless an extension of time is granted by the collector. The collector will designate at the time of entry at least one package of every invoice, and not less than one in every 10 packages, except in special instances, for examination by the appraisers. All packages entered for consumption not specified for examination may be immediately delivered to the importer upon his filing a bond covering double the estimated value of the merchandise for the return of any packages so delivered within 10 days after the examination packages have been appraised. Cargo must not be removed from the pier, however, until necessary customs weighing, gauging, etc., has been done.

Delivery may be secured at dock of all free goods and of such goods entered for consumption as are not selected for appraisement. Packages containing dutiable goods entered for consumption and selected for appraisement will be delivered to the importer after examination if duties paid are found to have been sufficient. Goods selected for examination are carted for that purpose to the appraisers' stores except that fragile or bulky articles, machinery, inflammable or explosive substances, and textiles requiring analysis may be appraised upon the wharf, or on the importers' premises, or sent to the nearest port where there is a textile analyst, as the case may be. Goods entered for warehouse are sent to bonded warehouses from which delivery may be made upon the payment of duties, storage charges, etc. Free goods, unless in packages containing dutiable goods, and also perishable goods and explosives or inflammable substances, can not be entered for warehouse. Goods entered for transportation without appraisement are delivered to bonded transportation companies.

Emergency deliveries.—A special permit authorizing the immediate landing and delivery of animals, automobiles, theatrical effects, periodicals, tropical fruits, perishable and other articles requiring immediate delivery may be issued prior to the arrival of the importing vessel upon application by the importer and the deposit with the collector of a sum equal to double the estimated duties, the collector giving early notice to the appraiser who will promptly detail an officer to examine and appraise the merchandise.

Warehouses.—Warehouses for the appraisal and storage of bonded merchandise shall be used exclusively for that purpose and for the storage of unclaimed goods under Government control, and are classified as follows: (*a*) "Public stores" consisting of warehouses owned or leased by the Government for the storage of merchandise undergoing appraisement and for seized or unclaimed goods, and for other purposes; (*b*) importers' private bonded warehouses used exclusively for storing imported merchandise owned and entered for warehouse by the proprietors; (*c*) bonded warehouses used for the general storage of imported goods; (*d*) bonded yards or sheds used exclusively for storing heavy and bulky imported merchandise; (*e*) bonded bins or parts of buildings of elevators used for storing grain; (*f*) warehouses for reconditioning articles made wholly or partly of imported materials or materials subject to internal revenue tax and intended principally for exportation.

Cartage.—Cartage of merchandise in customs custody is of two kinds, (*a*) Government cartage, which must be done by licensed customhouse cartmen under contract for that purpose and (*b*) importers' cartage, which may be done by any licensed customhouse cartman. The cartage of packages designated for examination at the appraisers' stores, or taken possession of for other reasons, shall be done at the expense of the importer by a cartman licensed by the collector. Importers shall designate on the entry of bonded merchandise the bonded warehouse in which they desire their merchandise deposited and the bonded cartman by whom they wish it to be conveyed. An adequate system of receipts covering the transfer of merchandise between docks and bonded warehouses is provided by customs regulations. Cartmen shall give receipts to the importing vessel for all packages or merchandise in bulk delivered to them and shall be held liable under their bonds for its prompt delivery and sound condition unless specially relieved of responsibility.

Record of disposition of cargo.—Discharging inspectors will show the disposition of cargo by noting on the manifest the various entries made therefor, and by indicating packages sent to public stores and noting all discrepancies between manifest, permits, and merchandise.

Disposition of unclaimed cargo.—Merchandise taken possession of as unclaimed for which no entry is made within one year from the date of importation, and that on which duty has not been paid remaining in bonded warehouses beyond three years from the date of importation, are subject to sale by the Government.

Bond for undischarged cargo.—Vessels about to clear from the first port of entry, bearing dutiable merchandise consigned to foreign ports, or other United States customs districts, or both, shall give bond securing payment of duty upon merchandise landed in the United States. Before a vessel departs with residue cargo for another district the master must obtain from the collector a certified copy of the report and manifest filed upon entry, together with a landing certificate and a permit to proceed to such other district for discharge.

Foreign clearance.—Prior to granting clearance to a vessel foreign bound, the collector must receive from the master thereof all manifests, certificates, etc., prescribed by Customs Regulations. Shipments for foreign delivery should not be accepted by such vessels unless accompanied by shipper's export declarations (Customs Form 7525) certified by the collector. If a complete outward manifest can not be filed before departure, or if all export declarations have not been filed, clearance may be granted upon the execution of a bond providing that such manifest shall be filed not later than the next business day after the vessel's departure; that pro forma declarations, in lieu of regular export declarations not received, shall be filed with the complete manifest, and that export declarations so covered shall be filed not later than 15 days after clearance.

The following additional custom requirements must be observed by masters upon clearance: If vessels bear goods subject to State inspection the certificate of inspection and receipts of payment of legal fees must be produced to the collector if required by the State laws. A list of the crew must be deposited with the collector and a certified copy thereof obtained from him. Port sanitary statements must be obtained from medical officers of the United States Public Health Service or from collectors. Vessels of American registry, foreign bound, are required to receive for delivery abroad coin, bullion, United States notes or other securities offered by any representative of the United States Government. Mail for foreign delivery shall be received from the post office at the port of departure and, as a condition of clearance, the master must make oath that he will not convey mail improperly received. Masters of vessels clearing foreign shall obtain from the collector the clearance certificate, and from the collector

or foreign consular officers stationed at the port the register and other shipping papers deposited with them upon entry.

Customs supervision of outbound cargo.—Customs officers are required to supervise the lading of merchandise outward bound on which drawback is payable, or merchandise withdrawn from bonded warehouse for exportation or landed for transshipment.

Customs jurisdiction over coastwise traffic.—The customs entry of a vessel coastwise consists of delivering to the collector, within 24 hours after arrival, a sworn manifest of cargo, and obtaining from him a permit to discharge. On clearance of a vessel coastwise the master will deposit with the collector verified duplicate manifests of the cargo on board which the collector will certify, returning one copy to the master, with a permit thereon to depart.

IMMIGRATION SERVICE, DEPARTMENT OF LABOR.

The immigration laws of the United States, while including within their jurisdiction persons of every nationality arriving at seaports of this country from abroad, either as passengers or as seamen, are designed primarily to regulate the entry into the United States of persons of alien nationality—that is, persons who are not bona fide American citizens by birth or naturalization, or citizens of American insular possessions.

These laws specify what classes of aliens shall be excluded; provide for the examination of intending immigrants prior to their arrival in this country; forbid any person, including masters of vessels, to bring into or to land in the United States by vessels or otherwise, either as passengers or as seamen (except under certain specified conditions), aliens not lawfully entitled to enter or to reside therein, and require that aliens so conveyed shall as soon as possible be returned in the vessels bringing them to the country whence they respectively came, the cost of their maintenance on land and of their return to be borne by those vessels. They provide that immigration officials shall board arriving vessels bearing aliens and either proceed immediately with the inspection of such aliens or order their temporary removal to land stations for later inspection, all expenses of removal and maintenance pending decision as to eligibility to admission to be paid by the vessels; and that masters of such vessels shall deliver to boarding immigration officers the following documents:

1. Descriptive list of United States citizens (passengers).
2. Descriptive list of alien passengers.
3. Descriptive list of Chinese passengers (if any).
4. Descriptive list of aliens in crew, specifying those to be paid off and discharged in the port of arrival.
5. Descriptive list of Chinese seamen in crew (if any).
6. Report of ship's surgeon of diseases, injuries, births, and deaths among passengers at sea.

The immigration laws further provide:

(*a*) That there shall be paid to the collector of customs by the master, agent, owner or consignee of a vessel arriving at an American port a head tax of $8 for, with certain exceptions, every alien passenger and employee thereon entering the United States, the immigration officers certifying to the collector the number, et cetera, of such aliens.

(*b*) That after the arrival of such a vessel it shall be the duty of the owner, agent, consignee, or master thereof to report in writing to the principal immigration officer in charge of the port all cases, as soon as discovered, in which alien employees have illegally landed from the vessel; and

(*c*) Before the departure of the vessel the master or other representative thereof shall deliver to such immigration officer the following documents:

1. A list containing the names of all alien employees who were not employed thereon at the time of arrival, but who will leave port thereon at the time of departure, and also the names of those, if any, who have been paid off and discharged, and of those, if any, who have deserted or landed.
2. A full descriptive list of all alien passengers and all citizens of the United States or its insular possessions leaving this country thereon, indicating particularly those passengers of America or alien nationality who intended to reside permanently abroad.

FEDERAL DOCUMENTS.

The following is a list of documents issued by departments of the Federal Government and other documents which ocean carriers are required to have:

DOCUMENTS CLASSIFIED ACCORDING TO USE.

Papers required for documenting vessel:
- Master carpenter's certificates.
- Certificate of admeasurement.

Papers required for departure and clearance (for foreign port):
- Certificate of registry, enrollment and license, or license.
- Official log book.
- Shipping articles.
- Forecastle card.
- Crew list.
- Outward foreign manifest.
- Clearance.
- Certificate of inspection.
- Licenses of officers.
- Laws governing the Steamboat-Inspection Service.
- Pilot rules and regulations.
- Rules for lights.
- Other forms required by Steamboat-Inspection Service according to nature of vessel and voyage. (See list under Steamboat-Inspection Service.)

Papers required for departure and clearance—Continued.

Passenger list.
Statement of master regarding changes in crew prior to departure.
Port sanitary statement.
Foreign consul's bill of health.

The certificate of payment of tonnage tax should be in vessel's files, also the certificate of fumigation, if vessel has undergone fumigation.

Papers required for departure and clearance (coastwise):

Certificate of registry, enrollment and license, or license.
Coastwise manifest with permit thereon to depart.
Count and list of passengers.
Crew list, if engaged in the whale fishery.
Shipping articles, if vessel is of 75 tons burden or upward and bound from a port on the Atlantic to a port on the Pacific or vice versa.
Forecastle card, if as above.
Certificate of inspection.
Licenses of officers.
Laws governing the Steamboat-Inspection Service.
Pilot rules and regulations.
Rules for lights.
Other forms required by Steamboat-Inspection Service according to nature of vessel and voyage. (See list under Steamboat-Inspection Service).
Certificate of fumigation, if vessel has been fumigated.

Papers required for arrival and entry (from foreign port):

Certificate of registry, enrollment and license, or license.
Official log book (at home port).
Shipping articles.
Crew list.
Inward foreign manifest (four copies).
Store list (two copies).
Clearance (from last port).
List or manifest of aliens in crew.
Passenger list.
Report of diseases, deaths, births, and injuries among passengers.
Seaman's custom statement.
Master's oath on entry of vessel from foreign port.
Original bill of health.
Supplemental bill of health.
Certificate of discharge from local quarantine, Pratique.
Certificate of fumigation to be shown on demand.
Certificate of payment of tonnage tax.

Papers required for arrival and entry (coastwise):

Certificate of registry, enrollment and license, or license.
Coasting manifest.
Count and list of passengers.
Crew list, if engaged in the whale fishery.
Shipping articles, if vessel is of 75 tons burden or above and enters a port on the Pacific from a port on the Atlantic or vice versa.
Official log book, if as above.

Documents issued by departments of the Federal Government.[1]

Issued by—	Name of document.	Form No.	Obtained from—	Copies.	Required for—	Disposition.
Department of Commerce: Bureau of Navigation.	1. Master carpenter's certificate	1261	Builders of vessel	1	Documenting vessel	Customhouse at home port.
	2. Certificate of admeasurement	1414	Surveyor or collector of customs, home port.	1	do	To remain on vessel.
	3. Certificate of registry, license, or enrollment and license.	1265, 1271, 1285.	Collector of customs at home port.	1	Each clearance and entry.	Collector of customs while in port.
	4. Official log book	706	Shipping commissioner at port of departure.	1	Official record	Shipping commissioner at termination of voyage.
	5. Shipping articles	705B	do	2	Clearance and entry	Collector of customs at termination of voyage.
	6. Forecastle card	704	do	1	Posting on vessel	To remain on vessel during voyage.
	7. Crew list	710A	do	2	Clearance and entry	Original filed collector (copy same end of voyage).
	8. Manifest, outward, foreign or coasting.	1374, 1381	Collector of customs, port of departure.	2	Clearance and ship's papers.	Original filed collector before clearance.
	9. Certificate of clearance	1378	do	1	Clearance and entry next port.	Collector of customs.
	10. Certificate of payment of tonnage tax.	1002	Collector of customs at time of payment.	1	Vessel's files	Shown collector of customs on demand.
	11. Certificates of inspection	841, 854, 852, 856, 858.	Local inspectors	1	Posting on vessel	To remain on vessel frame under glass in conspicuous place.
	12. Laws governing the service	800, 801	do	2	For use on vessel	Two copies on passenger steamers, one on others.
	13. Notice of exclusion from pilot house.	802	do	3	Posting on vessel	Passenger and ferry steamer.
	14. Pilot rules and regulations	803, 805, 807	do	2	do	To remain on vessel.
	15. Rules for lights	804A	do	2	do	Do.
	16. Station bills and drills	809	do	3	Posting on passenger vessels.	Do.
Steamboat-Inspection Service.	17. Duties of mates of inland steamers.	810	do	3	do	Do.
	18. Instructions for use of gun	811	do	5	Posting on vessels carrying guns.	Do.
	19. Permit to carry excursion party	949	do	1	Posting on vessel	Do.
	20. Fishing steamer's permit to carry persons other than crew	957	do	1	do	Do.
	21. Certificate relative to carrying petroleum.	953	do	1	do	Do.
	22. License to carry gunpowder	961	do	1	do	Do.
	23. Permit to use petroleum	10	do	1	do	Do.
	24. Permit to carry petroleum	9	do	1	do	Do.
	25. Placard, "Safety first"	992	do	2	do	Do.
	26. Officers' license	867, 871, 876, 877.	do	1	do	To remain on vessel during employment.

[1] Prepared by the Division of Operations, United States Shipping Board.

Documents issued by departments of the Federal Government—Continued.

Issued by—	Name of document.	Form No.	Obtained from—	Copies.	Required for—	Disposition.
Department of Labor: Immigration Service.	27. Station bills	No form	Master or owner	2	Posting on vessel	Deck and engine department during voyage.
	28. Notice relating to life preservers	do	Owner	(2)	Posting each stateroom, cabin, etc.	To remain on passenger vessels.
	29. List or manifest of aliens in crew	680	Immigration officer	1	Arrival at U. S. port	Immigration inspector.
	30. Passenger lists	630, 628, 500	do	1	Arrival and departure	Do.
	31. Report of diseases, deaths, etc	542	do	1	Arrival at U. S. port	From ship's doctor on passenger vessels to immigration inspector.
	32. Statement regarding changes in crew.	689	do	1	Before departure from U. S. port.	Immigration inspector.
Treasury Department: Customs Service	33. Store list	No form	To be made on vessel	1	Entry	Collector of customs.
	34. Seamen's customs statement	6035	Customs inspector	(3)	On arrival	Customs inspector.
	35. Inward foreign manifest	7527	Collector of customs or agents of ship.	4	Arrival and entry	A, Boarding officer; B, Audi.-Treasury Dept.; C, Collector; D, Inspector.
	36. Master's oath on entry	3251	Customs inspector	(4)	do	To be used when oath is not printed on back of manifest.
Public Health	37. Port sanitary statement	1964	Public health officer, port of departure.	1	Arrival at foreign port	Health or customs authorities at foreign port.
	38. Certificate of discharge, quarantine.	1940	Public health officer at quarantine.	1	Entry	Collector of customs.
	39. Original bill of health	1937	United States consul	2	do	Do.
	40. Supplemental bill of health	1938	do	2	do	Do.
	41. Certificate of fumigation	1945	Public health officer	1	Vessel's files	Shown on demand.
	42. Foreign consul's bill of health	Various	Consul of foreign country to which bound.	1	Entry	Collector of customs.
	43. Certificate of inspection of drinking water system.	Domestic service only.	Public health officer	1	Vessel's files	Shown on demand.

[2] Sufficient number. [3] One for each in crew. [4] One for each set of manifest.

LOCAL REGULATIONS.

Harbor and Anchorage Regulations Prescribed by the Secretary of War Pursuant to Section 7 of the River and Harbor Act of March 4, 1915.

THE ANCHORAGE GROUNDS.

Vessels may anchor only in the anchorage known as Bolivar Roads, lying between Bolivar Point on the north and Galveston and Pelican Islands on the south, and only in those portions of said anchorage lying outside of the Galveston Channel, the Texas City Channel, and the Port Bolivar Channel.

RULES AND REGULATIONS.

1. Except as provided in paragraphs 8 and 9 of these regulations and in cases of great emergency, no vessel shall anchor in the channels or turning basin, or in the outer harbor between the jetties, nor be made fast to the exterior end of any pier or vessel lying at the exterior end of any pier, or along any bulkhead in such manner as to obstruct the passage of any vessel to or from adjacent wharf property, or impede the movement of any vessel entering or leaving the slips.

2. Vessels anchoring under circumstances of great emergency elsewhere than as specified in the description above of "The anchorage grounds," must, if anchored in a channel, turning basin, or in the outer harbor between the jetties, be placed as near the edge of the channel as possible, and so as not to interfere with the free navigation thereof, nor obstruct the approach to any pier. They shall move from such position as soon as the emergency ceases, or when so ordered by the captain of the port.

3. All vessels shall lie at anchor with as short a cable as conditions will permit, and in no case shall the length of cable exceed 900 feet.

4. A vessel upon being notified by the captain of the port to shift its position must get under way at once, or signal for a tug, and must change position as directed with reasonable promptness.

5. When the maritime or commercial interests of the United States so require, the captain of the port is hereby empowered to shift the position of any vessel anchored on the anchorage grounds or outside thereof; or of any vessel moored or anchored so as to impede or obstruct vessel movements in any channel or obstruct or interfere with range lights; or of any vessel which, lying at the exterior end of a pier or alongside an open bulkhead, obstructs the passage of vessels to or from adjacent wharf property or impedes the movement of vessels entering or leaving adjacent slips.

6. Vessels in collision in the channel or turning basin, or in the outer harbor between the jetties, must, if still afloat and in a condition making anchorage necessary, be immediately removed to the prescribed anchorage in Bolivar Roads, or, if in such condition that beaching is necessary, they shall be temporarily beached on the north side of Pelican Island, southwest of Bolivar Point and properly secured against movement therefrom.

7. In no case following accidents of fire or collision will a vessel be allowed to remain either anchored or grounded in the channel or turning basin, or beached at any place where it endangers other vessels, while settlement is pending with the underwriters.

8. Permits to anchor in channels may be granted by the district engineer, engineer department at large, in charge of the locality, to wrecking plants legally engaged in recovering sunken property.

9. In special cases the captain of the port may grant permission to small craft, barges, etc., awaiting repairs by the facilities on Pelican Spit, to lie at anchor,

securely moored at both bow and stern and showing proper lights, within a line parallel to the pile and brush dike and not over 200 feet therefrom, in the shallow water on north side of Galveston Channel.

10. Nothing in the foregoing rules and regulations shall be construed as relieving the owner or person in charge of any vessel from the penalties of the law for obstructing navigation, or for obstructing or interfering with range lights, or for not complying with the navigation laws in regard to lights, fog signals, etc.

11. These regulations shall take effect October 15, 1921.

NAVIGATION REGULATIONS PRESCRIBED BY THE SECRETARY OF WAR PURSUANT TO SECTION 11 OF THE RIVER AND HARBOR ACT OF JUNE 13, 1902.

1. The speed of all vessels of over a net tonnage of 100 tons or of greater draft than 6 feet, moving in Galveston Channel, bounded by Pelican Island Dike, the city of Galveston wharf front, the second turn beacon (red) and the western limits of the excavated area, shall be reduced to and shall not exceed a rate of four (4) miles per hour through the water when within 300 feet of the wharves on Pelican Island Dike, and elsewhere in said channel the speed shall not exceed a rate of six (6) miles per hour through the water.

2. All vessels are forbidden to drop anchor, weights, or other ground tackle within two hundred (200) feet of the water main and electric cables crossing Galveston Channel from Pier 14, Galveston to Pelican Island.

EXPLOSIVES AND INFLAMMABLES.

Shipments of explosives and inflammables will be accepted only after a full compliance by shippers or delivering carrier with the rules and regulations of the Interstate Commerce Commission and American Railway Association governing the transportation of such articles. When of a highly inflammable or explosive nature wharfage or handling facilities will not be provided except under special agreement.

PORT ADMINISTRATION.

1. **State or municipal officials and bodies having jurisdiction over the port and over the various phases of its administration.**—The Galveston Wharf Co. owns about 90 per cent of the developed frontage. The city of Galveston owns one-third interest in this company and appoints three of the nine directors of the company (the mayor and two commissioners). All matters regarding the administration and use of the facilities of this company are handled through the vice president and general manager. There is a harbor master, however, who is appointed by the city, and a board of pilot commissioners.

2. **Organization of port administrative bodies.**—A captain of the port, designated by the Secretary of the Treasury from the Coast Guard Service, exercises jurisdiction over all matters covering the movement and mooring of vessels and enforces the provisions of the anchorage regulations for the port, approved by the Secretary of War effective October 15, 1921. Pilots are appointed by the governor, upon recommendation by the State Board of Pilot Commissioners, who are also appointed by the governor.

3. **Duties and powers of port officials and bodies.**—There is no port administration body, either State or municipal, having jurisdiction over the port of Galveston as a port. The wharves are all privately controlled. The Southern Pacific Terminal Co. and the Galveston Wharf Co. handle practically all the incoming and outgoing commerce of the port. The other companies owning wharves are the Gulf Refining Co. and the Mexican Petroleum Corporation. These two companies operate their facilities exclusively in connection with the transportation of oil and administer their own properties. The harbor master performs the usual duties of that office.

PORT SURVEYORS.

The following is a list of **port surveyors:**

F. C. Grant, surveyor for Lloyd's Register of Shipping, fourth floor, Cotton Exchange Building.

F. C. Cahan, surveyor for American Bureau of Shipping, 707 American National Insurance Co. Building.

J. E. Hoover, surveyor for American Marine Insurance Syndicate, 414 American National Insuranee Co. Building.

T. J. Anderson, surveyor for the Board of Underwriters of New York, 2102½ Avenue B.

E. Goudge, surveyor for the Bureau Veritas, No. 4 Marine Building.

PORT SERVICES AND CHARGES.

FIRE PROTECTION.

The water-front facilities are protected by the city of Galveston's water department. All warehouses have fire hydrants either inside of the warehouse or outside, located with the thought of furnishing the best protection. In addition, all warehouses are equipped with the American District Telegraph Service, and all watchmen in warehouses and along the water front are city policemen in uniform. They are required to register over the A. D. T. boxes every hour during the day and every half hour during the night.

The city of Galveston maintains a fire boat, which has steam up at all times, both day and night, with double crews, ready to respond to any fire along the water front.

Information regarding fire protection at the various wharves and piers of the port is given in the table showing data relative to wharves, docks, etc.

PILOTAGE.

Pilotage is compulsory for all vessels entering or clearing from a Texas port with a few exceptions as specified in the regulations below.

Pilots will be found between sunrise and sunset outside the bar or at anchor near the end of the jetties. During thick or foggy weather the pilot boat, when in open water, blows four blasts of the whistle; steamers approaching the bar and hearing the whistle reply with similar blasts. This is repeated at intervals until the pilot boat arrives alongside the steamer.

The rates of pilotage inward or outward at Galveston are as follows:

Net registered tonnage:

	Rate per foot draft.
Not over 500	$3.00
500 to 1,000, inclusive	3.50
1,000 to 1,500, inclusive	3.75
Over 1,500	4.00

See Towage, page 25, for pilotage charges in connection with movement of vessels within harbor.

EXTRACTS FROM STATE OF TEXAS PILOT REGULATIONS.

The rate of pilotage on any class of vessels shall not in any port of this State exceed $4 for each foot of water which the vessel at the time of piloting draws, and whenever a vessel, except of the classes below excepted, shall decline the service of a pilot offered outside the bar, and shall enter the port without the aid of one, she shall be liable to the first pilot whose services she so declined for the payment of half pilotage; and any vessel which after being brought in by a pilot shall go out without employing one shall be liable to the payment of half pilotage to the pilot who brought her in, or if she has come in without the aid of a pilot, though offered outside, she shall in so going out be liable for the payment of half pilotage to the pilot who had first offered his services before she came in; but if she has come in without the aid of a pilot, or the offer of it outside, she shall in case of going out without a pilot not be liable to half pilotage. At any port where vessels shall receive or discharge their cargoes at an anchorage outside the bar, such vessel shall be liable for pilotage at the above rate to such anchorage, but shall not be liable for or compelled to pay pilotage from such anchorage to the open sea; and if any vessel bound from the open sea to such anchorage while under way shall decline the services of a pilot, and shall afterwards receive or discharge any portion of her cargo at such anchorage on the lighters or otherwise, she shall be liable for the payment of half pilotage at the above rates to such anchorage to the first pilot whose services shall have been tendered to and declined by her, but not liable for any pilotage from such anchorage to the open sea; and when a pilot takes charge of a vessel twenty miles outside of the bar and brings her to it, he shall be entitled to one-fourth pilotage for such offshore service, in addition to what he is entitled to recover for bringing her in; but if such offshore service be declined, no portion of such compensation shall be recovered.

The following classes of vessels shall be free from any charge for pilotage unless for actual service, to wit: All vessels of twenty tons and under; all vessels of whatsoever burthen, owned in the State of Texas and registered and licensed in the district of Texas, when arriving from or departing to any port in the State of Texas; all vessels of seventy-five tons and under, owned and licensed for the coasting trade in any part of the United States when arriving from or departing to any port in the State of Texas; all vessels of seventy-five tons and under, owned in the State of Texas and licensed for the coasting trade in the district of Texas, when arriving from or departing to any port in the United States.

DOCKAGE.

At the railroad piers no dockage charges are made except when vessels occupy berths while being fitted for loading grain.

The following rates and charges, effective January 1, 1922, are made for the use of piers, wharves, and sheds of the Galveston Wharf Co.:

SECTION 1—DOCKAGE.

(*a*) All vessels handling export or import cargo shall pay for the use of shedded piers a dockage charge, as follows:

1 cent per gross ton for 1st day.	No charge per gross ton for 12th day.
1 cent per gross ton for 2d day.	No charge per gross ton for 13th day.
1 cent per gross ton for 3d day.	No charge per gross ton for 14th day.
1 cent per gross ton for 4th day.	No charge per gross ton for 15th day.
1 cent per gross ton for 5th day.	No charge per gross ton for 16th day.
1 cent per gross ton for 6th day.	1 cent per gross ton for 17th day.
No charge per gross ton for 7th day.	1 cent per gross ton for 18th day.
No charge per gross ton for 8th day.	1 cent per gross ton for 19th day.
No charge per gross ton for 9th day.	1 cent per gross ton for 20th day.
No charge per gross ton for 10th day.	1 cent per gross ton for 21st day.
No charge per gross ton for 11th day.	

(*b*) All vessels making use of the shedded piers beyond this period of time shall be assessed on the same basis applied under paragraph (*a*).

(*c*) The above charges are to become effective upon arrival of vessel at pier and each succeeding twenty-four (24) hours after actual hour of berthing to be considered a full day. Any part of a day beyond the twenty-four (24) hour period on date of departure to be considered a full day.

(*d*) In all cases dockage shall be calculated as above stated and upon the basis of straight running time from date of berthing of vessel until final departure from this company's shedded piers. The foregoing charges shall apply to each voyage.

(*e*) The Galveston Wharf Company reserves to itself, without question, the right to admeasure all vessels when they deem it necessary, said admeasurement to be used by the Galveston Wharf Company as a basis for its charges.

(*f*) Vessels discharging inward cargo and not loading outward cargo will be charged one cent per gross registered ton per day or fraction thereof, commencing 24 hours after completing discharge, so long as said vessel is berthed at any wharf or piers or made fast to any vessel so berthed.

(*g*) Vessels berthed at any wharf or pier or made fast to a vessel so berthed, that do not discharge inward cargo or load outward cargo, will be charged dockage at the rate of one cent per gross registered ton per day or fractional part thereof.

(*h*) Vessels berthed at any wharf or pier or made fast to a vessel so berthed, for the purpose of undergoing repairs, will be charged dockage at the rate of one cent per gross registered ton per day or fractional part thereof. After repairs are completed and vessel loads outbound cargo, dockage charges shown in item (*a*), this section, will apply. If vessel does not load outward cargo, dockage charge of one cent per day or fractional part thereof will be made while berthed at any pier or wharf.

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(*i*) All vessels made fast to a vessel berthed at a shedded pier will be subject to dockage rates in section 1, paragraph (*a*).

(*j*) United States customhouse measurements to be used in determining size of vessels.

SECTION 2.—SHED HIRE.

(*a*) Where shedded piers or wharves are occupied, vessels using same for export cargo shall pay a shed hire, as follows:

Vessels over 5,000 net registered tons	$175
Vessels 3,000 to 5,000 net registered tons	150
Vessels 2,000 to 3,000 net registered tons	125
Vessels 1,000 to 2,000 net registered tons	100
Vessels 500 to 1,000 net registered tons	75
Vessels 1 to 500 net registered tons	50

(*b*) Where shedded piers or wharves are occupied, vessels using same for import, cargo shall pay a shed hire of 20c. per net ton on all cargo unloaded, with a maximum of $100 per vessel.

(*c*) Following shed hire charges, in addition to those contained in paragraph (*a*), will be made on cotton placed in shedded piers or wharves awaiting shipment:

First 15 days	Free.
Next 5 days or fractional part thereof	1c. per sq. bale.
Next 5 days or fractional part thereof	2c. per sq. bale.
Next 5 days or fractional part thereof	3c. per sq. bale.
Next 10 days or fractional part thereof	4c. per sq. bale.
Next 20 days or fractional part thereof	6c. per sq. bale.
For each additional 10 days or fractional part thereof	10c. per sq. bale.

The charges against round bale cotton will be one-half of the above.

Steamship agents, owners, and masters will be required to permit access to the manifests of cargo for the purpose of ascertaining the necessary data to permit correct assessment of these charges.

(*d*) The following shed hire charges in addition to those contained in paragraph (*a*) will be made on cottonseed cake and meal placed in sheds, piers, or wharves awaiting shipment:

First 15 days	Free.
Next 10 days or fractional part thereof	10c. per net ton.
For each additional 10 days or fractional part thereof	15c. per net ton.

(*e*) Special arrangement must be made with the company where inward cargo remains in shedded piers or wharves, and rules will be promulgated governing time allowed, amount of charge for such facilities furnished, etc.

SECTION 3.—PIER ASSIGNMENTS.

(*a*) The wharves and sheds of this company will be preferentially assigned. Preferential assignments will not be considered absolute to the total exclusion of other vessels which this company may deem proper to assign to such space. It may be understood, however, that the company will not undertake to make use of such preferentially assigned space for other vessels, except when the same, in its opinion, is not being made use of by the party to whom it is assigned, or when the company deems any particular necessity demands it.

SECTION 4.—VESSELS TAKING GRAIN AT ELEVATORS.

(*a*) The following charges will be made against vessels loading grain cargo only taken at Galveston Wharf Company wharves:

For vessels over 5,000 net registered tons, United States customhouse measurements	$175
For vessels from 3,000 to 5,000 net registered tons, United States customhouse measurements	150
For vessels from 2,000 to 3,000 net registered tons, United States customhouse measurements	125
For vessels where the net registered tonnage is less than 2,000 tons, United States customhouse measurements	100

(*b*) Vessels fitting up for or awaiting to load grain that load an entire cargo at elevators not located on property of the Galveston Wharf Company will be charged twenty-five dollars ($25) per hatch in addition to dockage charges carried in paragraph (*c*) this section. No fitting charge will be made against vessels that load a part cargo of grain at elevators not located on property of the Galveston Wharf Company.

(*c*) A charge for dockage on vessels berthed at any wharf or pier or made fast to a vessel so berthed, taking full or part cargo of grain, will be made in addition to charges contained in preceding paragraphs, this section, as follows:

1 cent per gross ton for 1st day.	No charge per gross ton for 12th day.
1 cent per gross ton for 2d day.	No charge per gross ton for 13th day.
1 cent per gross ton for 3d day.	No charge per gross ton for 14th day.
1 cent per gross ton for 4th day.	No charge per gross ton for 15th day.
1 cent per gross ton for 5th day.	No charge per gross ton for 15th day.
1 cent per gross ton for 6th day.	1 cent per gross ton for 17th day.
No charge per gross ton for 7th day.	1 cent per gross ton for 18th day.
No charge per gross ton for 8th day.	1 cent per gross ton for 19th day.
No charge per gross ton for 9th day.	1 cent per gross ton for 20th day.
No charge per gross ton for 10th day.	1 cent per gross ton for 21st day.
No charge per gross ton for 11th day.	

(*d*) All vessels loading grain beyond this period of time shall be again assessed on the same basis applied under paragraph (*c*).

SECTION 5.—PAYMENT OF DOCKAGE, WHARFAGE, AND OTHER CHARGES.

(*a*) All vessels and their owners berthing at a wharf or pier thereby contract to pay and are responsible for dockage and other charges provided herein to be collected either from vessels, their owners, or their agents.

(*b*) The payment for charges for wharfage, etc., as shown in Galveston Wharf Company tariffs, will be made as heretofore, in addition to the above charges, and all rules and regulations contained in the tariffs will be enforced.

TOWAGE.

Rates for tugboat service in assisting all steamers and sailing vessels to and from their docks in Galveston Harbor and vicinity:

Assisting on or off dock per tug	$40.00
Shifting from pier to pier at Galveston, vessel with or without steam:	
First tug	55.00
Second tug	50.00
Third tug	45.00
Pilotage	20.00

Assisting, between Galveston piers and Bolivar Roads, in addition to on or off dock charge ---------- per tug	$40.00
Assisting, between Bolivar Roads and Texas City, including on or off dock charge:	
First tug	80.00
Second tug	70.00
Towing, Bolivar Roads to Texas City and vice versa, including on or off dock charge:	
First tug	115.00
Second tug	105.00
Pilotage	25.00
Shifting, pier to pier at Texas City ---------- per tug	55.00
Pilotage	20.00
Assisting vessels with steam, between Galveston piers and Texas City piers and vice versa ---------- per tug	140.00
Towing vessels without steam, between Galveston piers and Texas City piers and vice versa ---------- per tug	160.00
Pilotage	25.00
Assisting, between Galveston piers and Bolivar piers and vice versa, ---------- per tug	100.00
Pilotage	25.00
Holding vessel off dock while rat fenders are placed (it being understood that lines are not to be let go)	20.00
If lines are let go	40.00
Furnishing steam, per hour or any fraction of an hour	30.00
Pulling on ship aground in harbor or Galveston Bay:	
Per tug per hour or any fraction of an hour, first hour or fraction of an hour	50.00
Each succeeding hour or fraction of an hour	30.00

(Time to be charged from the time tug leaves her berth until the time tug returns to her berth. Ship to furnish hawser.)

SAILING VESSELS.

Gross tonnage basis.

Towage between Galveston Bar and Galveston Dock	30c. per ton.
Towage between Galveston Bar and Bolivar Dock	30c. per ton.
Towage between Galveston Bar and Texas City Dock	35c. per ton.
Towage between Galveston Bar and Bolivar Roads	25c. per ton.
Towage between Bolivar Roads and Galveston Dock	15c. per ton.
Towage between Bolivar Roads and Bolivar Dock	15c. per ton.
Towage between Bolivar Roads and Texas City Dock	20c. per ton.

WHARFAGE.

The wharfage rates at the railroad piers also apply at the piers of the Galveston Wharf Co. These rates are shown under Railroads, page 74.

LIGHTERAGE.

Lighters are not used at this port. There is only one car float in Galveston Harbor and this is used as part of the through transportation facilities of the Gulf, Colorado & Santa Fe Railroad. No separate charge is assessed.

STORAGE.

This subject is covered under railroads and storage warehouses.

LOADING AND DISCHARGING VESSELS.

General cargo carried in overseas vessels is loaded and unloaded mainly by ship's tackle, and goods are moved to and from ship side by hand trucks.

Cotton, which in normal times is the chief commodity shipped out of the port, is handled with the aid of hand and motor trucks, together with ship's tackle and skids. The cotton is brought to the transit sheds from the local compresses and warehouses by electrically driven saddle-back trucks of 25 bales capacity, and by 3-mule floats. The trucks are designed especially for handling this commodity.

The Galveston Wharf Co. has two electric traveling gantry cranes, located at Pier 41, of 1½ tons capacity. These cranes can handle freight between the ship and the second story of the warehouse, thus doing away with the necessity for elevators and escalators in a double-deck warehouse. In addition, this pier has an elevated railroad track running the full length of the pier, with car floor level with the second story floor of the warehouse, thus doing away with rehandling between upper and lower floors.

Bananas are unloaded by means of three traveling electric conveyors with a capacity of 2,000 bunches per hour each. These conveyors are located on Pier No. 20.

The Mallory Steamship Co. has a number of electric freight escalators which are used to raise loaded hand trucks from coastwise vessels to the floor of the transit shed. This company is also well supplied with electric storage battery trucks of 2,000 pounds capacity, affording rapid distribution of freight throughout the warehouse.

At the Southern Pacific Terminal, used principally by coastwise vessels, the handling equipment consists of 12 electric freight escalators and various types and sizes of electrical cranes, as well as hand and motor trucks.

At the Galveston Coal Co.'s plant on Pier No. 34 coal is handled by means of a steel tower with boom, which lowers and extends over the beam of the vessel. A 2½-ton clamshell bucket, with rapid conveying apparatus, operates through the tower on a steel railway track about the wharf.

At Piers 35 and 36 there are two locomotive cranes having a reach of 55 feet and equipped with 2-ton buckets.

All grain elevators are equipped with electric conveyors and chutes to ship side, making the supply of grain to the vessel as rapid as trimming will allow.

The Texas Gulf Sulphur Co. has recently installed at Piers 35 and 36 facilities for handling sulphur from car to storage pile and storage piie direct into the ship. These facilities consist of two cranes operating from cars to large storage bins and a belt conveyor system extending from the storage piles to ship side, where the sulphur is passed through a hopper and chute into the ship's hold.

Details regarding the handling facilities will be found in the table relating to piers, wharves, and docks.

Methods employed in handling inward cargo.—On arrival of vessel the cargo is unloaded by the contracting stevedore, after permit is granted by the customhouse. Cargo is sorted and piled in the wharf shed according to the bill of lading conditions and under supervision of United States customs officials and steamship agents' wharf clerks. When freight is paid by consignee, delivery orders are given by the vessel's agent, who arranges for delivery of merchandise to the railroad for transportation to final points of destination. On completion of loading merchandise into railroad cars, railroad representatives give steamship representatives receipts according to the condition of merchandise when loaded. From steamer to wharf and into wharf shed, the work is handled by contracting stevedores, and from wharf warehouse into railroad cars, by the railroad contractor.

Methods employed in handling outward cargo.—Notice of the arrival of railroad cars in port with merchandise for shipment is given by the railroad to the steamship agent, who, in turn, orders the cars to the pier where he is accumulating cargo for the respective ports. Cargo is unloaded from railroad cars by the railroad contractor, and stacked in the wharf shed or warehouse where it is checked by the railroad contractor's clerk and the steamship agent's receiving clerk, and receipt is given to the railroad covering actual condition of cargo when delivered in the wharf shed. On arrival of the ship, cargo is turned over by the steamship agent's clerk to the ship's officers, who, in turn, accept and sign receipts upon which ocean bills of lading are granted. Cargo is taken from the wharf shed or warehouse and loaded on board the vessel by the contracting stevedore.

Coastwise merchandise is handled in the same manner except that it is not under supervision of custom officials.

Speed of loading and unloading.—On inward cargo the average quantity handled under normal conditions is about 100 to 200 tons per gang per day. On outward cargo the average quantity handled is about 200 tons per gang per day for sacked cargo, 100 tons per gang per day for lumber and timber, and for bulk cargo, such as grain, up to 5,000 tons in a working day. The amount handled in either case depends entirely upon the nature of the commodity. As many hatches as are equipped with hoisting apparatus can be worked at one time. The average number of gangs per hatch is 1 or 2, according to the number of hoisting winches with which the hatch is equipped. For handling cotton there are 5 men to the gang, 3 gangs per winch when stowing cotton by hand, and 4 gangs to each winch when stowing with screws. For handling sacked cargo there are 16 to 20 men per gang and for other general cargo 18 men per gang.

Cost of loading and unloading.—The cost of loading and unloading cargo is shown in the accompanying table of stevedoring rates at Texas Gulf ports. For loading or unloading cargo through doorways or any place that can not be approached by open hatch, all extra expense incurred is charged. In loading or unloading vessels that are not alongside of the wharf, the extra expense incurred is charged in addition to the tariff rates. For handling cargo in or out of the second story at Pier No. 41 all extra expense incurred is in addition to tariff rates. When gangs have to be taken to subports or outside work transportation must be furnished and time paid from the hour of leaving the wharf· such transportation and loss of time are charged to the vessel.

Some stevedoring contractors of the port.

Name.	Address.
E. Goudge & Son	Room 4, Marine Building.
Galveston Coal Co.	American National Insurance Building.
Gulf Ports Stevedoring Co.	R. M. Bain, jr., manager, 2102½ Strand.
Isaac Heffron Stevedoring Co.	222 Twenty-first Street.
J. E. Pearce Contracting & Stevedoring Co.	J. E. Pearce, president and general manager, Security Building.
Southern Stevedore Co	T. B. Nichols, manager, American National Insurance Building.
Standard Stevedore Co.	W. T. Taylor, manager, American National Insurance Building.
Suderman & Young	Marine Building.
Texas Contracting Co.	Capt. H. H. Pyle, manager, 2022½ Strand.
R. P. Williamson & Co.	1310 Avenue F.

Transit cargo.—Information relative to the charges and practices affecting the movement of cargo through the port is given in the part of this report devoted to railroads. Discharging of cargo is paid by the steamship agents; all other charges, such as storing and transportation to point of reshipping, is borne by the consignee. The expense involved in the storage and reshipment of cargo landed in error is absorbed by the steamship companies, if at fault. Undelivered or unclaimed freight is held in the warehouse of the carrier or in public warehouses by the carrier. It will be held for various lengths of time, ranging from one to six months, depending upon the value of the cargo, and then is usually sold at auction.

Checking and tallying.—The cargo is checked at the time of loading or unloading by steamship clerks and United States customs inspectors. The cargo is stacked or piled in such manner that it can be readily checked by wharf clerk and often is confirmed by ship's officers. On inward cargo a receipt is given by the steamship agent's authorized wharf superintendent to consignee which states the exact quantity and condition of cargo when landed. Receipt for outward cargo is given by the agent's wharf superintendent stating quantity of commodity received in apparent good order.

LABOR.

The following holidays are observed: New Year's Day (January 1), Washington's Birthday (February 22), Sam Houston Memorial Day (March 2), Texas Independence Day (April 21), Independence Day (July 4), Labor Day (first Monday in September), Armistice Day (November 11), Thanksgiving Day (fixed by presidential proclamation and generally the last Thursday in November), and Christmas Day (December 25).

The labor supply is entirely union controlled. Nonunion labor is used only when the demand is temporarily greater than the supply, but all such labor is furnished by the International Longshoremen's Association. There is usually an ample supply of labor.

The following are the wage scales and working rules of longshoremen:

Conditions and Maximum Rates Covering Stevedoring Operations on United States Shipping Board Emergency Fleet Corporation Vessels[1] at Texas Gulf Ports, Except Sabine Ports.

(Effective January 1, 1923.)

(1) The ship shall furnish and maintain in good order the necessary winches capable of lifting three (3) gross tons in single gear, and shall also furnish the necessary steam, blocks, ropes for falls, dunnage, hatch tents, gangways, and necessary light where work is to be performed at night. The stevedore shall furnish all other gear and equipment, including slings, ropes, hooks, trucks, conveyors, and save-alls for loading and discharging, and shall transport the same to and from the ship at his own expense. The stevedore shall receive no compensation, under any condition, for rigging and unrigging the ship in loading and/or discharging and for removing such rigging. The stevedore shall take off and put on all hatches while the vessel is loading and/or discharging, but not after the completion of such loading and/or discharging. He shall also furnish and pay all winchmen.

(2) The stevedore shall order out men only on authority specifically given by the United States Shipping Board Emergency Fleet Corporation, through its managing agents, and shall transport them to and from the vessel at his own expense, except to points for which extra travel expense is provided in the prevailing wage agreement. Overtime and extra labor of every nature in loading and discharging must be authorized before performance by the United States Shipping Board Emergency Fleet Corporation, through its managing agents, and when so authorized five cents (5c.) per man per hour over and above the amount paid for labor will be allowed on all overtime work performed. Overtime shall be billed on the basis of the difference between the straight time and overtime paid the men and must be certified to by the managing agent or some one authorized by him, and by the master of the vessel or his agent. If the stevedore is delayed beyond a reasonable time on account of breakdown in machinery, absence of cargo, or for shifts, he shall be paid for total time lost at actual cost of labor, provided the same is certified to by the managing agent or some one authorized by him and by the master of the vessel or his agent.

[1] Furnished by the Division of Operations of the United States Shipping Board.

(3) The Shipping Board continues in its right at all times to control wages, hours, and conditions of longshoremen in performance of stevedoring work on Shipping Board vessels. All wages paid longshoremen for straight time, overtime, traveling time, waiting time, and for expense of transportation shall be according to the prevailing wage scale upon which the attached commodity rates and conditions are predicated. Should any changes be made in the said prevailing rates of wages or working conditions, said commodity rates and conditions shall be subject to modification in accordance with said changes, provided, however, that in the employment of longshoremen such employment shall not be restricted to any selected group of men nor shall men be required to hold any kind of employers' or employees' union card before being eligible for employment; nor shall they be required to hire through any hall or list system.

(4) All rates in the commodity rate sheet covered by these conditions shall apply on a long ton basis of 2,240 pounds, except as otherwise specifically provided in the commodity list. General cargo shall include all commodities not named in the commodity cargo list and for which no commodity rate is provided, and shall be figured on the basis of a payable ton.

(5) All legitimate ship's work, such as cleaning holds, coopering cargo, and shifting bunkers may be performed by the stevedore only upon approval of the United States Shipping Board Emergency Fleet Corporation through its managing agents, and then at actual cost of labor plus five cents (5c.) per man per hour. Where such work is authorized the time shall be certified to each night by the managing agent or some one authorized by him, and by the master of the vessel or his agent.

(6) All liability and compensation insurance to protect the United States Shipping Board Emergency Fleet Corporation, and its agents, and stevedoring companies, loading, discharging, and bunkering vessels of the United States Shipping Board Emergency Fleet Corporation and in doing work incidental thereto against liability for accidents to employees and the public, shall be carried and paid for by the United States Shipping Board Emergency Fleet Corporation.

(7) Any extra labor necessary to bring cargo other than cotton from beyond 150 feet of the hatch, and cotton from beyond 200 feet of the hatch, shall be billed at actual cost. The stevedore in handling cargo from the pile on the pier or in the warehouse and/or from cars, barges, scows, or booms alongside, and in stowing same in the hold and/or on the deck of the vessel shall perform such operations in a manner satisfactory to the master thereof or his agent, and in discharging cargo from the vessel's hold and/or deck onto pier or into warehouse and/or onto cars, barges, scows, or booms alongside and/or piling same on the pier or in the warehouse, he shall perform such operations in a manner satisfactory to the United States Shipping Board Emergency Fleet Corporation or its agents. The stevedore performing any such service set forth above for the United States Shipping Board Emergency Fleet Corporation shall be responsible for all damage or injury to the ship, or cargo in handling or stowing the same, through his negligence or fault.

(8) No services in connection with the loading or discharging of cargo will be paid for by the United States Shipping Board Emergency Fleet Corporation other than those specifically enumerated in these conditions unless authority has been secured from the United States Shipping Board Emergency Fleet Corporation, through its agents, for their performance.

MAXIMUM COMMODITY RATES FOR TEXAS GULF PORTS (EXCEPT SABINE PORTS).

(Effective January 1, 1923.)

Commodity.	Loading and discharging per ton of 2,240 pounds.
Ballast	$0.65
Bones in bulk	1.50
Cement	.65
Coffee, any quantity, (including sorting, piling, and extra labor in discharging) per bag	.06
Cotton, square bales, hand stowed in holds, per bale	.24
Cotton, square bales, headed through doorways, per bale	.29
Cotton, square bales, hand stowed, piled three high between beams to deck, per bale	.28
Cotton, square bales, hand stowed in peaks, lazarettes, and rooms, per bale	.44
Cotton, round bales, stowed, per bale	.12
Cotton, square bales, stowed with tools, per bale	.48
Cotton, round bales, stowed with screwed cotton, per bale	.24
Cotton, square bales, uncompressed, hand stowed, per bale	.30
Cotton, headed on dock when necessary, per bale	.02
Eplosives and other dangerous cargoes, including damaged cargoes: Special rate by arrangement.	
Flour	.65
General cargo (weight, manifest ton)	.75
General cargo (measurement, manifest ton)	.50
Grain, parcels only, levelling and/or beaming, wheat, corn, rye, barley and oats, per M bushels	3.25
Grain, wheat, corn, rye, barley and oats, sewing and sacking, per bushel	.02
Grain, wheat, corn, rye, barley and oats, stowing when sacked on steamer, per sack	.03½
Heavy lifts, over 3 tons (not in addition to commodity rates) (where outside derricks are required they shall be for account of steamer)	1.20
Iron and steel—bars, rods and hoops, any length	.78
Iron and steel—structural, beams, angles and channels, tank plates	.90
Kainit	.65
Lumber, hard wood	1.10
Lumber, timber and deals, all kinds except hardwood, per M feet b. m	2.00
Nitrate	.55
Oils and other barrel products	.70
Oil in cases, per case	.03
Oil in cases, loaded by conveyor, per case	.02
(On all case oil, dunnage to be furnished and spread by the stevedore.)	
Oil cake and meal, cottonseed, peanut, etc., in sacks	.60
Rice, in sacks	.65
Rice polish	.65
Shooks, box	1.15
Sisal and Ixtle, per bale	.13
Staves	1.10
Spelter, pig iron, billets and ingots	.60
Steel rails, not over 33 feet	.80
Steel rails, 33 feet and over	.85
Scrap iron: Special rate by arrangement.	
Sugar, refined, in sacks	.60
Sulphur, bulk, by machinery	.50
Sulphur, bulk, from cars (ship's tackle)	.60
Sulphur, in double bags	.70
Toys, in cases, crates or barrels	1.20

AGREEMENT ENTERED INTO BETWEEN THE UNITED STATES SHIPPING BOARD, DEEP SEA STEAMSHIP AGENTS, AND THE MASTER STEVEDORES ASSOCIATION OF TEXAS, ON THE ONE HAND, AND THE INTERNATIONAL LONGSHOREMEN'S ASSOCIATION LOCALS NOS. 310, 329, 636, 851, 872, AND 896, ON THE OTHER HAND.[1]

It is agreed between the above-mentioned parties that the following shall be the scale of wages and working arrangements for labor to be performed by the members of the longshoremen's organization engaged in the loading or unloading of vessels arriving and departing from the ports of Galveston, Texas City, Houston, and Bolivar with any kind of cargo except cotton and tobacco, effective the 1st day of October, 1922, and terminating the 30th day of September, 1923. It is further mutually agreed that any alteration, as to scale of wages or working conditions, to be effective after September 30th, 1923, must be submitted not later than the first Monday in August, 1923.

The longshoremen agree to execute orders issued by one or more foremen as decided by the stevedore, it being understood that such foremen are members of the International Longshoremen's Association.

HOURS OF LABOR.

Eight hours shall constitute a day's work, with forty-eight hour week.

When required, longshoremen shall work on Saturday night if necessary, at the usual overtime or meal-hour rate, as the case may be.

DIFFERENTIALS.

Grain.—In addition to the basic wage named herein twenty cents (20c) per hour shall be paid for grain trimming, spout tending, sacking, sewing, stowing, and shifting grain aboard ship, except grain already sacked for export.

The same differential per hour that prevails in recognized case oil ports of Texas shall be paid in addition to the basic wage named herein, for loading kerosene, gasoline, and naphtha, in cases, when loaded by case-oil gangs or with a fly. It is understood that when full cargoes of case oil are handled at ports not considered oil ports, the men shall be paid the case-oil gang rate.

In addition to the basic rate named herein, five cents (5c) per hour shall be paid for loading, shifting, and trimming coal for a steamer's own bunker purposes and for handling coal cargo.

In addition to the basic wage named herein, ten cents (10c) per hour shall be paid for handling the following commodities: Powdered arsenic, creosoted timber, other creosoted material, wood preserver and kindred products, cotton ties, cement, caustic soda, fuller's earth, phosphate in bulk, acid phosphate in bulk and phosphate rock in bulk, sulphur in bulk or single bags, chloride of lime, spiegel ore and ferromanganese in bulk, kainite, and manure salts in bulk, green salted hides (except when packed in barrels), guano, bones in bulk, fitting ships with shifting boards, cattle fittings and bulkheads, and all work of a like character. Also for the handling of barreled naphtha, barreled kerosene, barreled gasoline, and barreled turpentine, where hooks and crowbars are not used in stowage.

Damaged cargo.—Damaged cargo, on vessels in distress, or where fumes, smoke, or obnoxious odors are present, to be shifted, discharged, or otherwise, shall be paid for at double the regular rates applicable to class of cargo handled, but all undamaged cargo, whether in the compartment with damaged cargo or not, shall be paid for at regular rates. In case of dispute, as to what shall constitute damaged cargo, the matter shall be referred to the grievance committee, whose decision shall be final.

[1] Furnished by the Division of Operations of the United States Shipping Board.

Number of men per gang.—The stevedore shall have the right to determine the number of men employed in each gang or working at each hatch, except as specified in the working rules. The stevedore shall also have the right to shift the men from hatch to dock and dock to hatch or gangs from hatch to hatch on the same ship, as specified in this agreement. Stevedore shall also have the right to specify the number of walking foremen and assign to these foremen their duties. The stevedore shall at all times have the right to specify or name his walking foremen (if such foremen be employed) and gangway men, provided he or they shall be members of the International Longshoremen's Association.

Waiting time.—When longshoremen are ordered to work and are not put to work, except when prevented from starting by weather conditions, they shall bo paid for two hours' work at the prevailing rate, providing they remain subject to the call of the stevedore during that time.

SCALE OF WAGES.

Day rate, 65 cents per hour.

Overtime, night and holidays, $1.00 per hour.

Sundays, double time.

Overtime, night and holidays, all differential commodities, time and one-half the prevailing rate.

Meal hour, double the regular-time rate.

When men work through the night and are required to work the breakfast meal hour, the meal-hour rate shall prevail until such men are relieved. If men work through the noon hour double time shall prevail until relieved, but double time does not apply to work done immediately following the supper meal hour or the midnight meal hour.

Every effort will be made to arrange for the men to receive their wages at a locality and at a time as convenient as possible to the men. Any abuse arising from this clause shall be brought to the attention of the grievance committee.

The longshoremen's associations agree to make every effort to prevent pilferage or broaching of cargo, and any man caught in the act of broaching or pilfering or having broached or pilfered cargo in his possession shall upon conviction in the courts be expelled from the union. The longshoremen's associations agree not to uphold incompetency or shirking of work, and upon complaint of the stevedore any man or group of men not properly performing their duty shall be laid off and the longshoremen's associations agree to provide additional men to take their places.

It is understood and agreed that during the life of this contract there shall be no stoppage of work or lockout under any circumstances whatsoever. It is further understood that in case of dispute as to the interpretation of this contract or any working rules agreed to in connection with this contract there shall be no cessation of work and that the case shall be referred to a grievance committee composed of two representatives of the shipping and stevedore interests, two representatives of the organization, and a neutral chairman acceptable to both sides. This committee shall meet within twenty-four hours. Only in the event that the employees' and employers' representatives can not agree shall the neutral chairman be called upon. The decision of this committee shall be final.

The longshoremen's associations guarantee the full observance of this contract by the individual members of the associations. The employers also pledge themselves to the faithful performance of their obligations under this contract. No rules affecting in any way the cost of labor or the working of the vessels shall be adopted by either party to this agreement during the life of this agreement, except by mutual consent.

WORKING RULES OF LOCALS 310, 329, 636, 851, 872, AND 896, OF THE INTERNATIONAL LONGSHOREMEN'S ASSOCIATION FOR LONGSHORE WORK AT THE PORTS OF GALVESTON, TEXAS CITY, HOUSTON, AND BOLIVAR, TO BE EFFECTIVE ON AND AFTER OCTOBER 1ST, 1922.

RULE NO. 1.—HOLIDAYS.

Fourth of July, Labor Day, Thanksgiving Day, Christmas Day, New Year's Day, Washington's Birthday, Texas Independence Day, and Armistice Day.

RULE NO. 2.—LONGSHORE WORK.

Longshore work shall constitute the loading and discharging of all seagoing vessels, railroad cars at wharf, fitting ships for grain, livestock, or securing cargoes of any kind, dismantling ships of any kind of fittings, shifting of cargoes, coal, etc., and all labor connected with the loading and discharging of ships, including hoisting cargoes with ship's winches, or other means that may be employed.

RULE NO. 3.—OUTSIDE WORK.

The wages for all outside work shall be the same as for work along the wharf, provided that whenever the stevedore furnishes a cook and provisions for his gang or gangs, he shall be paid the prevailing rate for meals furnished each man. No board to be paid for overtime.

Men to be paid from time of leaving until return to wharf. This to apply to outside work, such as in roads or vessels at anchor.

RULE NO. 4.

Any work on ships not moored to the wharf so the workmen can not get ashore, shifting of ships included, shall be termed as outside work, or to any subport, time will be charged from time of leaving Galveston Wharf, until gangs leave such outside work or subport. Time lost in outside work or subport due to the elements not to be charged.

This is not to apply to members who wish to stop over on their own account. Any member of I. L. A. locals engaged to go to work at any outside work or subport shall have his transportation furnished free of charge.

RULE NO. 5.—WALKING FOREMAN.

No person will be recognized as a walking foreman who is not a member of the Galveston, Houston, or Texas City, I. L. A. Association named as a party to this agreement.

RULE NO. 6.—STARTING TIME.

The starting time of a ship shall be from 8 a. m., 10 a. m., 1 p. m., 3 p. m., and 7 p. m., except when after a ship is started at any of the times named and gangs are organized it is found necessary, for the quick dispatch of the vessel, to commence work at 7 a. m., gangs may be ordered to work at 7. a. m., in which case the walking delegate shall be notified so that all gangs may receive proper notice. Overtime in all such cases to be paid time and one-half between the hours of 7 a. m. and 8 a. m.

RULE NO. 7.

Pay shall start from time of gangs leaving recognized stations, except where a ship is berthed at the T head of any pier, the gangs shall be required to leave stations five minutes before starting time.

RULE NO. 8.

No time to be lost for switching or other causes, under thirty minutes, unless caused by weather conditions.

RULE NO. 9.

Fourteen men shall be employed at all times when loading sacked cargoes, of which no less than six men shall be in the hold.

RULE NO. 10.

Where timber is worked in the hold, one piece in sling, no less than six men shall be placed in the hold. Where two pieces are placed in sling, or both sides of the ship are worked no less than eight men shall be placed in the hold, and they shall be employed as hold men only; they shall not be required to go on deck to tend gangway or act as winchmen. This, however, does not bar the regular gang men from going below to superintend the work that is being done, provided that the gang men shall place a man other than from the hold.

When stowing timber on deck, no less than six men shall be employed, but where both sides of the ship are worked at the same time by one gang no less than eight men shall be employed. The same shall apply to bridge decks.

RULE NO. 11.

Log gangs shall consist of not less than six men in the hold.

RULE NO. 12.

Lumber gangs shall consist of not less than ten men. The foreman in charge to place men to best advantage.

RULE NO. 13.

No less than six men in the hold to be employed when loading or unloading any commodities, with the exception of railway iron, sisal, or lumber, but sufficient men must be employed according to the conditions that may exist. This rule, however, shall not apply to filling in the hatchway with any cargo.

RULE NO. 14.—SHIFTING BOARD AND FEEDER GANGS.

Shifting board and feeder gangs shall consist of not less than seven men; as work in holds nears completion men may be moved to other hatches to assist as required. This rule not to apply to cases where only lining up is necessary, sweeping of holds, repairing or erecting bulkheads.

RULE NO. 15.—GRAIN.

No less than two men shall be employed at each hatch as spout tenders when loading grain.

RULE NO. 16.—SUGAR.

No less than six men to be employed in hold when discharging sugar cargo.

RULE NO. 17.—RIGGING UP.

Nothing in these rules shall debar a stevedore from ordering a gang to rig up and prepare a vessel throughout for working when said vessel arrives between the appointed times of starting work.

RULE NO. 18.

When gangs are required to put on hatches the entire gang shall be employed, except where overtime is in effect.

RULE NO. 19.—BUNKERS ON FIRE.

Handling coal in bunkers on fire when smoke or fumes are present shall be paid for at double the awarded rate for coal work.

RULE NO. 20.

When gangs are required to work five hours in the forenoon, say from 7 a. m. to 12 noon, or 1 p. m. to 6 p. m. in the afternoon, they shall be allowed to take seven minutes for lunch during each five hours.

RULE NO. 21.

Orders for gangs to return to work the following morning must be cancelled by 7 p. m., otherwise gangs reporting will be entitled to two hours' pay if not put to work, provided the men remain subject to call.

RULE NO. 22.

Where gangs are taking in or out cargo with two derricks there shall be placed a man other than hatch foreman on deck to dump tubs or unsling such cargo as is being taken in or out.

RULE NO. 23.

When gangs are shifted from one ship to another during working hours, while working for the same firm, they shall receive the same pay as if working during the time of shifting.

RULE NO. 24.

When a ship is partly loaded or discharged by one stevedore and finished by another, the gangs working for the first stevedore shall have no claim on their hatches under the second stevedore; but under each stevedore gangs must be picked up at the stations as if for their separate ships.

RULE NO. 25.

Gangs starting a hatch must finish it before going into another hatch or shifting to another ship, except to expedite the loading or trimming of ship.

RULE NO. 26.

Fruit ships, when discharging cargo, and all ships when receiving coal into their bunkers; grain ships, when they receive grain previous to discharging or receiving other cargo; passenger ships; when discharging baggage previous to discharging or receiving cargo; and all ships in case of fire, or other unusual and imperative necessity, shall be exempted from rule No. 6. The term "unusual and imperative" to be determined by stevedore and walking delegate or business agent of locals.

RULE NO. 27.

Whenever the men are required to work beyond 8 p. m., they shall be allowed to go for supper; or the stevedore to furnish lunch for the men at his own expense; provided, however, that work shall not continue beyond midnight.

MISCELLANEOUS CHARGES.

Agency fees.—The fees vary and are determined by private arrangement.

Brokerage fees.—The brokerage fee is 1¼ per cent of net ocean freight charge.

Average charge for ship dunnage.—The average charge for ship dunnage is as follows:

Boards, per M feet	$22.50
Cordwood, per cord	10.00
Planks, per M feet	22.50
Braces, per M feet	22.50
Nails, per pound	.05
Ship lap, per M feet	22.50

Consular fees.—Consular fees vary from $2.50 to $10. Each country has the same consular fees at all ports in the world and they are sometimes charged against the ship and sometimes against the cargo. For clearance after regular hours double the usual fees is charged.

Dispatch money.—The allowance for dispatch money varies according to the nature of the contract between charterers and owner. The allowance is usually about one-half the per diem cost of operating the vessel.

Fumigation.—The charge for a vessel of 500 net registered tons or more is $50, and for less than 500 net registered tons $25. The charge for inspection is $10 for a vessel of 500 net registered tons or more and $5 for one of less than 500 net registered tons.

Harbor dues.—There are no charges of this character.

Inspection of cargo.—The charge for inspecting cotton is 1 cent per bale and for general cargo 1 cent per ton.

Interpreters' fees.—There are no established interpreters' fees at this port.

Launch hire.—There are no fixed rates; these are made by special arrangement.

Port warden's fees.—There is no service of this character, except when vessels enter the port in distress or with damaged cargo. In this case an individual arrangement is made between the vessel's captain or agent and the warden for a survey to determine the amount of damage.

Running lines.—The charge for running lines is $10 for mooring and $10 for unmooring, if vessel is moved to a different berth. When vessel goes to sea the charge for unmooring is $5. These charges apply to vessels of over 3,000 net registered tonnage.

Vessel demurrage.—The charge for demurrage varies according to the nature of the contract between charterers and owners.

Weighing.—The customary charge is $1.50 per car.

Tonnage dues.—A duty or tax of 2 cents per net ton is imposed on all vessels at each entry into a United States port from a foreign port or place in North America, Central America, West India Islands, Bahama Islands, Bermuda Islands, Newfoundland, coast of South America, bordering on the Caribbean Sea above and including the mouth of the Orinoco River. This tax is not to exceed, in the aggregate, 10 cents per net ton in any one year.

A tonnage tax of 6 cents per net ton is imposed at each entry on all vessels which shall be entered in any port of the United States from any other foreign port or place. This tax is not to exceed 30 cents per ton per annum.

The tonnage year is computed from the date of the first payment and expires on the day previous to the corresponding date of the following year. No tonnage tax is imposed on vessels entering a port in distress nor on those not engaged in trade.

Light money and alien tonnage tax.—In addition to the regular tonnage dues, light money at the rate of 50 cents per net ton and an alien tonnage tax of the same amount are, with certain infrequent exceptions, imposed at each entry thereof into the ports of the United States upon vessels of countries with which the United States has no commercial treaty and upon vessels not exempted by presidential proclamation, except that upon foreign-owned vessels built in the United States the alien tonnage tax is 30 cents per ton. An alien tonnage tax of 50 cents per ton is also imposed upon vessels of American registry carrying one or more foreign officers. These charges are of infrequent occurrence.

FUEL AND SUPPLIES.

ELECTRIC CURRENT.

Electric current is furnished by two companies, the Bush Electric Co., owned by the City's Service Co., and the Galveston Electric Co.

The Bush Electric Co., located at Twenty-sixth and Post Office Streets, furnishes alternating or direct current of 110, 220, and 2,300 volts, 2-phase, 60-cycle, for lighting, heat, and power in the city, and exclusively to wharves, dry dock on Pelican Spit, and other industries in the harbor. The normal demand is 2,500 kilowatts, and there is a surplus capacity of 750 kilowatts per hour.

The Galveston Electric Co., located at Twentieth Street and Avenue I, furnishes alternating or direct current of 115, 230, 600, and 2,300 volts, 2-phase, 60-cycle, for power, lighting, and street-car service. The normal demand is 825 kilowatts with the plant fully loaded, and there is no surplus capacity.

Information regarding electric current is given in the table showing the data relative to piers, wharves, docks, etc.

WATER SUPPLY.

There is an ample supply of fresh water at all piers. The water supply comes from artesian wells on the mainland, 20 miles northwest of Galveston, and is furnished by the Galveston Water Works, which has a capacity of five to six millions gallons per day. This water is good for boiler purposes as well as for household or drinking purposes. It forms very little scale and is not hard on metal. Water is supplied to vessels by means of a portable hose, with meter connected to fire hydrants on the piers. The rate of delivery depends on the number of leads, and averages about 15 tons per hour per short hose lead. The charge is 1 cent per cubic foot with an additional service charge of $2.

Information regarding water supply is given in the table showing data relative to piers, wharves, docks, etc.

BALLAST.

There are no concerns at Galveston dealing exclusively in ballast, as the demand is very small. Mud shell secured from Galveston Bay can be supplied by two concerns at about $1 per ton on board.

W. A. Kelso, whose address is 2220 Mechanic Street, has a derrick on the south end of Pier No. 34 with a capacity of 200 tons per hour.

W. D. Haden, located at Piers No. 34 and No. 15, has a derrick barge with a capacity of 100 tons per hour.

PROVISIONS.

The city is well supplied with provisions of all kinds in any quantity required by vessels.

OIL BUNKERING.

Facilities for oil bunkering are available at several points along the water front, and vessels may also be bunkered by barge while at piers. There are six companies furnishing fuel oil at the port. These are the Magnolia Petroleum Co., Gulf Refining Co., Rio Bravo Oil Co., Texas Co., Mexican Petroleum Corporation, and the National Oil & Transport Co.

The Magnolia Petroleum Co. has 3 storage tanks located in the rear of Pier 41, with an 8-inch pipe line running on Piers 39 and 40. These tanks have a storage capacity of 93,000 barrels, with a bunkering capacity of 1,500 barrels per hour.

The Gulf Refining Co. maintains its own plant at Pier 5, at the east end of the water front. This company has 8 steel tanks with a storage capacity of 250,000 barrels. Vessels are bunkered at the pier at the rate of 1,200 barrels per hour. This company also has one towed barge with a carrying capacity of 600 barrels, which bunkers at the rate of 200 barrels per hour.

The Rio Bravo Oil Co. is located at Piers B and C of the Southern Pacific Terminal Co. at Forty-fifth Street. It has a storage capacity of 440,000 barrels, with a bunkering capacity of 800 barrels per hour.

The Texas Co. has one 10-inch and one 8-inch pipe line on Pier C of the Southern Pacific Terminal Co. This company has a storage capacity of 109,086 barrels, with a bunkering capacity of 600 barrels per hour.

The Mexican Petroleum Corporation is located at Fourth Street and Avenue A. In addition to a modern pier and storage plant at this site this company also has a 10-inch pipe line at Pier 41. There are 6 steel tanks with a storage capacity of 330,000 barrels, with a bunkering capacity of 4,000 barrels per hour.

The National Oil Co. has a 14-inch pipe line at Pier A of the Southern Pacific Terminal Co. This company has 3 steel tanks with a storage capacity of 165,000 barrels, bunkering at the rate of 4,000 barrels per hour.

The accompanying table shows additional information regarding each of the above oil facilities:

Fuel oil facilities.

	Magnolia Petroleum Co., Galveston, Tex.	Gulf Refining Co., Galveston, Tex.	Rio Bravo Oil Co., Galveston, Tex.
Storage facilities—Tanks:			
Location	Piers Nos. 39 and 40	Pier 5, east end of water front.	Piers B and C, Southern Pacific Terminal.
Number of tanks	3	8	8.
Type of construction	Steel above ground	Steel above ground	Steel above ground.
Total storage capacity (42-gallon barrels).	93,000	250,000	440,000.
Intake pipe lines—			
Number	1	4 and 2	1.
Size (inches)	8	10 and 6	10.
Supply:			
Source of supply	Tampico, Mexico	Port Arthur, Tex., and Tampico, Mexico.	Tampico, Mexico.
How received	Bulk tank steamers	Bulk tank steamers and barges with occasional tank shipment from Houston, Tex.	Bulk tank steamers belonging to Southern Pacific Co.
Grades	Mexican fuel 11°–12° and 14°–16° (Be.).	Heavy, very heavy, and various grades, 11°, 16°, and 28° (Be.).	Heavy Mexican fuel oil, 12° (Be.).
Quantity kept in stock—			
Maximum (barrels).	75,000	250,000	440,000.
Normal (42-gallon barrels).	3,000	100,000	300,000.
Bunkering facilities:			
Pipe-line piers, wharves, loading heads, or dolphins.—	Lines running on Piers 39 and 40.	Pier 5	Line running on Pier B.
Reference number on map.	18	2	
Location	Foot of 39th and 40th Sts.	Foot of 5th St	45th St.
Type and construction.	Creosoted pile with sheet pile bulkhead and sand and shell fill. Wood deck.	Creosoted piling, wooden decking.	Creosoted pile with sheet pile bulkhead, sand fill, with 6-inch concrete floor inside.
Actual berthing space for bunkering (feet).	4,500	1,000	3,400.
Depth of water, mean low water (feet).	28 to 30	30	28 to 30.
Bunkering capacity (barrels per hour).	1,500	1,200	800.

Fuel oil facilities—Continued.

	Magnolia Petroleum Co., Galveston, Tex.	Gulf Refining Co., Galveston, Tex.	Rio Bravo Oil Co., Galveston, Tex.
Bunkering facilities—Continued.			
Discharge pipe lines—			
Number	6	2 and 1	1.
Size (inches)	8 and 10	20 and 8	10-inch main with 6-inch laterals.
Hose—			
Size (inches)	6 and 8	8 and 6	6.
Total length (feet)	20 and 25	150	20.
Connections—			
Size (inches)	8 and 6	6	6.
Number of holes in flanges.	12 and 8	6	10.
Barges:			
Total number	None	1 (wooden)	None.
Towed or self-propelled.		Towed	
Carrying capacity (barrels).		600	
Bunkering capacity (barrels per hour).		200	
Hose—			
Size (inches)		3	
Total length (feet)		25	
Connections—			
Size (inches)		3. Can make any connection.	
Number of holes in flanges.			
Remarks	The tanks are about 400 yards from Pier 41. The pier is about one-half mile from the geographical center of the harbor.	The tanks are from 300 to 750 feet in the rear of Pier 5.	Supplies the steamships of the South Pacific, Atlantic Line and the locomotives of the Southern Pacific Ry.

	Texas Co., Galveston, Tex.	Mexican Petroleum Corporation, Galveston, Tex.	National Oil Co., Galveston, Tex.
Storage facilities—Tanks:			
Location	1 mile south of Pier C, Southern Pacific Terminal.	4th St. and Avenue A	Foot of 41st St.
Number of tanks	2	6	3.
Type of construction	Steel above ground	Steel above ground	Steel above ground.
Total storage capacity (barrels).	109,086	330,000	165,000.
Intake pipe lines—			
Number	2	2	1.
Size (inches)	One, 10 inches; one, 8 inches.	10 inches	14 inches.
Supply:			
Source of supply	Tampico, Mexico	Tampico, Mexico	Tampico, Mexico.
How received	Bulk tank steamers and barges.	Bulk tank steamers and barges.	Bulk tank steamers and barges.
Grades	Heavy Mexican fuel and bunker fuel "C."	Crude "C" bunker oil (Mexican topped oil 15° to 17° Baumé)	Mexican fuel oil, 12° (Be.)
Quantity kept in stock—			
Maximum (barrels)	109,000	330,000	165,000.
Normal (barrels)	60,000	275,000	50,000.
Bunkering facilities:			
Pipe-line piers, wharves, loading heads, or dolphins.	Pier C, Southern Pacific Terminal.	Pier 4	Pier A, Southern Pacific Terminal.
Location	Foot of 47th St	Foot of 4th St	Foot of 43d St.
Type and construction.	Creosoted pile with sheet pile bulkheading.	Creosoted piling wooden decking.	Creosoted pile with sheet pile bulkheading and sand fill.
Actual berthing space for bunkering (feet).	1,400	500	1,400.
Depth of water, mean low water (feet).	28 to 30	33	28 to 30.
Bunkering capacity (barrels per hour).	600	4,000	4,000.

Fuel oil facilities—Continued.

	Texas Co., Galveston, Tex.	Mexican Petroleum Corporation, Galveston, Tex.	National Oil Co., Galveston, Tex.
Bunkering facilities—Con.			
Discharge pipe lines—			
Number	2	2	2.
Size (inches)	One, 10 inches; one, 8 inches.	10	8.
Hose—			
Size (inches)	4, 6, and 8	6 and 8	8.
Total length (feet)	25 and 30 foot lengths	30-foot lengths	40-foot lengths.
Connections—			
Size (inches)	4, 6, and 8	10, 8, 6, 4, and 2, by aid of reducers.	8.
Number of holes in flanges.	6 and 8	8 "C" clamps used on each flange.	Standard.
Barges:	None	None	None.
Remarks		Can bunker two steamers or discharge two steamers or unload one and bunker one at same time. Plant operates day and night. Service includes bunkering steamers and loading oil into tank cars.	

COAL BUNKERING.

Bunker coal at Galveston is furnished by the Galveston Coal Co. The plant located at Pier No. 34, between Thirty-third and Thirty-fifth Streets, is central to shipping and easily accessible for all vessels entering the port. Vessels are bunkered by means of a steel tower 96 feet high, with steel boom 62 feet long, reaching over the vessel, carrying a 2½-ton clamshell bucket, with a delivery capacity of 80 to 100 tons per hour. This company also operates three barges for bunkering alongside. These are equipped with steam derricks and clamshell buckets and have an aggregate capacity of 190 tons per hour. Under the subject of floating equipment, page 68, a complete list of such equipment operated by this company will be found.

Alabama Shipley washed steam coal of excellent quality is carried in stock. There is open storage for 25,000 tons of coal.

PORT AND HARBOR FACILITIES.

PIERS, WHARVES, AND DOCKS.

There are 31 piers at the port of Galveston which have depths of water ranging from 12 to 30 feet at mean low water. Of these wharves, 9 are used for overseas freight, such as cotton, flour, oil-cake meal, etc., 2 for rough overseas freight consisting of sulphur, scrap iron, steel billets, copper, etc., and 4 for general overseas freight. There are 4 wharves used for handling fuel oil, 1 for import fruit, 1 for handling fish, 1 for handling coal, gravel and shell, 4 for

export grain, 1 for railroad car transfer, while the remainder are used for miscellaneous and private purposes.

The principal piers at Galveston are located on the south side of the channel and extend from Ninth Street to Forty-seventh Street, a distance of 2½ miles. A few facilities devoted to ship-repair purposes are located on Pelican Island, on the north side of the channel where there is an additional mile of frontage. The majority of the piers have transit sheds. On the aprons alongside these sheds are railroad tracks so arranged that cargo may be handled direct from cars to vessels and from vessels to cars.

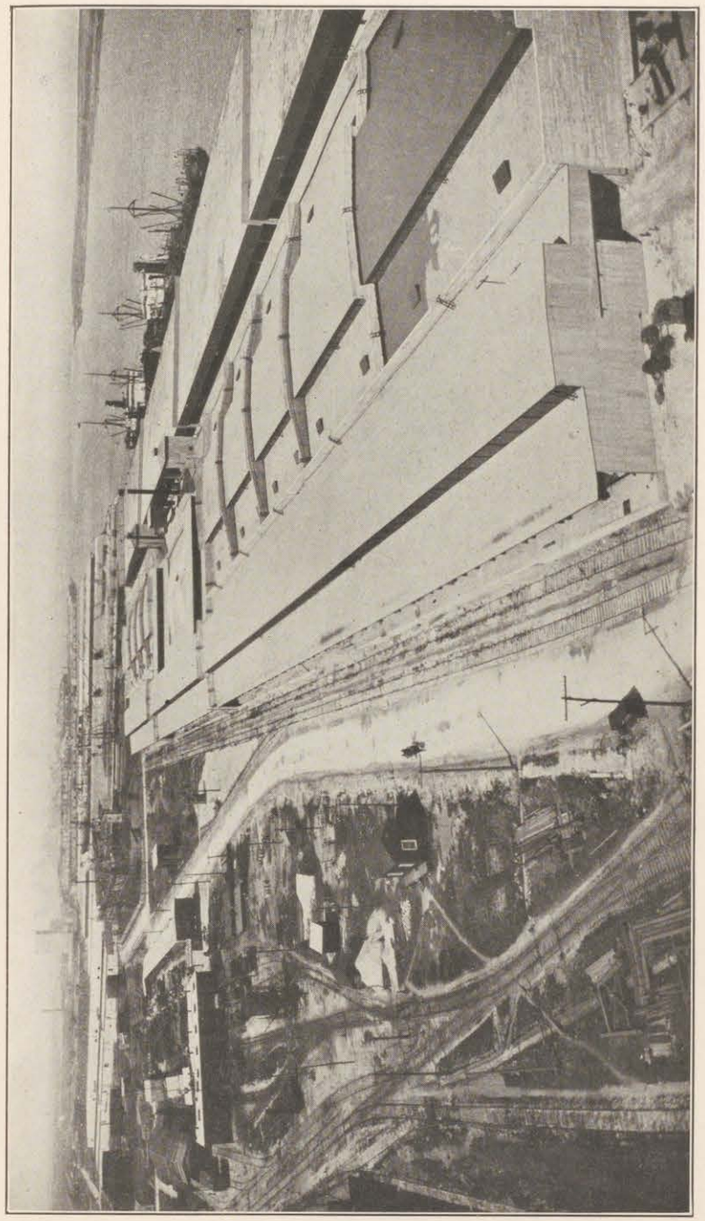
Extending from Tenth Street west to Forty-first Street are the terminals of the Galveston Wharf Co. These wharves occupy a total channel frontage of 12,400 linear feet and have a berthing capacity of 31,152 linear feet. With the exception of Pier 41, the piers are of creosoted pile construction, with sheet-pile bulkheading and sand and shell fill. Pier 41 is constructed entirely of reinforced concrete, except for the apron, which is of creosoted pile. Most of these piers are separated by slips of sufficient width to permit, when necessary, the breasting in of three ships in a slip.

The Galveston Wharf Co. operates a terminal railroad which receives and delivers, at the interchange tracks of the several rail carriers, all cars bound to or from its wharves.

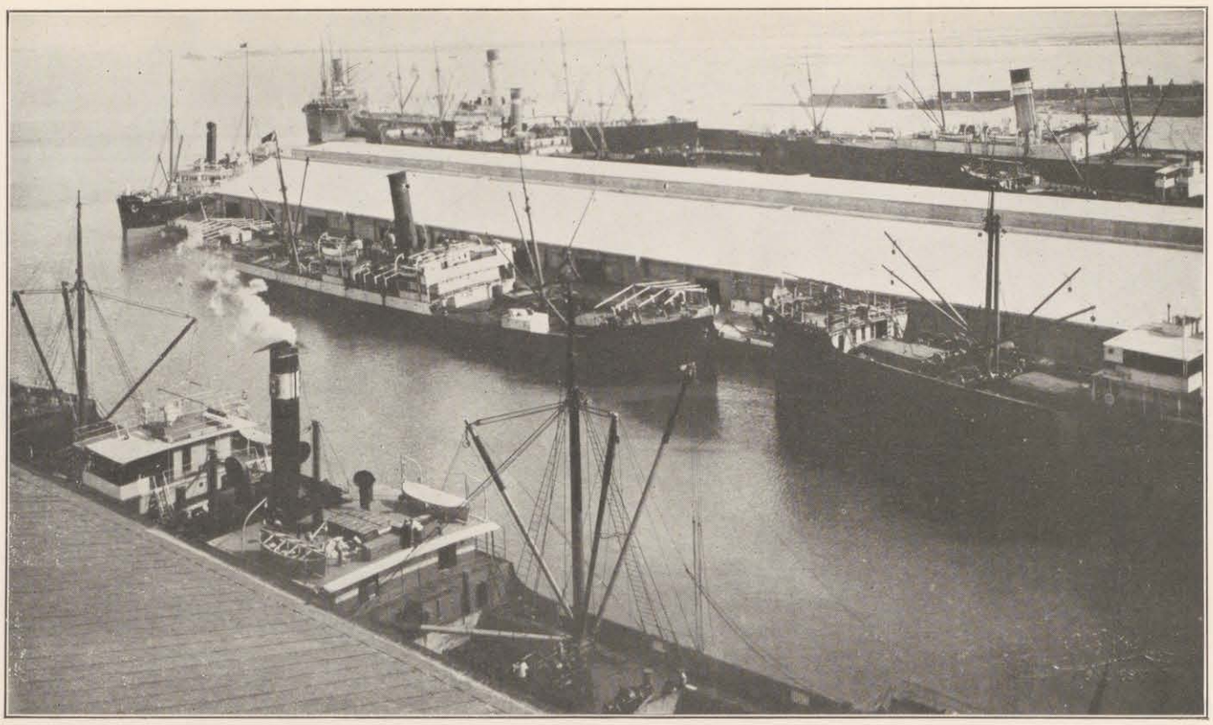
The wharf company has constructed adequate modern highways along the water front, affording access to its terminals.

Extending west of the Galveston Wharf Co. is the property of the Southern Pacific Terminal Co. This company owns a channel frontage of 4,290 feet, of which 1,350 feet is developed. There are 3 piers and 2 slips, having a berthing capacity for 7 average-size ships. These piers, designated A, B, and C, are all constructed of creosoted piles with sheet-pile bulkheading. Piers A and C are open, while Pier B is equipped with two modern transit sheds. Ample trackage sidings, switches, etc., are provided, facilitating the rapid interchange of traffic between water and all local railroads. Car storage facilities are provided both at the terminal and in the yards of the Southern Pacific Co.

Detailed information regarding all the wharves of the port is shown in the following table:



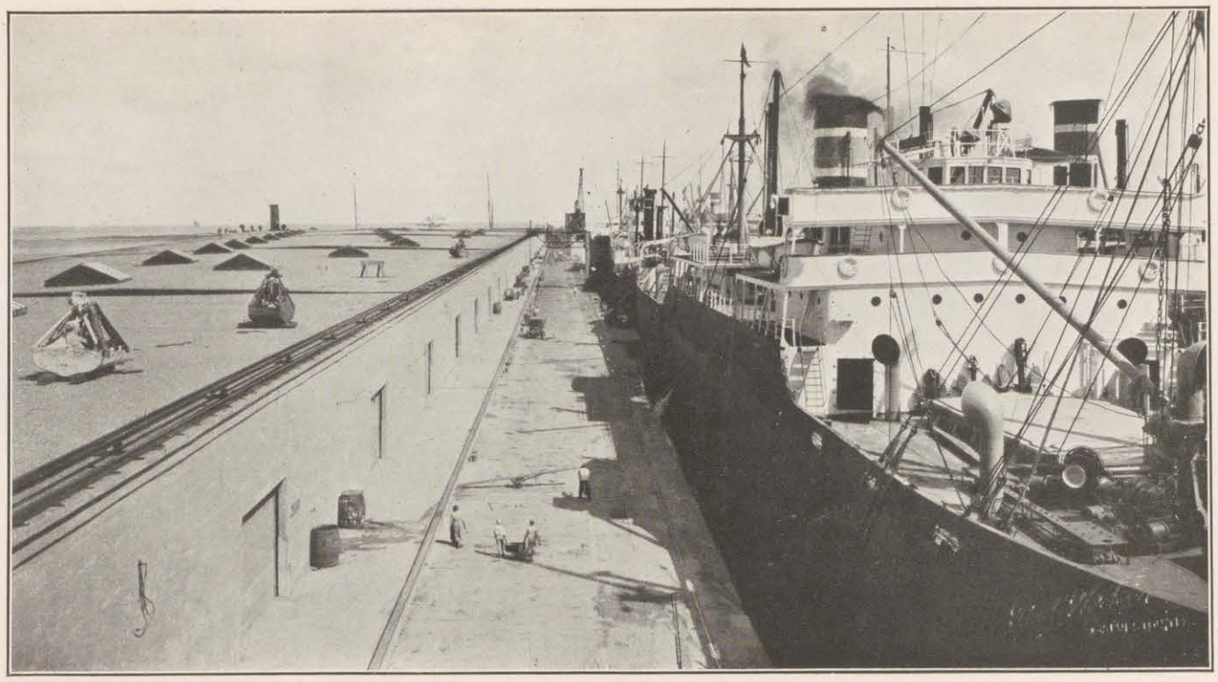
GALVESTON WHARF COMPANY'S PIERS NOS. 27, 28, AND 29.



GALVESTON WHARF COMPANY'S PIERS NOS. 10, 11, 12, AND 13.

GALVESTON WATER FRONT SHOWING SOUTHERN PACIFIC TERMINAL COMPANY'S PIERS "A," "B," AND "C," AND GALVESTON WHARF COMPANY'S PIERS.

Made expressly for this report by the U. S. Army Air Service.



GALVESTON WHARF COMPANY'S PIER NO. 41.

GALVESTON WHARF COMPANY'S PIERS NOS. 35, 36, 37, 38, 39, AND 40.

Made expressly for this report by the U. S. Army Air Service.

Piers, quays, wharves, moles, and docks (except dry docks).

SOUTH SIDE OF CHANNEL.

	1			2			3		
Reference number on map	1			2			3		
Name	Mexican Petroleum Corporation Dock.			Gulf Refining Co. oil dock.			Santa Fe transfer slip.		
Exact location in harbor	Opposite the U. S. immigration station at foot of 4th St.			East end of water front, between 4th and 5th Sts.			At east end of the wharf front at 9th St.		
Owned by	Mexican Petroleum Corporation			Gulf Refining Co.			Santa Fe Dock & Channel Co.		
Operated by	do			do			Do.		
Purpose for which used	Receipt and shipment of oil and oil products			Receipt and shipment of oil and oil products			Used in transferring railroad trains to and from Port Bolivar.		
Type of construction	Creosoted pile with wooden deck			Creosoted pile with wooden deck			Creosoted pile with sheet pile bulkhead and sand and shell fill; wooden deck.		
	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.
Description:	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Dimensions	1,000	1,000	30	1,000	1,000	40			
Width of apron	Open wharf			Open wharf					
Berthing space available		500	30	1,000		40			50 end on.
Depth of water at m.l.w	30	30	30	30		30			13
Deck above m.l.w.	15	15	15	12	12	12			8
Capacity per square foot	250 pounds			250 pounds					
Lighted or unlighted	Lighted			Lighted			Lighted.		
Transit sheds	None			None			None.		
Handling facilities	Pier is equipped with pipe lines and connections for delivering and receiving fuel oil to and from steamers. For details of these facilities see "Oil bunkering."			Pier is equiped with pipe lines and connections for handling oil to and from steamers. For details of these facilities see "Oil bunkering."			Hinged apron lowered and raised by counterweights.		
Railway facilities	Gulf, Colorado & Santa Fe R. R. and Galveston Wharf Co. R. R. No tracks on pier.			Gulf, Colorado & Santa Fe R. R. and Galveston Wharf Co. R. R. No tracks on pier			Gulf, Colorado & Santa Fe R. R. No tracks on pier.		
Water supply	City service			City service					
Fire protection	One 40-gal. Foamite cart at approach to pier; one 2½ gal. extinguisher on pier; 12 standard city two-way fire hydrants on pier with 300 feet of hose.			Fire plugs every 100 feet; ample supply of fire hose with chemical fire extinguishers.					
Electric current				Own electric plant					
Remarks	Pier used by the Pan-American Petroleum & Transport Co. and by vessels receiving bunkers.						This is a railroad ferry slip, the transfer of trains to and from Port Bolivar being made by the barge "W. E. Maxson," a 3-track ferry barge having a capacity of 18 cars. This barge is handled by the tug "J. W. Terry."		

Piers, quays, wharves, moles, and docks (except dry docks)—Continued.

SOUTH SIDE OF CHANNEL—Continued.

	4 Pier 10.			5 Piers 11 and 12.			6 Pier 14.		
Reference number on map									
Name									
Exact location in harbor	At foot of 10th St.			At foot of 13th St.			At foot of 14th St.		
Owned by	Galveston Wharf Co.			Galveston Wharf Co.			Galveston Wharf Co.		
Operated by	do.			Lykes Bros. (Inc.)			Do.		
Purpose for which used	Handling export and import tonnage consisting principally of export cotton.			Handling import and export tonnage consisting principally of cotton, sugar, flour, paper from Germany, and oil cake meal.			Used principally for handling bulk articles, such as sulphur, scrap iron, steel billets, etc.		
Type of construction	Creosoted pile with sheet-pile bulkhead and sand and shell fill; wooden deck.			Creosoted pile with sheet-pile bulkhead and sand and shell fill; wooden deck.			Creosoted pile with sheet-pile bulkhead and sand and shell fill.		
	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.
Description:	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Dimensions		1,163	362	1,040	976	368	705	600	300
Width of apron (feet)	30			33			30		
Berthing space available		1,163	362	1,040	856	368	705	600	300
Depth of water at m. l. w	28–30	28–30	30	28–30	28–30	30	28–30	28–30	30
Deck above m. l. w	9	9	9	10	10	10	10	10	10
Capacity per square foot	250 pounds.			250 pounds.			250 pounds.		
Lighted or unlighted	Lighted.			Lighted.			Unlighted.		
Transit sheds:									
Length and width	1,096 by 1,350 by 150 feet.			No. 11, 982 by 95 feet; No. 12, 946 by 95 feet.			None.		
Total floor area	186,922 square feet.			80,814 square feet.					
Height between floors	17 feet to eaves (1 floor).			17 feet to eaves (1 floor).					
Floor load (per square foot).	250 pounds.			250 pounds.					
Lighted or unlighted	Lighted.			Lighted.					
Handling facilities	None.			None.			Grain elevator located on pier.		
Railway facilities:									
Railway connecting	All railroads entering Galveston.			All railroads entering Galveston.			All railroads entering Galveston.		
Tracks—									
On open wharf							Upper side, two, 650 feet long, surface.		
On string piece or apron.							Lower side, two, 650 feet long, surface.		
Inside transit shed							Passing through elevator, two, 600 feet long, surface.		
Rear of transit shed	3 tracks, 1,125 feet, each, surface.			Between transit sheds, two, 950 feet, each, depressed.					
Water supply	City service.			City service.			City service.		
Fire protection	Standard fire hydrants, 4 in shed proper, one 40 feet southwest of end of shed; fire buckets, barrels, and hose.			Standard fire hydrant southwest corner of pier. Hydrant in each section, fire buckets, barrels, and hose.			Standard fire hydrant at south and north ends of pier; fire buckets, barrels, and hose.		
Electric current				Current available.			Current available.		
Remarks				Transit sheds of frame construction covered with galvanized iron. Vitrified-brick floors. Shed divided by 3 reinforced, concrete fire walls.			Pier 14 is an open uncovered pier.		

	7 Pier 15.			8 Piers 16–18.			9 Piers 19–20.		
Reference number on map									
Name									
Exact location in harbor	At foot of 15th St.			Between 16th and 18th St.			Between 18th and 20th Sts.		
Owned by	Galveston Wharf Co.			Galveston Wharf Co.			Galveston Wharf Co.		
Operated by	Lone Star Steamship Co.			do.			Do.		
Purpose for which used	Coastwise tonnage.			Handling export and import tonnage principally cotton, lumber, staves, copper, etc.			Principally for handling bananas. Other miscellaneous export and import cargoes also handled.		
Type of construction	Creosoted pile with sheet pile bulkhead and sand and shell fill; wood deck.			Creosoted pile with sheet pile bulkhead and sand and shell fill; wood deck.			Creosoted pile with sheet pile bulkhead and sand and shell fill.		
	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.
Description:	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Dimensions	640	420	341	180	180	775	120		746
Width of apron (feet)	32	60	32	10	29	29	17.5		
Berthing space available	600		250	180	180	775	120		746
Depth of water, m. l. w	28–30		30	30	30	30	30		30
Deck above m. l. w	10	10	10	10	10	10	8.6		8.6
Capacity per square foot	250 pounds.			250 pounds.			250 pounds.		
Lighted or unlighted	Lighted.			Lighted.			Lighted.		
Transit sheds:									
Length and width	646 by 341 feet.			750 by 150 feet.			182 by 75 feet.		
Total floor area	207,020 square feet.			107,330 square feet.			13,650 square feet.		
Height between floors	17 feet to eaves (1 floor).			17 feet to eaves (1 floor).			17 feet to eaves (1 floor).		
Floor load per square foot.	250 pounds.			250 pounds.			250 pounds.		
Lighted or unlighted	Lighted.			Lighted.			Lighted.		
Handling facilities	None.			None.			3 movable banana conveyors, electrically operated; maximum capacity 2,000 bunches per hour each; 5 loading legs of the Texas Star flour mill at upper end of pier.		
Railway facilities:									
Railway connecting	All railroads entering Galveston.			All railroads entering Galveston.			All railroads entering Galveston.		
Tracks—									
On open wharf							1 track, 375 feet long, surface.		
On string piece or apron.	West side, 2, 475 foot each, surface.						1 track, 350 foot long, for conveyor, which also uses one of the rail tracks.		
Inside transit shed							3, tracks, 1,625 feet total, surface.		
Rear of transit shed				South side of pier, 2, 525 feet each, surface.					
Water supply	City service.			City service.			City service.		

Piers, quays, wharves, moles, and docks (except dry docks)—Continued.

SOUTH SIDE OF CHANNEL—Continued.

Reference number on map	7	8	9
Name	Pier 15—Continued.	Piers 16-18—Continued.	Piers 19-20—Continued.
Fire protection	3 standard fire hydrants located on pier proper; 1 additional, 50 foot from southeast corner, another 100 feet from southwest corner pier; buckets, barrels, and hose.	3 standard fire hydrants located on pier: 1 additional 100 feet from southwest corner, another next to slip at southwest corner; fire buckets, barrels, and hose.	Fire buckets, barrels, and hose located on pier. No hydrants.
Electric current	Current available	Current available	Current available.
Remarks	Transit shed of frame construction except west side which has a concrete wall for fire protection.	Transit shed of wood construction	Pier used by the Snyder Banana Co.; unloading conveyor owned by the Fruit Dispatch Co.

Reference number on map	10			11		
Name	Pier 21.			Pier 22.		
Exact location in harbor	At foot of 21st St			At foot of 22d St.		
Owned by	Galveston Wharf Co.			Galveston Wharf Co.		
Operated by	do.			Do.		
Purpose for which used	Handling export and import tonnage, principally cotton, lumber, copper, etc. Used by Lallier & Lattar Line and Fowler & McVitie Steamship Co.			Exclusively by the Gulf Fisheries in receiving fish from schooners for shipment.		
Type of construction	Creosoted pile with sheet pile bulkhead and sand and shell fill			Creosoted pile with sheet pile bulkhead and sand and shell fill.		
	Lower side.	Upper side.	Face.	South side.	Upper side.	Face.
Description:	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Dimensions			562	225	115	225
Width of apron (feet)	17.5			17.5		
Berthing space available			562	225	115	225
Depth of water at m. l. w.			30	12	30	30
Deck above m. l. w.			7.5	8	8	8
Capacity per square foot	250 pounds			250 pounds.		
Lighted or unlighted	Lighted			Lighted.		
Transit sheds:						
Length and width	552 feet long, width tapering from 230 to 90 feet			220 by 110 feet.		
Total floor area	74,500 square feet			13,950 square feet.		
Height between floors	17 feet to eaves (1 floor)			17 feet to eaves (1 floor).		
Floor load per square foot	250 pounds			250 pounds.		
Lighted or unlighted	Lighted			Lighted.		
Handling facilities	None			None.		
Railway facilities:						
Railway connecting	All railroads entering Galveston			All railroads entering Galveston (at inner side of slip 22). No tracks on pier.		
Tracks—Rear of transit shed	3, 525 feet each, surface					
Water supply	City service			City service.		
Fire protection	1 standard fire hydrant southwest corner pier; 1 at northwest corner of pier; fire buckets, barrels, and hose.			1 standard fire hydrant southeast corner of pier; 10 Pyrene extinguishers; 1 electric pump with hose; fire buckets, barrels, and hose		
Electric current	Current available			Current available.		
Remarks	Transit shed is of wooden construction with 3-inch plank floor			Transit shed of wooden construction with 3-inch plank floor.		

Reference number on map	12			13			14		
Name	Piers 23-26.			Piers 27-28.			Piers 29-33.		
Exact location in harbor	Between 23d and 26th Sts.			Between 27th and 29th Sts.			Between 29th and 33d Sts.		
Owned by	Galveston Wharf Co.			Galveston Wharf Co.			Galveston Wharf Co.		
Operated by	Mallory Steamship Co.			do.			Do.		
Purpose for which used	Used for coastwise cargoes Galveston and New York. Commodities consist of merchandise, canned goods, dry goods, manufactured articles, etc.			Handling coastwise tonnage—principally cotton.			Handling export and import tonnage—principally cotton, logs, lumber, copper, flour, etc.		
Type of construction	Creosoted pile with sheet-pile bulkhead and sand and shell fill.			Creosoted pile with sheet-pile bulkhead and sand and shell fill.			Creosoted pile with sheet-pile bulkhead and sand and shell fill. Wood deck.		
	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.
Description:	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Dimensions	220		1,400		100	962	250	940	1,570
Width of apron	30	16		16			23	30-50	23-80
Berthing space available	220		1,400		100	962	250	940	1,570
Depth of water at m.l.w.	15		30		30	30	15	28-30	30
Deck above m. l. w.	10.3		10.3		7.5	7.5	8	8	8
Capacity per square foot	250 pounds			250 pounds			250 pounds.		
Lighted or unlighted	Lighted						Lighted.		
Transit sheds:									
Length and width	1,270 feet long, width tapering from 240 to 200 feet			440 feet long, width tapering from 265 to 85 feet			1,455 feet by 185 feet.		
Total floor area	257,428 square feet			82,255 square feet			221,083 square feet.		
Height between floors	17 feet to eaves (1 floor)			17 feet to eaves (1 floor)			17 feet to eaves (1 floor).		
Floor load (per square foot).	250 pounds			250 pounds			250 pounds.		
Lighted or unlighted	Lighted			Lighted			Lighted.		

Piers, quays, wharves, moles, and docks (except dry docks)—Continued.

SOUTH SIDE OF CHANNEL—Continued.

Reference number on map	12	13	14
Name	Piers 23-26—Continued.	Piers 27-28—Continued.	Piers 29-33—Continued.
Handling facilities	Adjustable electric escalators for raising loaded hand trucks from ship cargo ports to floor of shed. Electric trucks and trailers are used inside transit shed for transferring packages.	None	None.
Railway facilities:			
Railway connecting	All railroads entering Galveston	All railroads entering Galveston	All railroads entering Galveston.
Tracks—			
On open wharf	None	None	None.
On string piece or apron.	None	None	None.
Inside transit shed	East end of shed 2, 500 feet long each, depressed	None	None.
Rear of transit shed	3, 1,400 feet long each, surface	South side, 1,450 feet long, depressed	South side, 2, 1,200 feet long each, surface.
Water supply	City service	City service	City service.
Fire protection	22 standard fire hydrants distributed on these piers. Fire buckets, barrels, hose.	Four standard fire hydrants located as follows: one southwest corner; one southeast corner; one 100 feet from southeast corner; one center pier. Buckets, barrels, hose.	Five standard fire hydrants. Fire buckets, barrels, hose.
Electric current	Current available	Current available	Current available.
Remarks	Transit shed of wood construction, divided by one solid 12-inch wooden fire wall. On solid ground and has 3-inch plank floors.	Transit shed of wood construction with 3-inch plank floor. Built on solid ground parallel to channel.	Transit shed of wood construction with 3-inch plank floor, divided by three reinforced concrete fire walls. Constructed on solid ground parallel to channel.

Reference number on map	15	16	17
Name	Pier No. 34.	Piers 35-36.	Piers 37-38.
Exact location in harbor	Between 33d and 35th Sts	Near the foot of 35th St	Near the foot of 38th St.
Owned by	Galveston Wharf Co	Galveston Wharf Co	Galveston Wharf Co.
Operated by	Galveston Coal Co. and W. D. Hayden	Galveston Wharf Co. operate the covered portions and the Texas Gulf Sulphur Co. the center.	Galveston Wharf Co.
Purpose for which used	Handling sand, gravel, and shell, but principally coal.	Handling export and import tonnage, principally cotton, lumber, sugar, coffee, copper, sulphur, etc.	Handling export and import tonnage consisting principally of cottonseed cake and meal.
Type of construction	Creosoted pile with sheet-pile bulkhead and sand and shell fill.	Creosoted pile with sheet-pile bulkhead and sand and shell fill.	Creosoted pile with sheet-pile bulkhead and sand and shell fill.

	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.
Description:	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Dimensions	732			750	1,270	630	1,250	1,270	336
Width of apron				28	28	28	32	32	32
Berthing space available	732			750	1,270	630	1,250	1,270	336
Depth of water at m. l. w.	28			28-30	28-30	30	28-30	28-30	30
Deck above m. l. w.	8			12	12	12	10.5	10.5	10.5
Capacity per square foot.	250 pounds			250 pounds			250 pounds		
Lighted or unlighted	Lighted			Lighted			Lighted.		
Transit sheds:									
Length and width	None			East side pier, 705 by 55 feet; west side pier, 1,240 by 215 feet.			East shed, 1,200 by 150 feet; west shed, 1,225 by 140 feet.		
Total floor area				East side pier, 89,920 square feet; west side pier, 241,728 square feet.			East shed, 145,152 square feet; west shed, 144,430 square feet.		
Height between floors				East side pier, 14.5 feet to eaves (1 floor); west side pier, 17 feet to eaves (1 floor).			East shed, 17 feet to eaves (1 floor); west shed, 17 feet to eaves (1 floor).		
Floor load (per square foot).				East side pier, 250 pounds; west side pier, 250 pounds.			East shed, 250 pounds; west shed, 250 pounds.		
Lighted or unlighted				East side pier, lighted; west side pier, lighted			East shed lighted; west shed, lighted.		
Handling facilities	One steel steeple 96 feet high with 62-foot steel boom carrying 2½-ton bucket. One 15-ton locomotive crane and one 10-ton crane.			No fixed facilities in shed on west side. Two locomotive cranes, 55-foot reach with 2-ton buckets; located between the transit sheds. Shed on east side being rebuilt; nature of handling facilities not yet determined.			No fixed facilities in shed 37. Middle section of shed 38 equipped with cottonseed cake mill.		
Railway facilities:									
Railway connecting	All railroads entering Galveston			All railroads entering Galveston			All railroads entering Galveston.		
Tracks—									
On open wharf	2, 1,700 feet long, surface			None			None.		
On string piece or apron.	None			None			None.		
Inside transit shed	None			None			None.		
Rear transit shed	None			East shed, 2, 675 feet each; depressed; west shed, 2, 1,200 feet each, depressed.			Between sections 37 and 38, 3, 1,200 feet each, depressed.		
Water supply	City service			City service			City service.		
Fire protection				East transit shed being rebuilt; west transit shed three standard fire hydrants, one in each section, one additional southeast end of pier, and one southwest end of pier. Fire buckets, barrels, hose, etc.			Four standard fire hydrants located on pier proper, another 50 feet from southwest corner of pier. Fire buckets, barrels, hose, etc.		
Electric current	Current available			Current available			Current available.		
Remarks				Transit shed 35 being rebuilt of reinforced concrete with brick floor elevated to height of car floor. Transit shed 36 built of wood with 3-inch plank floor with 2 brick fire walls. Floor elevated to height of car floor.			Transit sheds 37 and 38 are of wood construction covered with galvanized iron and with vitrified brick floors. Each shed divided into three sections by two 12-inch wooden fire walls.		

Piers, quays, wharves, moles, and docks (except dry docks)—Continued.

SOUTHSIDE OF CHANNEL—Continued.

Reference number on map	18 Piers 39–40.			19 Pier 41.			20 Pier A.		
Name									
Exact location in harbor	Near the foot of 40th St.			Near the foot of 40th St.			At foot of 43d St.		
Owned by	Galveston Wharf Co.			Galveston Wharf Co.			Southern Pacific Terminal Co.		
Operated by	do.			do.			Do.		
Purpose for which used	Handling export and import tonnage, principally cotton, copper, lumber, canned goods, sugar, coffee, bagging and ties, etc.			Handling export and import tonnage, principally cotton, lumber, flour, bagging and ties, sisal; etc.			Used for loading grain for export and discharging oil and creosote, etc.		
Type of construction	Creosoted pile with sheet pile bulkhead and sand and shell fill. Wood deck.			Reinforced concrete with apron surrounding pier on creosoted piles.			Creosoted pile with sheet pile bulkhead, sand fill.		
	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.
Description:	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Dimensions	1,235	1,200	783	1,246		415		1,400	150
Width of apron	35	35	35	36		36		25	25
Berthing space available	1,235	1,200	783	1,246		415		1,400	150
Depth of water, m. l. w.	28–30	28–30	30	28–30		30		28–30	30
Deck above m. l. w.	10.5	10.5	10.5	11		11		10	10
Capacity per square foot	250 pounds.			250 pounds.			250 pounds.		
Lighted or unlighted	Lighted.			Lighted.			Unlighted.		
Transit sheds:									
Length and width	East shed, 1,230 feet long; 320 feet north end; 50 feet south end; west shed, 1,230 feet long, 325 feet north end, 50 feet south end.			Length: 1,200 feet east side; 1,335 feet west side. Width: 175 feet south end, 390 feet north end.			None.		
Total floor area	East shed, 231,660 square feet; west shed; 244,480 square feet.			1st floor, 248,711 square feet; 2d floor, 221,935 square feet.					
Height between floors	East shed, 17 feet to eaves (1 floor); west shed, 17 feet to eaves (1 floor).			14 feet, 2 floors.					
Floor load per square foot.	East shed, 250 pounds; west shed, 250 pounds.			250 pounds.					
Lighted or unlighted	East shed, lighted; west shed, lighted.			Lighted.					
Handling facilities	None.			Two, 1½-ton, movable electric gantry cranes with 50 foot reach serving second floor, east side; capacity, 60 tons per hour.			One electrically operated, double belt grain conveyor with 25 chutes; capacity, 40,000 bushels per hour.		
Railway facilities:									
Railway connecting	All railroads entering Galveston.			All railroads entering Galveston.			Southern Pacific system connecting with all lines entering Galveston.		
Tracks—									
On open wharf				None.			3, 1,300 feet each, surface.		
On string piece or apron.	1 on east apron, 1 on west apron—2, 1,200 feet each; surface.			On east apron, 1, 1,200 feet long; surface.			None.		
Rear of transit shed	Between transit sheds; 4, 1,200 feet each; surface.			West side for first floor, 2, 1,270 feet each; depressed; west side for second floor, 1, 1,270 feet, elevated.			None.		
Water supply	City service.			City service.			5 inch main with 2-inch openings. Water delivered through hose at rate of 450 gallons per minute.		
Fire protection	10 standard fire hydrants on pier, in addition 6 hydrants in shed 39, and 7 hydrants in shed 40. Fire buckets, barrels, hose, etc.			17 fire hydrants on first floor of shed; 18 fire hydrants on second floor. Fire buckets, barrels, hose, etc.			Conveyor gallery protected by sprinkler system.		
Electric current	Current available.			Current available.			No electric current at pier.		
Remarks	Transit sheds 39 and 40 are of reinforced concrete construction each divided into 4 sections by reinforced concrete fire wall. Floors elevated to height of car floors. Two of the above tracks are used by the sulphur conveyor.			Shed 41 is two story reinforced concrete building, each floor divided into 4 compartments by 3 reinforced concrete fire walls. Second story is reached by elevated track on west side and by gantry cranes on east side.			Pier leased to Rosenbaum Grain Co. Wharfage and dockage charges covered by general tariff.		

Reference number on map	21 Pier B.			22 Pier C.			23 Rio Bravo Oil Co.
Name							
Exact location in harbor	At foot of 45th St.			At foot of 47th St.			Between 47th and 51st Sts.
Owned by	Southern Pacific Terminal Co.			Southern Pacific Terminal Co.			Southern Pacific Terminal Co.
Operated by	do.			Texas Co. and Rio Bravo Oil Co.			Rio Bravo Oil Co.
Purpose for which used	Handling coastwise general merchandise from cars to ships and vice versa.			Used for receiving oil only.			No wharf. Oil receiving line on Pier C.
Type of construction	Creosoted pile with sheet pile bulkheading, sand fill with 6-inch concrete floor inside.			Creosoted pile with sheet pile bulkheading, sand fill.			Creosoted sheet pile bulkhead.
	Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.	
Description:	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	
Dimensions	1,400	1,400	640	1,400		200	
Width of apron	50	28	50	Open pier			
Berthing space available	1,400	1,400	640	1,400		200	
Depth of water at m.l.w.	28–30	28–30	30	28–30		24	
Deck above m.l.w.	10	10	10	10		10	
Capacity per square foot	250 pounds.			250 pounds.			
Lighted or unlighted	Lighted.			Unlighted.			
Transit sheds:							
Length and width	East side, 1,369 by 56 feet; north end, 590 by 56 feet; west side, 1,369 by 56 feet; 7 bays 50 by 289 feet.			None.			
Total floor area	287,518 square feet.						
Height between floors	22 feet to eaves (1 floor).						
Floor load per square foot.	1,000 pounds.						
Lighted or unlighted	Lighted.						

Piers, quays, wharves, moles, and docks (except dry docks)—Continued.

SOUTH SIDE OF CHANNEL—Continued.

Reference number on map. Name	21 Pier B—Continued.	22 Pier C—Continued.
Handling facilities	12 electric conveyors of 5-ton capacity per hour, and one-60 ton steam operated derrick barge for handling cargo with 45 foot reach.	Three fixed hand-operated oil cranes on apron
Railway facilities:		
Name of railway connecting.	Southern Pacific system connecting with all railroads entering Galveston.	
Tracks—On string piece or apron.	On east apron, 1, 1,400 feet long, surface	2, 1,394 feet each, surface
Water supply	5-inch main with 2-inch openings. Water delivered to ships through hose at rate of 450 gallons per minute.	City Water works, water delivered at rate of 540 gallons per minute.
Fire protection	26 standard fire hydrants with 3,000 feet of 2½-inch hose; three 40-gallon Foamite extinguishers with six other chemical extinguishers; two 1,000 gallon underwriters-fire pumps working at 125 pounds pressure.	City mains and fire hydrants
Electric current	D. C. 230 volts 100 kw./hour available	No current available
Remarks	Pier used by Morgan Line only for coastwise traffic.	Pier is used for receiving oil only for the Rio Bravo Oil Co.

NORTH SIDE OF CHANNEL.

Reference number on map. Name	24 Seaboard Transportation & Shipping Co.	25 Galveston Dry Dock & Construction Co.	26 Suderman & Young.
Exact location in harbor	On north side of channel opposite Pier 28	Opposite Piers 23-26	Opposite Pier 23.
Owned by	Seaboard Transportation & Shipping Co	Galveston Dry Dock & Construction Co	Suderman & Young.
Operated by	do	do	Do.
Purpose for which used	Work in this plant has been abandoned, but the leased ground is still held by them.	Berth for floating dry dock and berthage for vessels awaiting turn on dry dock or undergoing repairs.	Landing place for small boats.
Type of construction		Creosoted pile bulkhead and wooden apron	Creosoted pile wharf.

Reference number on map. Name	27 Gulf Fisheries Co.	28 J. J. Kane.	29 Chas. Clarke & Co.
Exact location in harbor	Opposite Pier 21	Opposite Pier 20	Opposite Pier 19.
Owned by	Gulf Fisheries Co	J. J. Kane	Chas. Clarke & Co.
Operated by	do	do	Do.
Purpose for which used	Marine railway for small boats	Storage for welding plants of J. J. Kane and small repairs.	Repair plant for small boats.
Type of construction	Pile bulkhead around marine railway slip: no wharf.	Pile bulkhead and wharf	Pile bulkhead around marine railway slip; no wharf.
Description:			
Dimensions		25 by 200 feet (face)	
Width of apron		200 feet (face)	
Berthing space available		20 feet (face)	
Depth of water at m. l. w.		10 feet (face)	
Deck above m. l. w.			
Capacity per square foot			
Lighted or unlighted		Unlighted	

Reference number on map. Name	24 Seaboard Transportation & Shipping Co.	25 Galveston Dry Dock & Construction Co. Lower side.	Upper side.	Face.	26 Suderman & Young.
Description:					
Dimensions		Feet. 225	Feet. 900	Feet. 830	18 feet by 145 feet, lower side.
Width of apron		None.			None.
Berthing space available		1,230			
Depth of water at m. l. w.		25	25	25	5 feet, lower side; wharf paralleling dike, upper side.
Deck above m. l. w.		12	12	12	6 feet, lower side.
Capacity per square foot		About 250 pounds			
Lighted or unlighted		Lighted			Unlighted.
Transit sheds		None			None.
Handling facilities	None	None			None.
Railway facilities:					
Railway connecting		Not connected with any railway			Not connected with any railway.
Tracks—On open wharf		All parts of the plant and wharves covered by standard gauge track for operating locomotive cranes.			None.
Water supply		City service			City service (small pipe).
Fire protection		A. D. T. service and private watchmen; portable and hand chemical extinguishers; hose installation to city main; fire boat.			City fire boat only.
Electric current		A. C. 220 volts, 2 phase, 60 cycle, 1,000 kw. available, furnished by Brush Electric Co.			None.
Remarks		Piers, wharves, water and electricity are available only to vessels undergoing repairs. This is strictly a repair facility and not used as a cargo wharf.			

Piers, quays, wharves, moles, and docks (except dry docks)—Continued.

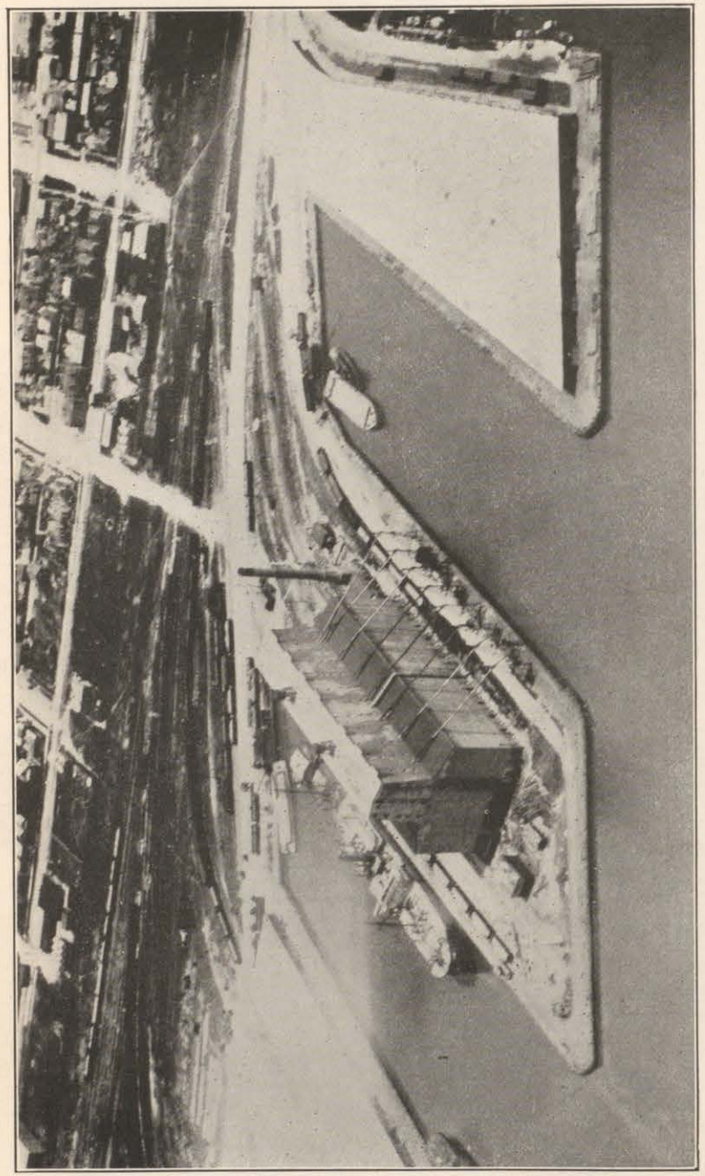
NORTH SIDE OF CHANNEL—Continued.

Peference number on map. Name	27 Gulf Fisheries Co.—Continued.	28 J. J. Kane—Continued.	29 Chas. Clarke & Co.—Continued.
Transit sheds	None	None	None.
Handling facilities	There are no facilities at this plant other than those used in connection with the repair of small fishing schooners.	One 3-ton fixed, air jib crane with 30-foot reach	There are no facilities at this plant other than those used in connection with the repair of barges and small boats.
Railway facilities	Not connected with any railway	Not connected with any railway	Not connected with any railway.
Water supply	City service	City service	City service.
Fire protection	City fire boat only	Private hose connections with hose; city fire boat.	City fire boat only.
Electric current	None	None	None.

Reference number on map. Name	30 U. S. immigration pier.	31 U. S. quarantine wharf.
Exact location in harbor	Opposite Gulf Refining Co. pier on 5th St	Outer end of Pelican Spit Dike.
Owned by	United States	United States.
Operated by	U. S. Immigration Bureau	U. S. quarantine service.
Purpose for which used	This is a small landing wharf now used exclusively by the U. S. Coast Guard Service for small launches, etc.	Built for mooring vessels undergoing quarantine but not used as such. Now used as landing place for quarantine launches.
Type of construction	Timber wharf	Creosoted pile and lumber.
Description:		
Dimensions		16 feet by 300 feet (face), 40 feet out from dike.
Berthing space available		400 feet (face), against dolphins.
Depth of water at m. l. w	About 6 feet (face)	28 feet (face).
Deck above m. l. w		11 feet (face).
Lighted or unlighted		Lighted.
Transit sheds		None.
Handling facilities		None.
Railway facilities		Not connected with any railway.
Water supply		City service.
Fire protection		Hose connection to city main with hose. Chemical fire extinguisher. City fire boat.
Electric current		Brush Electric Co.

GALVESTON WHARF COMPANY'S PIERS NOS. 39, 40, AND 41, SOUTHERN PACIFIC TERMINAL COMPANY'S PIER "A," SUNSET ELEVATOR, AND PIER "B."

Made expressly for this report by the U. S. Army Air Service.



GALVESTON WHARF COMPANY'S PIER NO. 14, GRAIN ELEVATOR "A," AND PIER NO. 15.
Made expressly for this report by the U. S. Army Air Service.

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GRAIN ELEVATORS.

For handling grain Galveston has four elevators. These are A and B, owned by the Galveston Wharf Co., having a storage capacity of 1,500,000 and 600,000 bushels, respectively; Star Mills elevator, owned by the Texas Star Flour Mills, with a capacity of 500,000 bushels; and the Sunset elevator, owned by the Southern Pacific Terminal Co. and operated under lease by the J. Rosenbaum Grain Co., with a capacity of 1,000,000 bushels. The total elevator capacity of the port is 3,600,000 bushels, which will be increased to slightly over 5,000,000 on completion of an addition to elevator B.

Elevator A, located at Piers 13 and 14, is a wooden structure covered with galvanized iron. There are eight shipping legs, seven of which are in use and one held as an auxiliary. Each spout is capable of loading 8,000 bushels per hour. Grain is loaded aboard vessels direct from scales by gravity. Vessels can be loaded in the slip on either side, or on the channel end.

Elevator B, located at Pier 28, is a wooden structure covered with galvanized iron. This elevator has two belt conveyors of 15,000 bushels per hour capacity each, four receiving legs, and three shipping legs. There is now under construction an addition of reinforced concrete, giving an additional storage capacity of 1,400,000 bushels. The total storage capacity of this elevator after completion will be 2,050,000 bushels.

Star Mills elevator, located at Twenty-first Street and Avenue A, is of wooden construction. Its equipment consists of a belt conveyor from the elevator to shipside, three unloading legs, and three spouts for loading to ship. The delivery capacity to ship is 30,000 bushels per hour and 7,000 bushels to car.

Sunset elevator, located at Pier A, West End Harbor, is of reinforced concrete construction. The equipment consists of belt conveyors having a delivery capacity of 40,000 bushels per hour, and 24 chutes 25 feet long. The delivery capacity to cars is 10 to 12 cars per hour. Grain received from cars is dumped into hoppers beneath the tracks and then elevated to scales by belt conveyors and carried to storage bins.

Elevators A and B and Star Mills elevator are operated by steam, while the Sunset elevator is electrically operated.

STORAGE WAREHOUSES.

The port of Galveston is well equipped with warehouses and compresses for the storage and handling of cotton. These storage facilities are capable of handling over a million bales of cotton without resorting to tiering. While the pier sheds of the Galveston Wharf Co. are intended primarily for the accumulation of cargoes for vessels,

they are used to some extent for cotton storage, and the warehouse on Pier 41, which is a two-story concrete structure, is at the present time used exclusively for storage purposes. Some of the storage facilities of the cotton concentration and compress companies are located adjacent to the piers, while others are located at considerable distance from the water front.

There are a number of private warehouse companies which handle both cold storage and general storage.

Storage rates at railroad terminals are given in that section of this report devoted to railroads. The rates in effect at private warehouses vary with the commodity. Details regarding storage warehouses are given in the following tables:

Storage warehouses.

	American Warehouse.	Cotton Concentration Co. Plant No. 1.	Cotton Concentration Co. Plant No. 2.	Cotton Concentration Co. Plant No. 3.
Name of owner	Southern Pacific Terminal Co.	Galveston Wharf Co.	Galveston Wharf Co.	Galveston Wharf Co.
Name and address of operator.	American Warehouse Co., Galveston, Tex.	Cotton Concentration Co., Galveston, Tex.	Cotton Concentration Co., Galveston, Tex.	Cotton Concentration Co., Galveston, Tex.
Exact location	On Pier B	At foot of 35th St., immediately south of Pier 35.	Immediately south of Piers 29 to 33, inclusive.	At foot of 35th St., immediately south of Pier 35.
Kind of storage (dry, cold, etc.)	Dry	Dry	Dry	Dry.
Commodities stored	General merchandise	Cotton	Cotton	Cotton.
Cold-storage facilities.	None	None	None	None.
Construction of warehouse:				
Type of construction.	Concrete, with brick fire walls.	Wooden	Concrete, with brick fire and division walls; divided into 12 sections.	Concrete throughout, including roof.
Number of stories.	One	One	One	Two.
Height between floors.	14 feet	17 feet	17 feet	14 feet.
Total floor area.	60,000 square feet	72,303 square feet	293,406 square feet.	179,276 square feet.
Total capacity	840,000 cubic feet	1,229,151 cubic feet	4,987,902 cubic feet.	2,509,864 cubic feet.
Allowable floor-load.	1,000 pounds per square foot.	On solid ground	On solid ground	300 pounds per square foot.
Transfer between ship and warehouse:				
Method	Hauling by electric trucks and trailers.	Hauling by trucks and floats.	Hauling by trucks and floats.	Hauling by trucks and floats.
Mechanical handling facilities (type and operation).	None	None	None	None.
Equipment in warehouse (quantity, kind, capacity, and operation).	None	Two electric stackers of 1-ton capacity.	Two electric stackers of 1-ton capacity.	Two electric stackers of 1-ton capacity.
Fire protection	There are five standard fire hydrants, with 500 feet hose.	Warehouse is protected by hydrants and hose. All underwriters' requirements fully complied with.	Warehouse is protected by hydrants, hose, barrels, and buckets. All underwriters' requirements fully complied with.	Warehouse is protected by hydrants, hose, barrels, and buckets. All underwriters' requirements fully complied with.
Remarks	Warehouse is located 50 feet from edge of wharf, Pier B, and connected with all railroad lines.	Warehouse is connected with all railroad lines.	Warehouse is connected with all railroad lines.	Warehouse is connected with all railroad lines.

Storage warehouses—Continued.

	Galveston Ice & Cold Storage Co.	Houston Ice & Brewing Co.	Galveston Cotton Press & Warehouse Co.	Island City Warehouse Co.
Name of owner	Galveston Ice & Cold Storage Co.	Houston Ice & Brewing Co.	Galveston Cotton Press & Warehouse Co.	Island City Warehouse Co.
Name and address of operator.	Galveston Ice & Cold Storage Co., Galveston, Tex.	Houston Ice & Brewing Co., Galveston, Tex.	do	Do.
Exact location	Avenue A, between 20th and 21st Sts.	Avenue A, between 22d and 23d Sts.	48th St. and Avenue H; 1 mile to nearest pier.	30th and Post Office Sts., one-half mile to nearest pier.
Kind of storage (dry, cold, etc.).	Cold	Cold	Dry	Dry.
Commodities stored	Any commodities requiring refrigeration.	Meats and green groceries.	Cotton	Cotton.
Cold-storage facilities.	Yes	Yes	None	None.
Construction of warehouse:				
Type of construction.	Reinforced concrete with brick walls.	Reinforced concrete with brick walls.	Reinforced concrete walls, roof and fire walls. Shell floor.	Brick walls, brick fire partition, tar paper roof. Shell floor.
Number of stories.	Three	One	One	One.
Height between floors.	10 feet	9 feet		
Total floor area.	25,000 square feet	8,260 square feet	372,750 square feet.	26,000 square feet.
Total capacity	32,000 cubic feet freezing space; 218,000 cubic feet cooler space.	No freezing rooms; 74,336 cubic feet cooler space.	100,000 bales	5,000 bales.
Allowable floor load (per square foot).	150 pounds	150 pounds		
Transfer between ship and warehouse:				
Method	Railroad cars and hauling by drays.	Hauling by trucks	Hauling by electric trucks of 20 to 25 bales capacity.	Hauling by trucks and floats.
Mechicanical handling facilities (type and operation).	None	None	None	None.
Equipment in warehouse (quantity, kind, capacity, and operation).	One 10-ton electric elevator.	None	None	None.
Fire protection	The city fire department protects the warehouse.	The city fire department protects the warehouse.	Protected by city fire department.	Protected by city fire department.
Remarks	Plant used wholly as a cold storage warehouse. The methods of refrigeration is direct expansion. The ice making capacity is 150 tons per day.	This plant is used by local wholesale merchants and packers, who have leased portions of it. The ice making capacity is 50 tons per day.		

Storage warehouses—Continued.

	Crespi & Co.	Merchants & Planters Compress and Warehouse.	East Yard Shippers Press.	Southern Compress & Warehouse Co.
Name of owner	Crespi & Co.	H. Kempner	Southern Cotton Press & Mfg. Co.	Southern Compress & Warehouse Co.
Name and address of operator.	H. L. Ziegler	do	E. H. Perry & Co.	Do.
Exact location	36th St. between Avenues C and D.	46th St. and Avenue J; 1 mile to nearest pier.	3 blocks south from Pier C.	37th to 41st Sts. between Avenues E and F; one-quarter mile to nearest pier.
Kind of storage (dry, cold, etc.).	Dry	Dry	Dry	Dry.
Commodities stored.	Cotton	Cotton	Cotton	Cotton.
Cold storage facilities.	None	None	None	None.
Construction of warehouse:				
Type of construction.	Brick building, brick fire partitions, tin roof. Shell floor.	Reinforced concrete building.	Wooden building, brick fire walls, tar paper roof. Shell floors with wooden runways.	Corrugated iron on wooden frame, concrete fire partitions. Shell floor.
Number of stories.	One	One	One	One.
Total floor area.	218,000 square feet	673,552 square feet	90,000 square feet	100,000 square feet.
Total capacity.	20,000 bales	100,000 bales	15,000 bales	20,000 bales.
Transfer between ship and warehouse:				
Method	Hauling by trucks and floats.	Hauling by electric trucks of 20 bales capacity each.	Hauling by trucks and floats.	Hauling by trucks and floats.
Mechanical handling facilities (types and operation).	None	None	None	Cable operated by trolley system.
Equipment in warehouse (quantity, kind, capacity, and operation).		Complete trolley system for handling cotton; one high density press with 100 bales per hour capacity each.	None	None.
Fire protection	Protected by city fire department.	Protected by city fire department.	Protected by city fire department.	Protected by city fire department.
Remarks		Warehouse is connected with all railroad lines.		Warehouse is connected with all railroad lines.

Storage warehouses—Continued.

	Southern Products Co.	Oleander Compress & Warehouse Co.	Texas Cotton Factors & Warehouse Co.	Exporters Warehouse Co.
Name of owner	Southern Products Co.	Oleander Compress & Warehouse Co.	Hariss Irby and Vose & Reid Bros.	H. Tiedermann & Co.
Name and address of operator.	Mitsui & Co.	Tarver, Steele & Co.	Texas Cotton Factors & Warehouse Co.	Do.
Exact location	46th to 48th St., between Avenues F and G.	36th St. and Avenue G, one-half mile to nearest pier.	42d St. and Avenue H, three-quarters mile to nearest pier.	35th and Post Office Sts.; one-quarter mile to nearest pier.
Kind of storage (dry, cold, etc.).	Dry	Dry	Dry	Dry.
Commodities stored.	Cotton	Cotton	Cotton	Cotton.
Cold-storage facilities.	None	None	None	None.
Construction of warehouse:				
Type of construction.	Concrete side walls, brick fire walls, tar paper roof. Shell floor, with wooden and concrete runways.	Concrete walls and tar paper roof—(new part). Wooden walls, tar paper roof—(old part). Both parts concrete floor. One concrete fire partition.	Corrugated iron on wooden frame. Brick and concrete fire partitions. Shell floor.	Wooden structure, open on track side. Tar paper roof. Shell floor. Brick fire partition.
Number of stories.	One	One	One	One.
Total floor area.	176,800 square feet	82,500 square feet	174,200 square feet.	62,943 square feet.
Total capacity.	20,000 bales	10,000 bales	25,000 bales	10,000 bales.
Transfer between ship and warehouse:				
Method	Hauling by trucks and floats.	Hauling by trucks and floats.	Hauling by trucks	Hauling by trucks.
Mechanical handling facilities (type and operation).	None	None	None	None.
Equipment in warehouse (quantity, kind, capacity, and operation).	None	None	None	None.
Fire protection	Protected by city fire department.	Protected by city fire department.	Protected by city fire department.	Protected by city fire department.
Remarks			Warehouse is connected by spur track with Galveston, Houston & Henderson R. R. and Gulf, Colorado & Santa Fe Ry.	Warehouse is connected by spur track with Galveston, Houston & Henderson R. R.

Storage warehouses—Continued.

	Liberty Compress & Warehouse Co.	J. Swiff & Co.	National Compress & Warehouse Co.	Galveston Warehouse Co.
Name of owner	H. Nussbaum	J. Swiff	National Compress & Warehouse Co.	Galveston Warehouse Co.
Name and address of operator.	do	do	do	Do.
Exact location	41st St. and Avenue F; one-half mile to nearest pier.	44th St. and Avenue I; one-half mile to nearest pier.	30th to 32d St. between Avenues G and I.	17th St. and Avenue A.
Kind of storage (dry, cold, etc.).	Dry	Dry	Dry	Dry.
Commodities stored	Cotton	Cotton	Cotton	Cotton.
Cold-storage facilities.	None	None	None	None.
Construction of warehouse:				
Type of construction.	Corrugated iron on wooden frame. Concrete fire partition. Shell floors with wooden runways.	Wooden structure, tin roof, no fire walls. Wooden floor.	Concrete and brick walls, concrete fire walls, tar paper roof. Shell floors with wooden runways.	Original brick building burned in November, 1922. A portion rebuilt with concrete walls, no fire walls, wooden floors, tar paper roof.
Number of stories.	One	One	One	One.
Total floor area.	75,000 square feet	4,060 square feet	270,000 square feet.	25,000 square feet.
Total capacity.	7,000 bales	400 bales	30,000 bales	5,000 bales.
Transfer between ship and warehouse:				
Method	Hauling by gasoline trucks.	Hauling by gasoline trucks.	Hauling by gasoline and electric trucks.	Hauling by truck.
Mechanical handling facilities (type and operation).	None	None	None	None.
Equipment in warehouse (quantity, kind, capacity, and operation).	None	None	None	
Fire protection	Protected by city fire department.	Protected by city fire department.	Protected by city fire department.	Protected by city fire department.

Storage warehouses—Continued.

	Gosho Concentration & Compress Co.	Southern Cotton Press & Manufacturing Co.	American Warehouse Co.
Name of owner	Gosho Concentration & Compress Co.	Southern Cotton Press & Manufacturing Co.	American Warehouse Co.
Name and address of operator.	do	Bush & Witherspoon	American Warehouse Co. (S. P. Fleming, Mgr.).
Exact location	46th to 48th St. between Avenues E and F; one-half mile to nearest pier.	29th St. and Avenue C, one-fourth mile to piers.	Pier B, adjoining Southern Pacific Terminal.
Kind of storage (dry, cold, etc.).	Dry	Dry	Dry.
Commodities stored	Cotton	Cotton	Manufactured merchandise.
Cold-storage facilities	None	None	None.
Construction of warehouse:			
Type of construction	Concrete and hollow tile walls, concrete fire walls, tar paper roof. Shell floor.	Brick and hollow tile walls, tin roof, no fire walls. Shell floor.	Hollow tile and concrete walls, brick fire partition, concrete roof. Concrete floor.
Number of stories	One	One	One.
Total floor area	176,800 square feet	156,000 square feet	70,000 square feet.
Total capacity	20,000 bales	10,000 bales	
Transfer between ship and warehouse:			
Method	Hauling by 6 electric trucks of 30 bales capacity each.	Hauling by trucks and floats.	Hauling by trucks.
Mechanical handling facilities (type and operation).	None	None	None.
Equipment in warehouse (quantity, kind, capacity, and operation).	High density press of 110 bales per hour capacity.	None	None.
Fire protection	Protected by city fire department.	Protected by city fire department.	Protected by city fire department.
Remarks			This warehouse does not handle cotton.

	Galveston Warehouse Co.	Galveston Warehouse Co.
Name of owner	Galveston Warehouse Co.	Galveston Warehouse Co.
Name and address of operator	Galveston Warehouse Co., Galveston, Tex.	Galveston Warehouse Co., Galveston, Tex.
Exact location	2501 Avenue A, 150 yards from wharf.	2601 Avenue A, 150 yards from wharf.
Kind of storage (dry, cold, etc.)	Dry	Dry.
Commodities stored	General merchandise	General merchandise.
Cold-storage facilities	None	None.
Construction of warehouse:		
Type of construction	Tar and shell roof, brick walls with concrete floor.	Tar and shell roof, brick walls with concrete floor.
Number of stories	One	One.
Total floor area	10,000 square feet	4,000 square feet.
Transfer between ship and warehouse:		
Method	Motor trucks	Motor trucks
Mechanical handling facilities (type and operation).	None	None.
Equipment in warehouse (quantity, kind, capacity, and operation).	None	None.
Fire protection	The city fire department protects the warehouse.	The city fire department protects the warehouse.

Bulk freight storage, covered and uncovered (except storage warehouses).

Designation.	(a) Owner, (b) operator.	Exact location. (If not on water front, give distance from water terminal.)	Commodities stored.	Covered or uncovered.
Freeport Sulphur Co.	(a) Galveston Wharf Co. (b) Freeport Sulphur Co.	East of Pier 14	Sulphur	Uncovered.
Texas Gulf Sulphur Co.	(a) Galveston Wharf Co. (b) Texas Gulf Sulphur Co.	Between Piers 35 and 36.	Sulphur	Uncovered.
Galveston Coal Co.	(a) Galveston Wharf Co. (b) Galveston Coal Co.	On Pier 34	Coal	Uncovered.

Designation.	Area.	Transfer between ship and pier, quay, or wharf and storage.		
		Method.	Mechanical handling facilities.	
			Type of equipment.	Operation (steam, electric, hydraulic, or hand).
	Sq. ft.			
Freeport Sulphur Co.	20,544	Cranes with clam shell buckets.	2 locomotive cranes operating 2-yard clam shell buckets, loading direct into ship.	Steam.
Texas Gulf Sulphur Co.	138,400	Cranes with clam shell buckets.	2 locomotive cranes operating 2-yard clam shell buckets on elevated track, loading direct into ship.	Steam.
Galveston Coal Co.	89,456	Cranes and bucket conveyor.	2 locomotive cranes and clam shell bucket conveyor, loading direct into ship.	Steam.

DRY DOCKS AND MARINE RAILWAYS.

Galveston has one large dry dock and three marine railways. The Galveston Dry Dock & Construction Co.'s floating dry dock has an overall length of 522½ feet, a bottom width of 84 feet, and a depth on the keel blocks of 22 feet at mean high water. This company also has a marine railway with an overall length of 196 feet, capable of handling vessels up to 200 gross tons. The other two marine railways are used to repair tugs, barges, fishing schooners and small craft.

The dimensions and capacities of these facilities are shown in the following table:

Dry docks, graving and floating, marine railways, patent slips, and pontoons.

	(1)	(2)	(3)	(4)
Type	Floating dry dock.	Marine railway.	Marine railway.	Marine railway.
Name or number	Galveston Dry Dock & Construction Co.	Galveston Dry Dock & Construction Co.	Chas. Clarke & Co.	Gulf Fisheries Co.
Owner	Galveston Dry Dock & Construction Co.	Galveston Dry Dock & Construction Co.	Chas. Clarke & Co.	Gulf Fisheries Co., W. J. Chapman, receiver.
Exact location in harbor.	On Pelican Spit dike, opposite 22d St.	On Pelican Spit dike opposite 22d St.	On Pelican Spit dike opposite 19th St.	On Pelican Spit dike opposite 21st St.
Length:				
Over all	522 feet 6 inches	196 feet	120 feet	96 feet.
On bottom	522 feet 6 inches	196 feet		
Width at entrance.	84 feet	41 feet	40 feet	30 feet.
Depth on keel blocks, high water, ordinary spring tides:				
Forward	22 feet	9 feet	3 feet	11 feet.
Aft	22 feet	14 feet	9 feet	17 feet.
Lifting power	10,000 tons	1,000 tons	500 tons	250 tons.
Crane service	1 small locomotive crane 15 tons, with 45 feet reach of boom serves the yard.	None	None	None.
Date built	1918–19	1915–16	1912	1912.
Remarks	Deck is constructed of wooden pontoons with steel wings, and in two sections which may be separated to form two docks as follows: Length, 32.3 feet; depth on keel blocks, 22 feet; capacity 6,400 tons. Length, 197 feet; depth on keel blocks, 17 feet; capacity 3,600 tons.	Vessels up to 200 gross tons handled.	Used for repairing tugs, barges and small craft.	The Gulf Fisheries Co. operates this plant principally to maintain its fleet of fishing schooners.

Tariff, dry docks, marine railways, etc.

Basis of charge.	Rate for dock days.	Rate for lay days.	Rate for hauling out.	Remarks.
(1) Per gross ton per day.	20 cents, including docking and undocking.	15 cents after first 24 hours.		Rates on 10,000 tons floating dock.
(2) Per day	Varies with size, type and displacement tonnage.	Varies with size, type and displacement tonnage.	Varies with size, type and displacement tonnage.	Rates on 1,000 ton marine railway.
(3) Per day	$125, three lay days, then $25 per day demurrage.		Included in rate for first 3 lay days.	Rates on 300 ton marine railway (Chas. Clarke & Co.).
(4) Size of boat	$125, three lay days		do	

MARINE REPAIR PLANTS.

The port of Galveston is well equipped with marine repair shops and foundries capable of making any necessary repairs to vessels calling at the port. These shops are regularly engaged in rebuilding and making repairs to steel and wooden vessels, barges, boilers and tanks. The character of work ranges from rebuilding old hulks to making all classes of necessary marine repairs to engines, propellers, winches, etc.

Information regarding these facilities is contained in the accompanying form.

Marine repair plants.

Name of plant.	Owner.	Exact location.	Repair shops.		
			Designation.	Dimensions.	Number employees.
Galveston Dry Dock & Construction Co.	Galveston Dry Dock & Construction Co.	On Pelican Island opposite 22d St., Galveston Channel.	Marine Railway Carpenter Plate Machine Blacksmith shop Pipe shop	 50 by 110 feet 80 by 210 feet 75 by 140 feet 50 by 72 feet 32 by 100 feet	About 300.
Chas. Clarke & Co.	Chas. Clarke & Co.	On Pelican Island opposite 19th St., Galveston Channel.			Not in operation at present.
Gulf Fisheries Co.	Gulf Fisheries Co., W. J. Chapman, receiver.	On Pelican Island opposite Pier 22, Galveston Channel.	No repair shops operated.		
Seaboard Transportation & Shipping Co.	Seaboard Transportation & Shipping Co.	On Pelican Island across Galveston Channel.	Machine, blacksmith, plate.		Out of business.
Kane Boiler Works	Kane Boiler Works	2718 Avenue C, 2 blocks south of Pier 28.	1 boiler shop, 1 machine shop.		50 to 200.
McDonough Iron Works	McDonough Iron Works	2609–2627 Avenue A	Machine Foundry Blacksmith Pipe shop Pattern shop	84 by 120 feet 42 by 120 feet 42 by 120 feet 42 by 120 feet 42 by 120 feet	65 and up.
Vulcan Iron Works	Vulcan Iron Works	2016–2024 Avenue C, 2 blocks from Pier 21.	Machine shop	130 by 120 feet	30 to 100.
Texas Carnegie Steel Association	Texas Carnegie Steel Association	Southern Pacific docks at foot of 45th St.	Fabricating structural plate, etc.		60 to 90.
Voight Machine Shop	Voight Machine Shop	2605–2615 Avenue C	Machine shop, brass foundry.	120 by 120 feet	16 and up.

Name of plant.	Equipment for repairs to—				Largest shafts produced.	Largest casting produced.	Capacity.	Stock material carried.	Remarks.
	Wood vessels.	Steel vessels.	Hulls, engines, boilers, and dynamos.	Equipment for calking wood steamers.					
Galveston Dry Dock & Construction Co.	Yes	Yes	Yes	Yes	None	None			Dry docking, overhauling, and general repair work. All necessary tools and equipment for making repairs on vessels, up to 12,000 gross tons.
Chas. Clarke & Co.					None	None			Repair work on hulls of wooden boats, small tugs, and barges.
Gulf Fisheries Co.	Yes			Yes	None	None			Used to repair own schooners of about 100 tons.
Seaboard Transportation & Shipping Co.									
Kane Boiler Works	None	Yes	Complete boiler and tank shop.	None	None	None	None	About 50 tons	Character of work: Steel barges, tanks, steel pontoons, dredge pipe, sheet metal work, general repairs of all kinds. Electric welding. Specialty, marine work. All necessary machinery and equipment for general marine repairs; electric welding plant in shop; floating electric welding plant in harbor.
McDonough Iron Works.	None	Yes	Fully equipped to handle all kinds of small repair work.	None	Forgings up to 12-inch.	3-ton iron castings. Brass in crucible up to 400 pounds; in cupola up to 1 ton.		All sizes of iron, steel, bronze, brass, and other material.	General repair work done.
Vulcan Iron Works	None	Yes	Yes	None	12-inch			About 25 tons brass, ring castings and steel, etc.	Perform all machine work and boiler work above water line. Thoroughly equipped machine shop and forge and boiler shop. All necessary tools for handling heaviest machine job on vessels.
Texas Carnegie Steel Association.		Do not contract directly for ship repairs, but are in a position to furnish various sizes and shapes of steel for such purposes when work is carried on.						4,000 to 10,000 tons.	Largest single fabricator, 25 tons.
Voight Machine Shop.		Electric welding equipment.	Machine tools for general engine and electrical repairs.		11-ton	Small oil furnace for brass castings.		About $3,000 worth of brass babbitt and steel.	Equipped with oxyacetylene welders.

Floating equipment.

BARGES.

	Galveston Coal Co., Galveston, Tex.	Galveston Coal Co., Galveston, Tex.	Galveston Coal Co., Galveston, Tex.
Purpose for which used	Coal bunkering	Coal bunkering	Coal bunkering.
Base from which operated	Pier 34	Pier 34	Pier 34.
Zone of operations	All piers and anchorage	All piers and anchorage	All piers and anchorage.
Number available	1	1	1.
Length (feet)	135	92	167.
Beam (feet)	35	28	36.
Draft, loaded (feet)	10	9	12.
Open or covered	Open hopper deck	Open deck bin type	Open hopper type.
Cargo capacity (tons)	600	200	1,000.
Bunkering rate per hour (tons).	100	75	125.
Mechanical handling facilities:			
Type and description	Bucket hoist with hopper. Belt conveyor on boom having vertical travel and radial swing.	Derrick with clamshell bucket	Bucket hoist with hopper. Belt conveyor on boom having vertical travel and radial swing.
Lifting capacity (tons)		1	
Reach	Conveyor boom 50 feet	50 feet	Conveyor boom 60 feet.
How operated	Steam and electricity	Steam	Steam and electricity.
Tariff	None	None	None.
Remarks	Receiving hopper, 5 tons, has 50-foot vertical travel on 80-foot A frame. Drag line bucket dumps into hopper. Conveyor on 50-foot steel boom having radial swing of 160° and spouts into ship.		Receiving hopper, 7 tons, has 60-foot vertical travel on 90-foot A frame. Drag line bucket dumps into hopper conveyor on 60-foot boom with radial swing of 180° and spouts into ship.

	Galveston Coal Co., Galveston, Tex.	Gulf Refining Co., Galveston, Tex.	Suderman & Young, Galveston, Tex.			Suderman & Young, Galveston, Tex.				W. D. Haden, Galveston, Tex.		
Purpose for which used	Coal lighter	Oil bunkering	Shell			Shell				Shell.		
Base from which operated	Pier 34	From piers 38 and 39 at foot of 39th St.	Pier 14			Pier 14				Pier 14.		
Zone of operations	All piers and anchorage.	All piers and anchorage.	Galveston, Houston, and Texas City.			Galveston, Houston, and Texas City				Galveston Bay and Houston Ship Channel.		
Number available	1	1	1	1	1	2	1	1	1	5	1	1
Length (feet)	92	66	120.0	140.0	120.6	110.0	136.0	140.0	136.0	130.0	131.0	120.0
Beam (feet)	28	18	30.0	30.0	30.0	28.0	31.8	36.0	31.8	30.0	32.3	28.0
Draft, loaded (feet)	9	5	8.0	9.0	8.0	8.0	9.0	9.6	9.0	7.0	7.0	6.0
Open or covered	Open deck, bin type.	Covered	Deck barge.	Deck barge.	Deck barge.	Deck barge.	Deck barge.	Deck barge.	Deck barge.	Deck barge.	Deck barge.	Deck barge.
Cargo capacity	300	600 barrels	375 cubic yards.	450 cubic yards.	400 cubic yards.	350 cubic yards.	400 cubic yards.	550 cubic yards.	400 cubic yards.	325 cubic yards.	440 cubic yards.	300 cubic yards.
Bunkering rate per hour		200 barrels										
Mechanical handling facilities.	None	None	None			None				None.		
Tariff	None	None	None			None				None.		
Remarks	Used as tender to derrick barge.											

	W. D. Haden, Galveston, Tex.		John Jacobsen, Galveston, Tex.		Charles Clark & Co., Galveston, Tex.		Charles Clark & Co., Galveston, Tex.			Bay Towing Co., Galveston, Tex.
Purpose for which used	Shell		General dredge works and transporting oil.		Transporting oil		Construction work			Transporting oil.
Base from which operated	Pier 14		Texas City		Galveston, Tex		Galveston, Tex			Pier 10.
Zone of operation	Galveston Bay and Houston Ship Channel.		Gulf coast and Houston Ship Channel.		Gulf coast		Gulf coast			Gulf coast.
Number available	1	3	3	1	1	1	1	1	1	1
Length (feet)	131.0	130.0	110.0	130.0	165.0	185.0	133.0	121.0	90.0	199.
Beam (feet)	30.0	32.0	28.0	32.0	37.0	42.0	35.7	30.6	26.0	39.7.
Draft, loaded (feet)	6.0	8.0	7.0	7.0	13.0	10.5	8.5	7.0	5.5	15.
Open or covered	Deck barge	Deck barge	Deck barge	Deck barge	Deck barge	Deck barge	Deck barge.	Deck barge.	Deck barge.	Deck barge.
Cargo capacity	300 cubic yards	453 cubic yards	325 cubic yards	6,000 barrels	8,000 barrels	9,000 barrels	400 tons	350 tons	175 tons	9,000 barrels.
Mechanical handling facilities.	None		None		None		None			None.
Tariff	None		None		None		None			None.

	Gulf Coast & Santa Fe Railway Co., Galveston, Tex.	W. L. Jones, Galveston, Tex.	
Purpose for which used	Transferring railroad train	Sand.	
Base from which operated	Pier 9	Galveston.	
Zone of operations	Galveston to Port Bolivar	Galveston Bay, San Jacinto River.	
Number available	1	1	2
Length (feet)	244	100.0	110.0
Beam (feet)	42	24.0	26.0
Draft, loaded (feet)	6.5	6.0	6.0
Open or covered	Deck barge	Deck barge.	Deck barge.
Cargo capacity	1,200 tons	150 cubic yards.	200 cubic yards.
Mechanical handling facilities	None	None.	
Tariff	None	None.	

Floating equipment—Continued.

TUG BOATS.

	Suderman & Young, Galveston, Tex.			Bay Towing Co., Galveston, Tex.		W. D. Haden, Galveston, Tex.			John Jacobsen, Galveston, Tex.		Charles Clark & Co., Galveston, Tex.		
Purpose for which used	Coastwise and harbor towing			Coastwise and harbor towing.		Towing shell barges			Towing dredging equipment.		Transporting oil and jetty construction.		
Base from which operated	Pier 14			Pier 10		Pier 14			Texas City, Tex.		Galveston, Tex.		
Zone of operations	Galveston, Houston, and Texas City			Gulf coast		Galveston Bay and Houston Ship Channel.			Gulf Coast		Gulf Coast.		
Number available	2	1	1	1	1	1	1	1	1	1	1	1	1
Length (feet)	94.2	89.7	66.4	118.6	88.5	61.0	68.6	59.9	50.5	73.3	71.5	96.0	74.0
Beam (feet)	25.0	22.5	18.8	23.0	25.5	13.0	15.6	15.9	15.4	18.2	15.6	18.8	18.6
Draft, loaded (feet)	13.2	8.4	6.4	13.0	14.0	4.0	7.0	8.0	4.5	9.0	8.0	9.0	8.5
Cargo capacity (tons)	123	47	28	206	163	17	17	20	14	50	22	99	37
Indicated horsepower	750	450	250	750	650	150	200	150	110	350	200	350	250
How operated	Steam	Steam	Steam	Steam	Steam	Crude-oil engine.	Crude-oil engine.	Crude-oil engine.	Kerosene engine.	Steam	Steam	Steam	Steam.
Tariff	As per published tariff.			As per published tariff.		None		None	None.				
Names	Messenger, Propeller.	Mariner	William J. Kelly.	Swift-sure.	Miraflores.	Stuart	Clara May.	Zoe	Helen	Elizabeth J.	Dorothy	Seminole	Ima Hog.	Delia.

Floating equipment—Continued.

TUG BOATS—Continued.

	Gulf Coast & Santa Fe Ry. Galveston, Tex.	W. L. Jones, Galveston, Tex.
Purpose for which used	Towing transfer barges	Towing sand barges.
Base from which operated	Pier 9	Galveston, Tex.
Zone of operations	Galveston to Port Bolivar	Galveston Bay and San Jacinto River.
Number available	1	1.
Length (feet)	95	51.
Beam (feet)	22	12.6.
Draft, loaded (feet)	10.3	6.
Cargo capacity (tons)	88	11.
Indicated horsepower	450	100.
How operated	Steam	Crude-oil engine.
Tariff	None	None.
Names	J. W. Terry	Annie Mae.

WRECKING AND SALVAGE FACILITIES.

There are two companies equipped to do wrecking and salvage work at Galveston—Chas. Clarke & Co. and Suderman & Young (Inc.).

Chas. Clarke & Co. is located on Pelican Spit opposite Pier No. 19. This company is equipped with two tugs of 250 and 350 horsepower, 5 lighters of 300 to 1,000 tons capacity each, and 2 floating derricks of 20 and 30 tons capacity. This company is also equipped with 8 and 6 inch wrecking pumps.

Suderman & Young (Inc.), located at Pier No. 14, has a floating derrick on a barge 36 by 96 feet with a capacity of 10 tons and a reach of 75 feet. Other equipment of this company consists of 11 lighters of 200 to 500 tons capacity; 4 tugs, 2 of which are of 800 horsepower each, one 400 horsepower, and the other 150 horsepower.

COMMUNICATIONS.

RAILROADS.

The port of Galveston, Tex., is served by five railroads—the Galveston, Houston & Henderson Railroad, the Gulf, Colorado & Santa Fe Railway, the International-Great Northern Railroad, the Missouri-Kansas-Texas Railroad of Texas, and the Southern Pacific Co., Texas lines. There are also two terminal companies—the Galveston Wharf Co. and the Southern Pacific Terminal Co.—the latter a subsidiary of the Southern Pacific Co.

The Galveston, Houston & Henderson Railroad is a short line connecting Galveston and Houston.

The Gulf, Colorado & Santa Fe Railway comprises the greater part of the Texas lines of the Atchison, Topeka & Santa Fe Railway, operating more than 1,900 miles in the State of Texas. In con-

nection with the parent line and other connections, it serves a large share of the western portion of the country. The main lines of the Santa Fe extend from Chicago to Denver, Galveston, El Paso, Los Angeles, and San Francisco, and numerous branches penetrate into the country bordering the main lines.

The International-Great Northern Railroad is a Texas line, the main line extending from Longview, Tex., to Laredo, Tex., where it connects with the Mexican National Railways. Its principal branches extend from Palestine and Fort Worth to Galveston. It serves the eastern portion of Texas and, through its connections, all the adjacent States and Mexico.

The Missouri-Kansas-Texas Railroad of Texas is a reorganization of the Texas lines of the former Missouri, Kansas & Texas Railway Co. It serves eastern Texas, Oklahoma, Kansas, and Missouri, connecting Galveston with San Antonio, Waco, Dallas, Fort Worth, and Denison, Tex., Muskogee and Tulsa, Okla., Joplin, Sedalia, Kansas City, Hannibal, and St. Louis, Mo., and Topeka, Kans.

The Southern Pacific Co., Texas lines comprise the Texas & New Orleans Railroad, the Galveston, Harrisburg & San Antonio Railway, Houston & Texas Central Railroad, the Houston, East & West Texas Railway, and the Houston & Shreveport Railroad. Although the last named is in Louisiana, it is included with the Texas lines. Through these lines and their connections New Orleans and the entire East is reached, as well as the entire Southwest and the Pacific coast.

The Galveston Wharf Co. and the Southern Pacific Terminal Co. operate terminal properties at the port, the only wharf properties of importance at Galveston. The Galveston Wharf Co. operates 49.34 miles of track and the Southern Pacific Terminal Co., 25.68 miles.

FACILITIES FOR INTERCHANGE BETWEEN RAIL AND WATER.

All lines of vessels serving the port of Galveston, whether in foreign or coastwise service, berth regularly at the terminals of the Galveston Wharf Co. or the Southern Pacific Terminal Co. and through these terminals have direct communication with the railroads serving the port.

SWITCHING.

The several carriers operating at Galveston name a uniform switching charge of $3.15 per car on traffic having interstate movement, applicable between interchange track with connecting lines and points within their respective switching limits.

On intrastate traffic moving between junction with connecting line and loading or unloading point within switching limits a uniform charge is named by all carriers based upon distance as follows: For 1 mile or less, $1.80 per car; over 1 mile but not over 2 miles, $2.25 per car; and over 2 miles, $3.15 per car. The Missouri-Kansas-Texas Railway Co. of Texas names the above distance rates on condition that it receives a line haul. The Galveston, Houston & Henderson Railroad and the Southern Pacific Lines (Galveston, Harrisburg & San Antonio Railway) name a charge of $8 per car on traffic originating at and destined to points within their respective switching limits, and on same traffic moving to a point on another line, within switching limits of such other line, a charge of $7.50 per car is named, and any intermediate switching charges range from $2.25 to $3.75 per car. The Southern Pacific Lines (Galveston, Harrisburg & San Antonio Railway) also name the same charge of $7.50 per car on traffic moving between team, industry, and other tracks and junction with connecting line; when a line haul is involved a charge of $6.50 per car applies.

The Gulf, Colorado & Santa Fe Railway names a charge of $1.80 per car for intraplant switching when in connection with a line haul and on other intraplant movements a charge of $3.15 per car. Between industries on its line and junction with connecting line charges are based upon distance and range from $1.80 to $3.15 per car.

The International-Great Northern Railroad names a charge of $2.25 per car for reswitching after original placement if order is given within 24 hours of placement, and after such time limit a charge of $6.30 per car.

The Galveston Wharf Co. names a switching charge of $4.05 per car on all traffic originating at or destined beyond Galveston by rail for movement between junction with connecting line and industry or other loading or delivery tracks. This company names a charge of $2.25 per car for placing cars for loading or unloading, and for movement to or from track scales a charge of $2 per car. On all other carload traffic for movement between points on its tracks the charge is $8 per car.

The switching charges and rules of carriers at Galveston, Houston and Texas City differ with the origin, the destination, and the routing of the shipment. For a clear understanding of the lawful charges applicable to a given movement, the following tariffs should be consulted:

Galveston, Houston & Henderson Railroad Nos. 1 B and 2 B, I. C. C.'s 123 and 124, respectively.

Gulf, Colorado & Santa Fe Railway Circular No. 2058–D, I. C. C. 9290. International Great Northern Railroad tariff No. 2345–D, I. C. C 812. Missouri-Kansas–Texas Railroad of Texas tariff No. 1901–L, I. C. C. B–1078.

Southern Pacific Lines (G. H. & S. A. Ry.) S. P. Lines tariff No. 84–L, I. C. C. 1330.

Texas Lines Tariff Bureau (A. C. Fonda, agent), No. 21–E–I. C. C. 134, supplements thereto and reissues thereof.

CAR DEMURRAGE.

The charges for car demurrage are identical at nearly all points in the country and are contained in American Railway Association Tariff Bureau tariff No. 4–C, agent, B. T. Jones, I. C. C. No. 1340.

The customary charge is $2 per car per day, beginning at the expiration of 48 hours from the first 7 a. m. after the car is placed for loading or unloading. This is for each of the first four days, after which the charge is $5 per car per day. These charges apply on domestic freight which does not move to or from the port by water.

The charges on export and import freight and on domestic freight moving by water in coastwise vessels to or from the port are shown under "Storage."

WHARFAGE.

Wharfage charges are carried in Texas Lines tariff No. 21–E, agent A. C. Fonda's I. C. C. No. 134, and Southern Pacific Terminal Co tariff No. 1–K, I. C. C. No. 15.

The charges on inbound and outbound traffic in effect at Galveston Bay ports are shown in the following tables of selected commodities:

Wharfage charges on inbound traffic.

[In cents per 100 pounds, except as otherwise shown. In effect Oct. 1, 1923.]

Commodity.	Column 1. Wharfage charges at— Galveston Wharf Co. at Galveston; Texas City.	Column 2. Wharfage charges at— Southern Pacific Terminal Co. at Galveston; Houston.	Column 3. Absorptions at— Southern Pacific Terminal Co. at Galveston; Houston.	Column 4. Absorptions at— Galveston Wharf Co. at Galveston; Texas City.
All articles not otherwise provided for	1¼	1¼	1¼	1¼
Automobiles, set up	6½	5	5	6½
Automobiles, knocked down and crated	4	3	3	4
Bananas (to Texas points) (will not apply at Houston), per bunch	¾	½	.....	.....
Bananas (to other points) (will not apply at Houston), per bunch	¾	½	½	¾
Bananas (to Texas points) (applies only at Houston), per bunch	.....	¾	.....	.....
Bananas (to other points) (applies only at Houston), per bunch	.....	¾	¾	.....
Brick, fire	1¾	1¼	1¼	1¼
Brick, common and paving, per 1,000 brick	37½	30	30	37½
Coal	1½	1	1	1½
Coconuts	2	1½	1½	2

Wharfage charges on inbound traffic—Continued.

Commodity.	Column 1. Wharfage charges at— Galveston Wharf Co. at Galveston; Texas City.	Column 2. Wharfage charges at— Southern Pacific Terminal Co. at Galveston; Houston.	Column 3. Absorptions at— Southern Pacific Terminal Co. at Galveston; Houston.	Column 4. Absorptions at— Galveston Wharf Co. at Galveston; Texas City.
Cotton and cotton linters, imported from foreign countries (applies only at Texas City)	1	.....	.....	1
Cotton and cotton linters, except when imported from foreign countries (applies only at Texas City)	½	.....	.....	½
Cotton (will not apply at Houston and Texas City)	2	1½	1½	1½
Cotton (applies only at Houston)	1½	1	1	1½
Cottonseed oil in barrels or drums (applies only at Texas City)	¾	.....	.....	¾
Livestock, viz:				
Calves, goats, sheep and swine, per head	12½	10	.....	.....
Colts and donkeys, per head	25	20	.....	.....
Horses, mules, and cattle, per head	32	25	.....	.....
Logs, except walnut and woods of value (applies only on wharves of Southern Pacific Terminal Co. at Galveston), per car	.....	$2.00	$2.00	.....
Logs, (applies only at Texas City)	1¼	.....	.....	1¼
Lumber and timbers, pine, per 1,000 feet	37½	30	30	37½
Oil, crude and fuel, in bulk, pumped through pipe line from shipside to storage tanks (will not apply at Galveston for account of Southern Pacific Terminal Co. or Texas City), per 50 gallons	2	2	2	.....
Oil, crude and fuel, in bulk, pumped through pipe line from shipside to storage tanks, will also apply where oil is handled from steamers through pipe lines on the wharf into barges or tanks (applies only for account of Southern Pacific Terminal Co. at Galveston), per 50 gallons	.....	2	2	.....
Oil, crude or fuel, in bulk, 42 gallons to be considered a barrel, pumped from ship through pipe lines into storage tanks (applies only at Texas City), per barrel	⅓	.....	.....	⅓
Oils, petroleum, in barrels or drums (applies only at Texas City)	¾	.....	.....	¾
Oil, fish or seal, in barrels or drums (applies only at Texas City)	¾	.....	.....	¾
Oil, petroleum, in boxes or cases (applies only at Texas City)	1	.....	.....	1
Rice, rough	1½	1	1	1½
Sand and shell, per cubic yard	6½	5	5	6½
Sulphur, (brimstone), in sacks or in bulk (applies only at Texas City), per ton of 2,240 pounds	20	.....	.....	20
Sulphur, in bulk, carloads (will not apply at Houston and Texas City), per ton of 2,240 pounds	20	20	20	20
Sulphur, in bulk, carloads (applies only at Houston), per ton of 2,240 pounds	.....	10	10	.....
Sulphur, in boxes, barrels or sacks, per ton of 2,240 pounds (applies only at Galveston on wharves of Galveston Wharf Co.)	20	.....	.....	20
Sugar, crude, in sacks, barrels or tierces (will not apply at Galveston on wharves of Galveston Wharf Co. and at Texas City)	1½	1	1	1½
Sugar, crude, in sacks, barrels or tierces (applies only at Texas City)	1	.....	.....	1
Sugar, crude, in sacks, barrels or tierces (applies only at Galveston on wharves of Galveston Wharf Co.)	1	.....	.....	1
Wagons, light delivery, set up	6½	5	5	6½
Wagons, light delivery, knocked down and crated	4	3	3	4
Wagons, farm, set up	4	3	3	4
Wagons, farm, knocked down	2½	2	2	2½
Wool, in bales or sacks	3	2½	2½	3

Wharfage charges on outbound traffic.

Commodity.	Column 1. Wharfage charges at— Galveston Wharf Co. at Galveston; Texas City.	Column 2. Wharfage charges at— Southern Pacific Terminal Co. at Galveston; Houston.	Column 3. Absorptions at— Southern Pacific Terminal Co. at Galveston; Houston.	Column 4. Absorptions at— Galveston Wharf Co. at Galveston; Texas City.
All articles not otherwise provided for	2½	2½	2½	2½
Automobiles, set up	6½	5	5	6½
Automobiles, knocked down and crated	4	3	3	4
Beans, in bags or barrels	1¾	1¼	1¼	1¾
Canned goods, viz: Fish, fruit, meats, soups, tamales, olives, vegetables, catsup, fruit butter, jams and jellies, in tin, glass or earthenware, boxed; and fruit juices in barrels, or in tin, glass or earthenware, boxed	1¾	1¼	1¼	1¾
Cement, in sacks or barrels	1¾	1¼	1¼	1¾
Coke, petroleum, in bulk (applies only at Houston)	.....	1	1	.....
Copper matte	1¾	1¼	1¼	1¾
Coal	1½	1	None.	None.
Copra cake and meal, in sacks	1½	1	1	1½
Copra oil, in barrels or in bulk (applies only at Texas City)	¾	.....	.....	¾
Copra oil, in barrels or in bulk (will not apply at Texas City)	1¾	1¼	1¼	1¾
Cotton and cotton linters, in bales and sacks (applies at Galveston)	2	2	2	2
Cotton and cotton linters, in bales and sacks (applies at Texas City)	2	1½	1½	2
Cotton and cotton linters, in bales or sacks (applies only at Houston)	.....	1	1	.....
Cotton bagging, product of cotton factories	2½	2	2	2½
Cotton piece goods	2½	2	2	2½
Cotton seed and cotton seed hulls, in sacks	1¾	1¼	1¼	1¾
Cottonseed cake and meal (applies only at Galveston on wharves of Galveston Wharf Co.)	1	.....	.....	1
Cottonseed oil, in barrels or in bulk (will not apply at Texas City)	1¾	1¼	1¼	1¾
Cottonseed oil, in barrels or in bulk (applies only at Texas City)	¾	.....	.....	¾
Fertilizer, in sacks	1¾	1¼	1¼	1¾
Fuller's earth, in sacks	1¾	1¼	1¼	1¾
Grain, viz:				
Dried and brewer's, in sacks	1¾	1¼	1¼	1¾
Corn, wheat, rye, oats, barley, and kafir corn, through elevator (see Galveston Wharf Co. local tariff No. 9, I. C. C. No. 16 or reissues).				
Corn, wheat, rye, oats, barley, and kafir corn, in sacks or barrels	1½	1	1	1½
Grain products, viz:				
Wheat, buckwheat and rye flour, corn meal, corn, barley, oats or rye chops, bran screenings, middlings, shorts, mill feed, mill stuff and prepared stock foods, in sacks or barrels: At Galveston, Houston, and Texas City	1½	1	1	1½
Grass seeds, all kinds, in sacks or barrels	2	1½	1½	2
Guayule, in sacks or barrels	1¾	1¼	1¼	1¾
Hay, in bales	2	1½	1½	2
Iron or steel articles:				
Billets, blooms, ingots, wire rods in coils (unfinished, not drawn through a die), wheels and axles (old car), bars, chain iron in coils (not drawn through a die) and rough castings:				
At Galveston on wharves of Galveston Wharf Co.	1¾	.....	.....	1¾
At Galveston on wharves of Southern Pacific Terminal Co.	.....	1	1	.....
At Houston	.....	1¼	1¼	.....
At Texas City	1¾	.....	.....	1¾
Iron, pig:				
At Galveston on wharves of Galveston Wharf Co.	1¾	.....	.....	1¾
At Galveston on wharves of Southern Pacific Terminal Co.	.....	1	1	.....
At Houston	.....	1¼	1¼	.....
At Texas City	1¾	.....	.....	1¾
Scrap iron	1¾	1¼	None.	None.
Ixtle, in bales	1¾	1¼	1¼	1¾
Junk	1¾	1¼	1¼	1¾
Linseed meal and cake, in sacks	1½	1	1	1½

Wharfage charges on outbound traffic—Continued.

Commodity.	Column 1. Wharfage charges at— Galveston Wharf Co. at Galveston; Texas City.	Column 2. Wharfage charges at— Southern Pacific Terminal Co. at Galveston; Houston.	Column 3. Absorptions at— Southern Pacific Terminal Co. at Galveston; Houston.	Column 4. Absorptions at— Galveston Wharf Co. at Galveston; Texas City.
Livestock, viz:				
Calves, goats, sheep, and hogs, per head	12½	10	10	12½
Colts and donkeys, per head	25	20	20	25
Horses, mules, and cattle, per head	32	25	25	32
Logs (applies only at Galveston on wharves of Galveston Wharf Co. and at Houston and Texas City)	1¾	1¼	[1] None.	[1] None.
Logs (except walnut and woods of value) (applies only on the wharves of Southern Pacic Terminal Co. at Galveston), per car	.....	$2.00	[1] None.	.....
Logs, walnut, and woods of value	1¾	1¼	[1] None.	[1] None.
Lumber and timbers, hardwood	1¾	1½	[1] None.	[1] None.
Lumber and timbers, pine, for export (applies only at Galveston on wharves of Galveston Wharf Co., and at Houston and Texas City), per 1,000 feet	37½	30	[1] None.	[1] None.
Lumber and timbers, pine, for coastwise movement (applies only at Galveston on wharves of Galveston Wharf Co. and at Texas City) per 1,000 feet	19	.....	.....	None.
Lumber and timbers, pine (applies only on wharves of the Southern Pacific Terminal Co. at Galveston), per car	.....	$2.00	[1] None.	.....
Oil, in bulk, 42 gallons to be considered a barrel, pumped from tank cars or storage tanks through pipe lines into vessel (applies only at Texas City), per barrel	⅓	.....	.....	⅓
Oil, crude, in bulk (will not apply at Texas City)	1	1	1	1
Oil, crude, in barrels (will not apply at Texas City)	2	1½	1½	2
Oil, petroleum, in barrels or drums (applies only at Texas City)	¾	.....	.....	¾
Oil, petroleum, in boxes (applies only at Texas City)	1	.....	.....	1
Oil, refined petroleum, in bulk (will not apply at Texas City)	2	1½	1½	2
Oil, refined, petroleum, in packages (will not apply at Texas City)	2½	2	2	2½
Oil, refined, petroleum or lubricating, in barrels (applies only at Houston)	.....	1½	1½	.....
Oil, fish or seal, in barrels or drums (applies only at Texas City)	¾	.....	.....	¾
Ore and bullion, viz: Copper, iron, lead, manganese, magnesite, spelter, and zinc, at Galveston, Houston, and Texas City	1¾	1¼	1¼	1¾
Rice or rice products, viz: Bran, feed, flakes, flour, hulls and polish, in sacks, barrels or cases	1½	1	1	1½
Sisal, in bales	1¾	1¼	1¼	1¾
Sugar, in barrels or sacks	1¾	1¼	1¼	1¾
Sugar, in boxes	2½	2	2	2½
Sulphur, in boxes, barrels or sacks (applies only at Houston)	.....	1¼	1¼	.....
Sulphur, in boxes, barrels, or sacks (will not apply at Houston and Texas City), per ton of 2,240 pounds	20	20	20	20
Sulphur, in boxes or barrels (applies only at Texas City), per ton of 2,240 pounds	20	.....	.....	20
Sulphur (brimstone), in sacks or in bulk (applies only at Texas City), per ton of 2,240 pounds	20	.....	.....	20
Sulphur, in bulk, carloads (will not apply at Houston and Texas City), per ton of 2,240 pounds	20	20	20	20
Sulphur, in bulk, carloads (applies only at Houston), per ton of 2,240 pounds	.....	10	10	.....
Vinegar, in barrels	2	1½	1½	2
Wax, paraffine	1¾	1¼	1¼	1¾

[1] Where reference is made to this footnote wharfage charges will be absorbed only as follows: On export traffic originating at points in States other than Texas and Louisiana, wharfage charges shown in columns 1 and 2 will be absorbed.

Application of Wharfage Charges Shown on Inbound and Outbound Traffic.

The wharfage charges shown above are assessed by municipal dock, municipal wharf, and terminal companies at Galveston, Houston (see note A following explanation of column 2), and Texas City, Tex.,

on all freight passing over the piers or wharves received by vessels and delivered to rail lines or received from rail lines and delivered to vessels.

EXPLANATION.

Column 1.—Contains wharfage charges of the—

Galveston Wharf Co. at Galveston, Tex., and the wharfage charges which will be assessed by the—

Texas City Terminal Railway Co. at Texas City, Tex., which will be added to the rail rates, except as otherwise provided.

Column 2.—Contains wharfage charges of the—

Southern Pacific Terminal Co. at Galveston, Tex., and navigation and canal commission at Houston, Tex. (see note A), which will be added to the rail rates, except as otherwise provided.

NOTE A.—Charges of navigation and canal commission at Houston will not apply on coastwise traffic as described below.

Column 3.—Applicable only on traffic on which absorptions are authorized.

Contains the amounts which will be absorbed on account of wharfage charges of Southern Pacific Terminal Co. at Galveston, and at Houston, Tex., where such absorption is provided for. On traffic on which such absorption is authorized, the amounts shown in column 2 in excess of figures shown in column 3 will be added to the rail rates.

Column 4.—Applicable only on traffic on which absorptions are authorized.

Contains the amounts which will be absorbed on account of wharfage charges of Galveston Wharf Co., Galveston, Tex., and at Texas City, Tex., where such absorption is provided for. On traffic on which such absorptions are authorized, the amounts shown in column 1 in excess of figures shown in column 4 will be added to the rail rates.

WHARFAGE CHARGES AT HOUSTON, TEX., APPLYING ONLY ON COASTWISE TRAFFIC INBOUND OR OUTBOUND.

The navigation and canal commission at Houston, Tex., assesses on coastwise traffic between Atlantic seaboard and Gulf points only and Houston, Tex., also all local business using light draft channel, handled to or from the public docks, the following wharfage charges:

All classes and commodities (except sand and shell)	12 cents per ton of 2,000 pounds.
Sand and shell, on light-draft channel	2 cents per cubic yard.
Sand and shell, on main channel and at turning basin	3 cents per cubic yard.

These wharfage charges will not be absorbed by the lines which are parties to the tariff.

LOADING AND UNLOADING CHARGES.

The charges for unloading freight from or loading freight into cars are in general the same at all Texas ports, including Beaumont, Texas City, Houston, Orange, and Galveston. The charges at Galveston apply at the terminals of the Galveston Wharf Co. and the Southern Pacific Terminal Co.

The following is a list of selected commodities showing the loading and unloading charges in effect at Galveston Bay ports:

Loading and unloading charges.

[In cents per 100 pounds, except as otherwise provided. In effect Oct. 1, 1923.]

Commodities, carloads (except as shown).	Column 1. Loading and unloading charges at— Galveston Wharf Co. at Galveston; Southern Pacific Terminal Co. at Galveston; Houston and Texas City.	Column 2. Absorptions at— Galveston, Houston, and Texas City.
Asphalt and asphaltum, in dry or solid form, in sacks or open barrels	2	2
Asphalt and asphaltum, in tight barrels	1½	1½
Automobiles and automobile trucks, set up, not crated, any quantity (will not apply at Galveston on wharves of Galveston Wharf Co.):		
Unloading	4	4
Loading	6½	6½
Automobiles and automobile trucks, set up (applies only at Galveston on wharves of Galveston Wharf Co.):		
Loading, any quantity, crated	6½	6½
Unloading—		
Less than carloads, crated	4	4
Carloads, not crated	4	4
Bananas, per car	[1] $12	[1] $12
Brick, all kinds, except fire brick	2¼	½
Brick, fire:		
Loading	2¼	½
Unloading (from Texas points only)	2¼	½
Unloading (from points other than Texas)	2¼	2¼
Canned goods, in cases	2	2
Coffee, in boxes, barrels, or bags	2	2
Copper, in pigs or bars	1½	1½
Copper ore and bullion, in bars, pigs, or plates, per ton of 2,000 pounds	30	22
Copper matte, in sacks, per ton of 2,000 pounds	30	22
Cottonseed cake, in bulk (applies at Galveston when handled at Pier B, Southern Pacific Terminal Co., and on Galveston Wharf Co.'s piers, also at Houston when handled on municipal docks, and at Texas City), per ton of 2,000 pounds	45	45
Cottonseed meal and cake, in sacks:		
Loading, per ton of 2,000 pounds	30	30
Unloading, per ton of 2,000 pounds	30	30
Cotton, transferring, loading and unloading, any quantity (will not apply at Galveston on wharves of Galveston Wharf Co.), per bale	7½	7½
Cotton, transferring, loading and unloading, any quantity (applies only at Galveston on wharves of Galveston Wharf Co.), per bale	10	7½
Cotton, all wharf piers, any quantity (applies only at Galveston on piers of Galveston Wharf Co.), per bale	5½	4
Cotton, all wharf piers, any quantity (will not apply at Galveston on wharves of Galveston Wharf Co.), per bale	4	4
Cotton, round bales, all piers, piled not to exceed 3 tiers high, any quantity (will not apply at Galveston on wharves of Galveston Wharf Co.), per bale	2½	2½
Cotton, round bales, all piers, piled not to exceed 3 tiers high, any quantity (applies only at Galveston on piers of Galveston Wharf Co.), per bale	3½	2½
Fertilizer and articles taking fertilizer rates, in sacks	2¼	1¼
Flour, in sacks or barrels, loading, per ton of 2,000 pounds	30	20
Flour, in sacks or barrels, unloading:		
From Texas points, per ton of 2,000 pounds	30	22½
From other points, per ton of 2,000 pounds	30	30
Grain, in sacks (viz, corn, rye, oats, wheat, barley, Kafir corn):		
Loading	1½	½
Unloading (from Texas points), per ton of 2,000 pounds	30	[2] 22½
Unloading (from other points), per ton of 2,000 pounds	30	30
Grain, in bulk, at sacking elevator for sacking, per ton of 2,000 pounds	15½	15½

[1] Rates named include service of loading, checking, sealing, and carding cars, but do not include expense of equipping cars with false bottoms, special appliances, or material. Cars must be fully equipped before delivery to dock, wharf, and terminal companies.

[2] For absorption of grain sacked on wharves, see item No. 1695, or reissues.

Loading and unloading charges—Continued.

Commodities, carloads (except as shown)	Column 1. Loading and unloading charges at— Galveston Wharf Co. at Galveston; Southern Pacific Terminal Co. at Galveston; Houston and Texas City.	Column 2. Absorptions at— Galveston, Houston, and Texas City.
Grain delivered to elevators	.....	None.
Grain, in bulk (loading charges only), per ton of 2,000 pounds	45	3
Grain products, in sacks (except flour) loading charges only	2¼	½
Hay, in bales:		
Loading	2	2
Unloading (from Texas points)	2	½
Unloading (from other points)	2	2
Hides, green or dry, in bundles or bales	1¾	1¾
Iron and steel articles, viz: Not otherwise specified, any quantity:		
18 feet 6 inches and less in length	2½	2
36 feet 6 inches and over 18 feet 6 inches in length	2¾	2
Over 36 feet 6 inches in length	3	2
Billets, blooms and ingots, chain iron and wire rods in coils (unfinished, not drawn through a die), wheels and axles (old car), bars, unloading charge	1¾	1¾
Pig iron	1½	1½
Pipe and fittings, in coal cars	2	2
Pipe and fittings, in box cars	2½	2
Ixtle, in bales, per bale	3	3
Jute, in bales	1¾	1¾
Lead, pig or bars:		
Loading, per ton of 2,000 pounds	30	22
Unloading (from Texas points), per ton of 2,000 pounds	30	22
Unloading (from other points)	30	30
Livestock:		
Loading	2¼	None.
Unloading	2¼	2¼
Logs, all kinds, from flat cars, per car	$7.50	[3] ½ c. per 100 lbs.
Logs, all kinds, from coal cars, per car	$9.00	
Lumber, from flat cars, checking 75 cents per car additional (will not apply at Galveston on wharves of Galveston Wharf Co.)	1½	[3] ½
Lumber, from other cars, checking 75 cents per car additional (will not apply at Galveston on wharves of Galveston Wharf Co.)	1¼	[3] ½
Lumber, from flat cars, checking $1 per car additional (applies only at Galveston on wharves of Galveston Wharf Co.)	1½	[3] ½
Lumber, from other cars, checking $1 per car additional (applies only at Galveston on wharves of Galveston Wharf Co.)	1¾	[3] ½
Lumber, all kinds (loading charges only)	2¼	½
Oil, all kinds, in barrels (also in drums at Texas City)	1¾	1¾
Oil, all kinds, in cases	2	2
Packing house products, in cases	2	2
Rice, in barrels or sacks (unloading)	1½	1½
Rice, in cases:		
Loading, per ton of 2,000 pounds	40	22½
Unloading, per ton of 2,000 pounds	40	40
Rice, brewers' rice bran and rice polish (loading charges only)	45	22½
Rice hulls, in sacks	2	½
Rosin, in barrels	1½	1½
Sisal, in bales	2	2
Sugar, in sacks or barrels, loading	2	2
Sugar, in sacks or barrels, unloading	1¾	1¾
Sulphur, in barrels	2	2
Timbers, 6 by 8 inches or over, or other dimensions equaling 6 by 8 inches, from open cars	2	[3] ½
Vinegar, in barrels	1½	1½
Wool, grease, in sacks	2	2
Wool, all kinds, in bales	1½	1½
Wool, scoured, in sacks, per sack	4	4

[3] Where reference is made to this footnote by [3] loading and unloading charges will be absorbed on import traffic to the extent shown in column 2. On export traffic, unloading charges will be absorbed as follows: (*a*) On export traffic originating at points in Texas and Louisiana, ½ cent per 100 pounds will be absorbed. (*b*) On export traffic originating at points in States other than Texas and Louisiana the entire unloading charge shown in column 1 will be absorbed.

APPLICATION OF LOADING AND UNLOADING CHARGES SHOWN IN THE ABOVE TABLE.

The charges shown apply for the services of unloading freight from, or loading it into, cars at wharves or piers.

When two or more articles having different loading or unloading rates are handled in mixed carloads, the charge on the total weight of the mixed shipment is the carload rate applicable to the article taking the highest carload rating except where there is a minimum carload or more of one commodity in the shipment, in which event charges are assessed on basis of the rate and minimum weight applicable to the carload commodity plus charges on other commodities at actual weight and less than carload rates.

These charges will be absorbed by the Galveston Bay and Houston lines only as provided above in column 2.

EXPLANATION.

Column 1.—Contains loading and unloading charges which are assessed by the—

Galveston Wharf Co., at Galveston, for handling freight over their respective wharves. These charges will be added to the rail rates except as otherwise provided in column 2.

Also contains—

(*a*) Loading and unloading charges which will be assessed by the Galveston Bay lines for handling freight over the wharves of the Southern Pacific Terminal Co. at Galveston, Tex. These charges will be added to the rail rates except as otherwise provided in column 2.

(*b*) Loading and unloading charges which will be assessed by the Texas City Terminal Railway Co. for handling freight over their wharves at Texas City, Tex. These charges will be added to the rail rates except as otherwise provided in column 2.

(*c*) Loading and unloading charges which will be assessed by the Houston lines for handling freight over the municipal wharves or piers at Houston, Tex. These charges will be added to the rail rates except as otherwise provided in column 2, and only when the service of loading or unloading is performed by the rail carriers or their authorized agents or contractors. The loading charges at Houston, Tex., shown in column No. 1, will be absorbed by the Houston lines on inbound coastwise traffic covered by joint through rate, or the alternative basis therefor, as provided in Agent W. J. Sedgman's I. C. C. No. 121, including item No. 570 thereof.

Column 2.—Contains the amounts which will be absorbed, on account of loading and unloading, on export and import traffic only, by the Galveston Bay or Houston lines out of the charges shown in column 1, which are assessed at Galveston, Texas City, and Houston, subject also to minimum rate provisions as follows:

Minimum rate provisions: Loading and unloading charges at Galveston and Texas City, on carload traffic destined to or coming from Houston or intermediate points, also loading or unloading charges at Houston on carload traffic destined to or coming from Galveston, Texas City, or intermediate points, shall not be absorbed when the rates are 9 cents per 100

pounds or less, and only so much of said expense shall be absorbed out of the higher rates as will leave the net revenue of the Galveston Bay lines 9 cents per 100 pounds.

On traffic destined to or coming from points in Texas other than that covered by the above loading and unloading charges shall not be absorbed when rates are 11½ cents per 100 pounds or less, and only so much of said expense shall be sbsorbed out of the higher rates as will leave the net revenue for rail carrier 11½ cents per 100 pounds. Any loading or unloading charges in excess of the amounts absorbed will be in addition to the rail rates.

Certain restrictions in the application of the service covered by the loading and unloading charges by the Southern Pacific Terminal Co. at Galveston are enumerated in Texas lines tariff No. 21–E.

STORAGE.

Export and Outbound Coastwise Traffic.

Storage rules and rates on all freight in carloads for shipside delivery are contained in Texas lines tariff No. 25–F, Agent Fonda's I. C. C. No. 104. Some of the more important rules, rates, and certain exceptions thereto are given in the following statement:

Ten days free time is allowed on export cotton moving on through bill of lading beginning with the first—7 a. m. after the cargo receiving day, as specified in contract for ocean carriage, and four days free time is allowed on other traffic with certain exceptions beginning with the second—6 a. m. after notice of arrival is issued. Additional free time is allowed if weather conditions prevent unloading, if delayed by United States customs officers, or if cars are detained on account of fire, flood, strikes, lockouts, stoppage of railroad labor, a general strike of dock labor, or railroad disability or neglect. Embargoes placed by terminal or wharf companies or disability of such companies to receive cars promptly is not considered as railroad disability or neglect, and no additional free time is allowed under such circumstances. After the expiration of free time, the following storage charges are assessed:

	Cents.
Cotton and cotton linters per one square or two round bales:	
2 days or less	7
Over 2 days to 6 days	13½
Over 6 days to 11 days	27
Over 11 days to 16 days	34
Over 16 days to 26 days	40½
After 26 days, per day	1½
Other freight per 100 pounds:	
10 days or less	7
Over 10 days to 20 days	10
Over 20 days to 30 days	13½
Over 30 days to 40 days	17
Over 40 days to 50 days	20½
Each additional 10 days or fraction	2½

Carriers reserve the right to unload and store all freight in order to release equipment, but this does not affect the free time allowance. If the freight is not billed for export but is so intended, the carriers must be notified within 48 hours after arrival. When export or coastwise freight is reconsigned for local delivery or for movement from the port by rail, it is subject to regular demurrage charges for domestic freight as shown in American Railway Association tariff No. 4–C, Agent Jones, I. C. C. No. 1340. On export and outbound coastwise traffic originating within the switching limits of the port demurrage charges applying on domestic freight are assessed. The following are among the exceptions to the rules and rates given above:

Cottonseed cake and meal for delivery direct from cars to piers for export is allowed seven days' free time, and the charge after expiration of free time is $1 per car per day or fraction thereof.

Export grain for delivery to elevators is allowed 10 days' free time, after the expiration of which the charge is one twenty-fifth of 1 cent per bushel per day.

Other exceptions will be found in the Texas lines tariff above referred to.

Import and Inbound Coastwise Traffic.

Storage is assessed on all less-than-carload freight stored in railroad warehouses or on railroad platforms for more than 72 hours from the first 7 a. m., exclusive of Sundays and legal holidays. The following charges are in effect:

Storage charges on less than carload freight.

Rate per 100 pounds:	Cents.
First 10 days or less	5½
Over 10 days to 20 days	9
Over 20 days to 30 days	12
Over 30 days to 40 days	15½
Over 40 days to 50 days	18½
Each additional 10 days or fraction	2½

Less than 100 pounds takes the 100-pound rate.

The minimum charge for any one shipment is 12 cents.

SHED HIRE CHARGES OF THE GALVESTON WHARF CO.

The tariff No. 16 of the Galveston Wharf Co., I. C. C. No. 24, gives charges on cotton and cottonseed cake and meal placed in shedded piers or wharves while awaiting shipment. These charges are as follows:

	Square bales (cents).	Round bales (cents).
Cotton:		
First 15 days, free.		
Next 5 days or fraction, per bale	1	½
Next 5 days or fraction, per bale	2	1
Next 5 days or fraction, per bale	3	1½
Next 10 days or fraction, per bale	4	2
Next 20 days or fraction, per bale	6	3
Each succeeding 10 days or fraction, per bale	10	5
Cottonseed cake and meal:		
First 15 days, free.		
Next 7 days or fraction, 10 cents per net ton.		
Next 7 days or fraction, 10 cents per net ton.		
Each succeeding 7 days or fraction, 5 cents per net ton.		

The Galveston Wharf Co.'s tariff contains the following provision:

This company does not engage in the business of storage or warehousing of property on its wharves or piers and will not be responsible for loss or damage to property remaining thereon. All property landed or received on any of its wharves or piers is thereafter at the risk of the owner, and this company reserves the right to remove any or all such property to any part of the wharves at its convenience at the risk and expense of the owner, or it may be removed and stored elsewhere without notice, and at the risk and expense of the owner, and this company will retain legal possession of all property so removed until all charges are paid.

GRAIN ELEVATION, DRYING, STORAGE, ETC.

The Galveston Wharf Co. in its tariff No. 17, I. C. C. No. 26, provides the following charges, rules, and regulations for handling grain at its elevators. The Southern Pacific elevator is operated by private interests, and hence no charges applying at this elevator are contained in current tariffs filed with the Interstate Commerce Commission.

All grain must be inspected and graded in accord with the rules of the Galveston Cotton Exchange and the Board of Trade. All grain is placed in elevators at owner's risk of depreciation from heating, from the elements, or from other causes.

Elevation.—The charge for elevating wheat, corn, rye, barley, oats, milo, maize, cane seed, and Kaffir corn into elevators A and B for export, is 1¼ cents per bushel. For elevating the above grains, except cane seed, into same elevators for local and domestic delivery, the charge is 1¼ cents per bushel. Elevation rates include fire and explosion insurance, unloading grain into elevators from cars, and delivery to vessels or reloading into cars.

Cleaning, clipping, and fanning.—The charge for this service is 1 cent per bushel, all loss in weight to be borne by owners of the grain.

Drying.—The following rates are assessed for drying grain:

	Cents per bushel.
Nos. 1, 2, 3, 4, or 5 grain	1½
No. 6 grain	2
Sample grain, 5 per cent or less moisture extracted	2
Sample grain, each additional 1 per cent extracted	½
Salvage grain, 5 per cent or less, moisture extracted	4
Salvage grain, each additional 1 per cent extracted	½

Rejected grain considered as No. 5.
No grade grain considered as sample grain.
Any loss in weight is charged against the owners of the grain.

Separating.—The charge for separating mixtures of two kinds of grain is 1 cent per bushel, any loss in weight to be borne by owners.

Storage.—The following shows the free time allowance and storage charges assessed after expiration of such time:

	Free time allowed.	Charge after free time.
Export grain	10 days.	$\frac{1}{25}$c. per bushel per day.
Coastwise grain	10 days.	⅛c. per bushel each 5 days or fraction.
Import grain	10 days.	1 c. per bushel first 10 days.
Local or domestic grain	5 days.	¾ c. per bushel each succeeding 10 days.

The charge for storage in separate bins to preserve identity is one-fourth of 1 cent per bushel for each 30 days or fraction in addition to all other charges.

Miscellaneous.—The following miscellaneous charges are in effect:

	Rate per bushel.
Emptying sacked grain and baling sacks	¾c.
Sacking grain, owner to furnish sacks and bear all shrinkage	1c.
Loading bulk or sacked grain into cars for local or domestic delivery.	$3 per car.
Furnishing grain doors and coopering cars	$2.50 per car.
Coopering cars, grain doors furnished by railroad or shippers	50c. per car

CARTAGE OR DRAYAGE.

Cartage or drayage charges are usually included in through rates. When no joint through rates are in effect the rate from Gulf, Colorado & Santa Fe Railway depot to connecting line is 2½ cents per 100 pounds; minimum charge, 50 cents. Heavy and bulky articles are drayed only by special agreement. From the International-Great Northern Railroad to connecting rail and boat lines, not using the same station, the rate is 25 cents per package, with a minimum charge of 50 cents. The other rail carriers do not quote drayage rates.

ABSORPTIONS.

Import traffic.—On all freight received at Galveston by vessels direct from foreign ports, or by coastwise vessels in bond from foreign countries and forwarded inland by rail, the following terminal charges are absorbed:

Switching charges of connecting line not to exceed $3.15 per car. Carriers may at their option dray the freight between the piers and their depots in lieu of switching.

Wharfage charges on import traffic except on livestock, freight destined to points in Mexico not moving on joint through rates, and freight destined to points in Texas. The absorptions applying on important commodities are shown on page 74.

Loading charges on import traffic are generally absorbed in full, although there are some exceptions. The absorptions applying on the important commodities moving through the Galveston Bay ports are shown on page 79. Absorption of loading charges at Galveston is restricted to so much thereof as will leave net revenue to the rail carriers of 9 cents per hundred pounds on traffic to Houston and intermediate points, and 11½ cents per hundred pounds when to other points.

Coastwise inbound traffic.—Switching charges not to exceed $3.15 per car are absorbed by rail carriers on traffic arriving in coastwise vessels from ports in the United States other than Texas ports and forwarded inland.

Export traffic.—On all freight arriving at Galveston by rail and delivered to vessels destined to foreign countries, the following terminal charges are absorbed:

Switching charges of connecting line not to exceed $3.15 per car on all export freight except on grain delivered to elevators. On the latter the absorption is $2.70 per car. Carriers may at their option dray freight between their depots and piers in lieu of switching.

Wharfage charges on export traffic are absorbed except on freight originating in Texas, scrap iron, grain unloaded into elevators for delivery to vessels, lumber and lumber articles from points in Louisiana, freight from Mexico not moving on joint through rates, coal and freight originating at points outside Texas when rate is based on combination over some Texas point. The absorptions of wharfage charges in effect at the Galveston Bay ports are shown on page 76.

On bulk grain for export not handled through elevators, which is delivered to sacking plants on wharves for sacking before delivery to vessels, wharfage is absorbed and, in addition, 15½ cents per ton of the cost of unloading.

Unloading charges are absorbed on export traffic, the entire charge being absorbed on nearly all commodities. The table on page 76 shows the absorptions on the principal commodities exported through the Galveston Bay ports. On certain commodities only part of the unloading charge is absorbed when the shipment is from points in the State of Texas. On traffic from Houston and intermediate points only so much of the unloading charge is absorbed as will leave the net revenue to the rail carrier 9 cents per 100 pounds. When from other points, only so much will be absorbed as will leave net revenue of 11½ cents per 100 pounds. No unloading charge is absorbed on coal.

Coastwise outbound traffic.—Switching charges not to exceed $3.15 per car are absorbed on freight arriving by rail and delivered to vessels destined to other than Texas ports.

In addition to the above absorptions the rail carriers publish certain specific absorptions, some of the more important being:

On intrastate carload traffic and interstate competitive traffic, the carrier having the line haul absorbs the switching charge of connecting line.

On grain, grain products, hay, and seeds, given transit privilege, switching charges of a nonline haul carrier to and from transit house are absorbed by the carriers having the inbound and outbound haul, respectively.

Switching charges of connecting line on cotton and cotton linters originating at all points are absorbed by Gulf, Colorado & Santa Fe Railway and Missouri-Kansas-Texas Railroad of Texas.

Transfer or drayage charge between rail carriers is usually absorbed by delivering line on traffic moving under through rates.

Detailed information relative to absorptions is contained in the following tariffs:

Santa Fe Circular No. 2058–D, I. C. C. No. 9290.
I. G. N. Tariff No. 2353–K, I. C. C. No. 851.
M.-K.-T. R. R. of Texas tariff No. 1901–L, I. C. C. No. B–1078.
S. P. lines tariff No. 84–L, I. C. C. No. 1330.
Texas lines tariff No. 21 E. Fonda, I. C. C. No. 134.

TRANSIT PRIVILEGES.

The carriers serving the Galveston Bay ports permit the diversion or reconsignment of freight in carloads moving via their lines, under conditions governed by the tariffs. No charge is made in the following cases: If order is received at initial point before car leaves and no extra switching is involved; if ordered delivered to other than the billed consignee at destination; if change in route is required on account of embargo; on carload freight billed for export with no other destination and subsequently ordered to a designated wharf. Only one change in destination is ordinarily permitted, and the through

rate or a combination rate from point of origin to final destination via transit point plus transit charge, if any, applies. Freight stopped, diverted, or reconsigned under the rules is subject to demurrage and track storage charges applying at the point where diversion occurs.

If diversion occurs after delivery to a connecting line at destination, switching charges of the connecting line are in addition to other charges.

Charges for diversion are as follows:

Change in name of consignor	$1.35
Stopping in transit	2.25
Diversion in transit	2.25
Change of destination, order placed before arrival	2.25
Diversion to point outside switching limits, after arrival, before placement	6.30
Diversion to point within switching limits before placement:	
If order placed before arrival	Free.
If order placed within 24 hours	2.25
If order placed later	6.30

Diversion to points outside switching limits after placement takes the regular rates from reconsignment point plus $6.30 per car. Diversion to point within switching limits after placement takes the regular switching rate. A charge is usually made also for out of line or back haul.

Grain and seeds will be placed on hold tracks, by certain rail lines, for inspection and reconsignment without charge before expiration of free time, and $2.25 per car after free time. No charge is made when inspected at point where delivery is taken, if originally billed to destination.

Cotton may be concentrated at Galveston, Houston, or Texas City for marketing, storing, grading, assembling grades, inspecting, conditioning, weighing, bleaching linters, cleaning cotton, compressing, marking, and reshipping. Cotton and cotton linters may go through uncompressed, but if compressed a density of 22½ pounds per cubic foot is required. Carriers assume the cost of compression, including loading, topping, and insurance, not in excess of 18 cents per 100 pounds when tariffs provide that rate includes cost of compression. This cost is paid by rail carrier direct to the compress company. When concentrated at Galveston, Houston, or Texas City, cotton or cotton linters may be reshipped to Galveston or Texas City and when concentrated at Houston may be reshipped to Houston docks or municipal wharves for transshipment by vessel to foreign destination or to points in the United States, Canada, or Mexico when rates are provided via Gulf in connection with the rail carrier granting concentration. Each bill of lading lot must be delivered complete, or in lots of not less than 50 bales compressed, or 25 bales uncompressed. Only one stop for concentration is allowed at Galveston, Houston, and

Texas City, where a further stop may be made at the following charges:

(*a*) At Houston for reshipment to Galveston or Texas City for transshipment to vessels at a charge of 6½ cents per 100 pounds in addition to the freight rate.

(*b*) At Houston when in direct line to final destination at 6½ cents per 100 pounds in addition to the freight rate.

(*c*) At Texas City for reshipment to Galveston for transshipment to vessel at 6½ cents in addition to the freight rate.

(*d*) Above applies only on shipments billed locally to Houston or Texas City.

(*e*) At Galveston for transshipment by vessel at 6½ cents per 100 pounds in addition to the freight rates. Cotton may be delivered direct to steamship lines at Galveston.

An allowance of 13 cents per bale at Houston and 22 cents per bale at Galveston is made to shippers who dray cotton and cotton linters from concentration yards at those points to wharves or piers. The charge of 16 cents per bale assessed at Texas City for transferring shipments from concentration warehouse or compress to wharves is refunded to shippers upon presentation of inbound expense bill and bill of Texas City Terminal Company covering such transfer. Rail carriers assume the cost of unloading at Galveston, Houston, and Texas City when concentration privilege is taken at those points.

Cotton and cotton linters must be reshipped from concentration point within one year, otherwise local rates to and from concentration point apply. Detailed information will be found in Texas lines tariff No. 29–A, Agent A. C. Fonda's I. C. C. No. 79.

Carload shipments of structural iron or steel moving under W. J. Sedgman's tariff 16–1, I. C. C. No. 153, may be stopped at any point in Texas for reworking or fabrication and reconsigned to destinations in Texas. The same privilege is granted on shipments arriving at Galveston via Mallory Steamship Co. or Morgan Line, and at Houston via Southern Steamship Line when reconsigned to Texas points via International-Great Northern Railroad or Missouri-Kansas-Texas Railroad of Texas. The time limit is 12 months. Through rate from point of origin to final destination plus 2 cents per 100 pounds applies on the fabricated product. Indirect or back haul not in excess of 100 miles is allowed free; such haul in excess of 100 miles is charged for at 9 mills per ton mile. Switching charge of connecting line at fabricating point is absorbed on such shipments as require switching to reach fabricating plant. Complete details are given in Texas lines tariff No. 31–1, Agent A. C. Fonda's I. C. C. No. 139.

Cottonseed, copra, palm kernel, peanut, rape seed, sesame seed, and soya-bean oil, cake, and meal imported through California or

north Pacific coast terminals or originating locally at such points may be stopped at all points in Texas for refining, barreling, storing, inspecting, and blending oil and for grinding, cracking, sacking, storing, and inspecting cake or meal when destined to points in Texas and other points named in Transcontinental Freight Bureau tariffs Nos. 3–P, 30–I, and 1–Q, Agent R. H. Countiss, I. C. C. Nos. 1108, 1111, and 1112, to which through rates are in effect via the transit point. The through rate plus the transit charge applies if reshipped within one year. Switching charge of connecting line necessary to reach transit warehouse is in addition to the through rate. Complete details are shown in Texas lines tariff No. 40–A, Agent A. C. Fonda's I. C. C. No. 141.

Import rates in effect on date of reshipment apply on import shipments which have reached port of entry within 18 months and which have been stored on property of the Galveston Wharf Co. or Southern Pacific Terminal Co. at Galveston, or when stored elsewhere, provided consignee, owner, or authorized agent furnishes satisfactory proof that there has been no substitution or alteration of the shipments originally stored. In the latter case the cost of moving shipment from shipside to public warehouses on railroad tracks and cost of reloading into cars at such warehouses must be borne by shipper or owner. This privilege applies via Southern Pacific lines and is authorized by tariff No. 669A, I. C. C. No. 1371.

The other transit privileges outlined above are contained in a large number of tariffs applying on or via various rail carriers. Representatives of the carriers should be consulted for details.

MISCELLANEOUS RAILROAD CHARGES, ALLOWANCES AND REGULATIONS.

On import traffic the rail carriers generally will pay and bill forward as advances: Ocean carrier charges, customhouse brokerage fee, import duties and war revenue taxes. On coastwise traffic the charges of the ocean carrier and transfer charge between water and rail terminal are usually paid by the rail carrier and billed forward as advances.

The charge for bulkheading cars loaded with bananas, when material is furnished and service performed by carrier, is $2. Cars used in movement of tropical fruit and coconuts are generally provided with false floors and door slats at expense of carrier having road haul. The cost of loading bananas and coconuts in straight or mixed carloads, or mixed with other tropical fruits, is absorbed by carrier having line haul, and is paid to shipper who performs the service. Carriers furnish grain doors and door protection free of charge when required to protect or make bulk grain and grain products or other bulk freight secure for shipment, when such traffic originates on and moves over their lines. Cost of material used for

dunnage or bracing in securing loads or for staking flat or gondola cars must be borne by shippers. The charge for bracing and blocking automobiles in cars when material is furnished and service performed by the carriers is $5 per vehicle.

Usually no freight charges are assessed on the weight of the following materials:

Material used in false floors or car bottoms for tropical fruits.

Material used in bulkheading cars loaded with bananas.

Straw packing not to exceed 400 pounds, with tropical fruits and coconuts.

Packing not to exceed 500 pounds with vegetables, melons, or eggs.

Blocking, stakes, etc., for freight on open cars except lumber.

Stakes, strips, and supports for lumber not to exceed 500 pounds.

The following amounts are usually allowed to owners, buyers, or sellers for loading cotton and cotton linters:

Square bales, 3 cents each; square bales, topped, 5 cents each additional; round bales, 100 or less loaded to car, 1½ cents each; 101 to 200 loaded to car, 2 cents each; more than 200 loaded to car, 3 cents each.

The charge for weighing or reweighing on all lines when carrier's scales are used is $2.25 per car, and $1.35 per car when private scales are used.

Import shipments less than carload, when forwarded in bond, are subject to rule 6 of the consolidated freight classification, which requires that "Each package, bundle, or loose piece of freight must be plainly, legibly, and durably marked by brush, stencil, marking, crayon (not chalk), rubber type, metal type, pasted label, tag, or other method which provides marks equally plain, legible, and durable, showing the name of only one consignee, and of only one station, town or city, and state to which destined." If such shipments upon delivery to carrier at the port bear blind or abbreviated marks, they will be marked to show in transit entry number, station from, and consignee, said marking to be placed as close as possible to the numbers and marks of the package and under customs supervision. The charge for such marking when done by representatives of the carrier is 15 cents for each package or piece, which, unless paid to representative of the carrier, will follow as an advance charge against the shipment. Import shipments entered for consumption at ports of entry are subject to the same rule and the same charges.

STEAMSHIP LINES.

There are 47 steamship lines operating out of the port of Galveston, of which 13 are under American registry, 1 under American and British, and 23 under foreign registry.

Of the 44 steamship lines operating out of Galveston to foreign countries, 34 have regular sailings, of which 2 have weekly sailings, 6 biweekly sailings, 11 semimonthly sailings, and 15 monthly sailings. Galveston has steamship service to and from the Atlantic and Pacific coast of the United States, British Columbia, Mexico, West Indies, Cuba, Jamaica, Central and South America, United Kingdom and Continental Europe, and the Orient.

There are several lines of steamers engaged in the coastwise and intercoastal traffic from and to this port. The Mallory Line and Morgan Line have regular sailings to and from New York, and the Luckenbach Line and the Pacific, Carribean & Gulf Line have sailings to and from the west coast of the United States.

Further information regarding steamship lines is shown in the following table:

Steamship lines, port of Gaveston, Tex.

UNITED KINGDOM AND EUROPE.

Name of line.	(a) Owner. (b) Operator.	Name and address of agent.	Nationality.	Between what points operated.	Location of terminals.	Schedule.	Class of service.	Remarks.
Dixie Line	(a) U. S. Shipping Board. (b) Trosdal, Plant & La Fonta.	J. L. Beveridge, 506-509 American National Ins. Building.	American	Adriatic and Levant ports; west coast Italy and French Mediterranean ports.	Pier 33	Monthly and biweekly.	Tramp freight	
Castle Line	(a) James Chambers & Co. (b) Fowler & McVitie.	Fowler & McVitie, Cotton Exchange Building.	British	Ghent and Antwerp and London.	Pier 36	Semimonthly	Freight	
Larrimaga Line	(a) Larrimaga & Co. (Ltd.) (b) Do.	Fowler & McVitie, Cotton Exchange Building.	do	Manchester	do	4 or more per month, during cotton season according to demand.	do	
Elder, Dempster Line.	(a) Elder, Dempster & Co. (Ltd.). (b) Do.	D. & G. Warriner, 909 American National Ins. Building.	do	Liverpool	No particular berth.	Irregular	do	
Head Line and Lord Line.	(a) Ulster S. S. Co. (b) C. Heyn & Sons,	J. Merrow & Co., 212½ Avenue B.	do	Belfast and Dublin.	No regular pier	Service practically discontinued.	do	
Dalgliesh Line	(a) R. S. Dalgliesh (Ltd.) (b) Do.	Thomas Rice & Co., Cotton Exchange Building.	do	European ports	Piers 16 and 18	Service practically discontinued.		
Royal Mail Steam Packet Line.	(a) Royal Mail Steam Packet Co. (b) Do.	Wm. Parr & Co., 202½ Avenue B.	do	Bremen, Rotterdam, London.	Pier 11	Biweekly	Freight and passenger.	
Harrison Line	(a) Thos. & Jas. Harrison. (b) Do.	do	do	Liverpool	Pier 10	Irregular	Freight	
Leyland Line	(a) Frederick Leyland & Co. (Ltd.); (b) International Mercantile Marine Co.	J. A. Hickey	do	Liverpool and continental ports.	do	Semimonthly; oftener during cotton season.	Freight and passenger.	Two passenger steamers make regular sailings between Gulf ports and Liverpool.
Scandinavian American Line.	(a) Scandinavian American Line. (b) Do.	Wilkins & Biehl, 7 Marine Building.	Danish	Copenhagen and other Danish ports.	Pier 29	Semimonthly	Freight	

Steamship lines, port of Galveston, Tex.—Continued.

UNITED KINGDOM AND EUROPE—Continued.

Name of line.	(a) Owner. (b) Operator.	Name and address of agent.	Nationality.	Between what points operated.	Location of terminals.	Schedule.	Class of service.	Remarks.
East Asiatic Co. (Ltd.).	(a) East Asiatic Co. (b) Do.	J. H. W. Steele Co., 2102 Avenue B.	Danish	Hamburg, Bremen, Havre, Copenhagen, Danzig and other Baltic and Danish ports.	Pier 39	Monthly	Tramp freight	
Holland-American Line.	(a) Holland American Line. (b) Texas Transport & Terminal Co.	Texas Transport & Terminal Co., Marine Building.	Dutch	Rotterdam, Amsterdam, Bremen, Hamburg.	do	do	First class freight.	
French Line	(a) Campagnie Generale Transatlantic. (b) Texas Transport & Terminal Co.	do	French	Havre, Bordeaux, Antwerp, Ghent, Bremen, Hamburg.	do	Biweekly	do	
Ocean Line	(a) Ocean Line (b) Do.	Wilkins & Biehl, 7 Maine Building.	German	Bremen and Hamburg.	Pier 29	Monthly	Freight	
Cosulich Line	(a) Societa Tristina di Navigazione. (b) Do.	Daniel Ripley & Co., Marine Building.	Italian	Barcelona, Venice, and Trieste.	Pier 12, east end of water front.	do	do	
Navigazione Generale Italiana.	(a) Navigazione Generale Italiana. (b) Texas Transport & Terminal Co.	Texas Transport & Terminal Co., Marine Building.	do	Barcelona, Marseilles, Genoa, Naples.	Pier 39	do	First-class freight	
Navigazione Alta Italia (Creole Line.)	(a) Navigazione Alta Italia. (b) J. Merrow & Co.	J. Merrow & Co., 2126½ Avenue B.	do	Genoa and Mediterranean.	No particular pier.	Irregular (as business warrants).	Freight	
Norway Mexico Gulf Line.	(a) Wilh. Wilhemsen. (b) Fowler & McVitie.	Fowler & McVitie, Cotton Exchange Building.	Norwegian	Christiana, Gothenburg, Copenhagen, and other Scandinavian ports.	Pier 36	Semimonthly	do	This line is in conjunction with Swedish American Mexico Line and Trans-Atlantic S. S. Co., joint service.
Nervion Line	(a) Cia Maritima Del Nervion (b) Thos. Rice & Co.	Thos. Rice & Co., Cotton Exchange Building.	Spanish	Liverpool, Barcelona and/or Marseilles and/or Genoa.	Piers 16 and 18	1 monthly	do	Sailings are invariably direct to destination, calling nowhere en route.
					do	Semimonthly	do	
Swedish America Mexico Line.	(a) Dan Bostrom (b) Fowler & McVitie.	Fowler & McVitie, Cotton Exchange Building.	Swedish	Christiana, Gothenburg, Copenhagen, and other Scandinavian ports.	Pier 36	do	do	This line is in conjunction with Norway, Mexico Gulf Line & Transatlantic S. S. Co., joint service.
Transatlantic S. S. Co. Line.	(a) Sandstrom Stranne & Co. (Ltd.). (b) Fowler & McVitie.	Daniel Ripley & Co., Marine Building.	do	do	do	do	do	This line is in conjunction with Norway, Mexico Gulf Line and Swedish America Mexico line, joint service.
Lallier & Latta Line.	(a) Various interests (b) Lallier & Latta.	Lallier & Latta, Cotton Exchange Building.	Various	Bremen, Hamburg	Pier 21	Biweekly	Regular tramp freight.	Freight accepted for transshipment to all Scandinavian, Baltic, and Finnish Gulf ports.
Texas Continental Line.	(a) Texas Continental Line. (b) Do.	Wilkins & Biehl, 7 Marine Building.	do	Bremen, Hamburg, Rotterdam, and Danish ports.	Pier 29	Semimonthly	Freight	

WEST INDIES.

Lone Star S. S. Line.	(a) Lone Star S. S. Co. (b) Do.	Lone Star S. S. Co.	American	All ports in Cuba, Santo Domingo, Porto Rico, and Jamaica.	Pier 27	Every 10 days	Freight	

Steamship lines, port of Galveston, Tex.—Continued.

SOUTH AND CENTRAL AMERICA.

Name of line.	(a) Owner. (b) Operator.	Name and address of agent.	Nationality.	Between what points operated.	Location of terminals.	Schedule.	Class of service.	Remarks.
Delta Line	(a) U. S. Shipping Board. (b) Mississippi Shipping Co.	S. Sgitcovitch & Co., Cotton Exchange Building.	American	Santos, Bahia, Rio de Janerio, Buenos Aires, Monte Video.	Pier 40	When cargo offers.	Freight	
Cia de Navegacao Lloyd Brasileiro Line.	(a) Brazilian Government. (b) Lloyd Brasileiro.	Lallier & Latta, Cotton Exchange Building.	Brazilian	Rio de Janeiro, Santos, and Buenos Aires.	No particular pier.	Monthly	Regular liner service.	Steamers will call at any safe port on the east coast of South America to receive or discharge parcels of 1,000 tons or more. Freight accepted or transshipment to all east coast South American ports.
Skagland's Line	(a) T. H. Skagland & Son. (b) Do.	do	Norwegian	Victoria, Santos, Rio de Janeiro.	No regular berth	do	Freight	

COASTWISE AND INTERCOASTAL.

Mallory Line	(a) Atlantic, Gulf & West Indies. (b) Mallory S. S. Co.	F. T. Rennie, 2322 Avenue B.	American	New York via Key West.	Piers 23 to 27	Semiweekly	Freight and passenger.	
Luckenbach Line	(a) Luckenbach S.S. Co. (b) Do.	Wm. Parr & Co., 2022½ Avenue B.	do	U. S. Pacific coast	Pier 10, east end wharf front.	Monthly	Freight	
Morgan Line	(a) Southern Pacific Co. (b) Do.	H. M. Wilkins	do	New York	Pier B, west end water front.	Semiweekly	do	
Pacific Caribbean & Gulf Line.	(a) Swayne & Hoyt. (b) Do.	J. H. W. Steele Co., 2102 Avenue B.	do	U. S. Pacific coast and Mexican ports.	Pier 39	Monthly	Coastwise freight	

OTHER FOREIGN DESTINATIONS.

Lykes Line	(a) U. S. Shipping Board. (b) Lykes Bros.	Lykes Bros., 512 American National Ins. Building.	American	Hamburg, Bremen Rotterdam Cuban ports, Porto Rico. Santo Domingo Haiti, Jamaica	Pier 41 do do do do	Biweekly Every 20 days. Biweekly. Do. Do.	Liner	
Ward Line	(a) New York & Cuba S. S. Co. (b) Do.	S. Sgitcovitch Line	American	Tampico, Vera Cruz, Puerto Mexico.	Pier 40	Monthly	Freight	
Shore Line	(a) U. S. Shipping Board. (b) Tampa Inter-Ocean S. S. Co.	Tampa Inter-Ocean S. S. Co., 910 American National Ins. Building.	do	Far Eastern ports Spanish Mediterranean Spanish Atlantic and Portugal	do Pier 27 do	do	do	
Munson Line	(a) Munson S. S. Co. (b) Lone Star S. S. Co.	Lone Star S. S. Co.	do	West Indies, Mexico, Atlantic and Pacific Ports of North and South America.	do	Irregular	Freight and passenger.	
Morgan Line	(a) Southern Pacific Co. (b) Do.	H. M. Wilkins	do	Tampico	Pier C, west end water front.	do	Freight	
Snyder Banana Co. Line.	(a) Snyder Banana Co. (b) Do.	Snyder Banana Co.	do	Frontera, Mexico	Pier 19	Weekly	Banana importing.	
Steele S. S. Line	(a) J. H. W. Steele Co. (b) Do.	J. H. Steele Co., 2102 Avenue B.	do	Tampico Vera Cruz and other Mexican ports.	Pier 39 West end water front.	Semimonthly	First-class liner, freight and passenger.	
Dollar Line	(a) Robt. Dollar & Co. (b) Do.	Thos. Rice & Co., Cotton Exchange Building.	United States and British.	Oriental ports	Piers 16 and 18	Service practically discontinued.	Freight	
Mitsui Bussan Kaisha (Limited).	(a) Mitsui & Co. (Ltd.). (b) Do.	S. Sgitcovitch, Cotton Exchange Building.	Japanese	Far Eastern ports	Pier 40	Irregular	Tramp freight	
Nippon Tusen Kaisha Line.	(a) Japan Mail S. S. Co. (b) Fowler & McVitie.	Fowler & McVitie, Cotton Exchange Building.	do	Japanese ports	Pier 36	Monthly	Freight	
Toyo Kisen Kaisha Line.	(a) Toyo Kisen Kabu Kaisha. (b) Texas Transport & Terminal Co. (Inc.).	Texas Transport & Terminal Co., Marine Building.	do	do	Pier 39	do	First class freight	
Mitsui Line	(a) Mitsui Bussan Kaisha. (b) Do.	Lallier & Latta, Cotton Exchange Building.	do	do	Pier 21	Irregular	Tramp freight	
K Line	(a) Kokusai Kisen Kabushi Kaisha. (b) Suzuki & Co.	Trosdal, Plant & La Fonta, 506–509 American National Ins. Building.	do	Yokohama and Kobe	Pier 32	Biweekly	First class freight	

Steamship lines, port of Galveston, Tex.—Continued.

OTHER FOREIGN DESTINATIONS.

Name of line.	(a) Owner. (b) Operator.	Name and address of agent.	Nationality.	Between what points operated.	Location of terminals.	Schedule.	Class of service.	Remarks.
Osaka Shosen Kaisha Line (O. S. K. Line).	(a) Osaka Shosen Kaisha. (b) Do.	J. H. W. Steele Co., 2102 Avenue B.	do	do	Pier 39	Monthly	First class liner, freight and passenger.	
Pinillos Line	(a) Pinillos, Izquierdo & Co. (b) Do.	E. Sevilla & Son, 1118 American National Ins. Building.	Spanish	Cuba, Canary Islands, and all Spanish ports.	Pier 15	Semimonthly	Freight and passenger.	
Columbia Transport Co. Line.	(a) B. M. Bloomfield. (b) Do.	B. M. Bloomfield, 418 American National Ins. Building.	Various	European and Far Eastern ports.	No particular berth.	Irregular	Tramp freight	
Holt & Bloomfield.	(a) Alfred Holt. (b) B. M. Bloomfield.	Holt & Bloomfield	do	do	do	do	Freight	

STEAMSHIP RATES.

The following are the ocean freight rates on important commodities in effect May 15, 1923, from Gulf ports to foreign countries, on United States Shipping Board vessels applying from ports having service to countries indicated:

Ocean freight rates on important commodities from Gulf ports to foreign ports.

[Rates in cents per 100 pounds, unless otherwise stated. In effect May 15, 1923.]

	Cotton, raw.		Lumber.		Petroleum and products.					Corn.	Wheat.	Wheat flour.	Iron and steel.	Tobacco and cigars.	General cargo.
					Asphalt.	Crude oil.	Gasoline.		Lubricating oils.	Wax.						
	High density.	*Standard.*	*Heavy.*	*Light.*			*Cases.*	*Drums.*							
United Kingdom	37½	52½	30	40	$5 per ton.	Rate open	100	150	25	30	15	15 per bu.	20	$4 to $8 per ton.	50 to 60	75.
Irish ports	42½	57½														
French Atlantic	42½	57½	40	50	40	40	35 cu. ft.	90	38	38	16	16 per bu.	21	$8 to $11 per ton.	60 to 90	90.
Antwerp-Ghent	42½	57½	Rate open		30	37½	30 cu. ft.	75	25	25	No fixed rate.	No fixed rate.	No fixed rate.	$3½ to $7.50 per ton.	40 to 70	85.
Rotterdam	42½	57½	30	40	30	37½	30 cu. ft.	75	25	25	do	do	do	do	40 to 70	85.
Amsterdam	42½	57½	Rate open		30	37½	30 cu. ft.	75	25	25	do	do	do		40 to 70	85.
Hamburg	40	55	do		32½	40	30	82	25	25	do	do	do	$3½ to $7.50 per ton.	45 to 75	90.
Bremen	40	55	do		32½	40	30	82	25	25	do	do	do	do	45 to 75	90.
Eastern Mediterranean													do	$10 to $13 per ton.		
Western Mediterranean												19			75	
Spanish Mediterranean	45	60	40	50												
French Mediterranean	85	100	50	60	$9 per ton.	No fixed rate.	35	75	35	45						
Italy (west coast)	45	60	40	50								19			$16 per ton.	
Cuba											25 to 57½		25 to 52½			$7 per ton.
Mexico			$10 per M ft. b. m.								10 per bu.					
British Honduras			do													
Honduras			do											25		
Dominican Republic																$7 per ton.
Central America																$7 per ton.
South America (west coast)																About $10 per ton.
India, Persian Gulf, and Red Sea, British Indies, Orient, China, Japan.	Rate open													$8 per ton		$18 per ton.

NOTE.—These rates apply to Gulf ports having shipping service to and from the points indicated in this table.

Ocean freight rates on important commodities from foreign ports to Gulf ports.

[Rate in cents per 100 pounds, unless otherwise stated. In effect May 15, 1923.]

	Bananas.	Sugar.	Molasses.	Coffee.	Jute, migrs.	Fibers and grasses.	Logs and lumber.	Nitrates.	Chemicals, n. e. s.	General cargo.
United Kingdom, England					45 to 67 per ton W. T.				92/6 per ton W. M.	Rates open.
Jamaica	(1)									
Central America	(1)									
British Honduras	(1)									
Guatemala	(1)			40			$4 per 40 cu. ft.			
Honduras	(1)									
Nicaragua	(1)						$5.75 per 40 cu. ft.			
Panama	(1)								$7	$7 per ton.
Cuba (north side)		12	Tankers movement, ⅜c. per gal.							
Cuba (south side)		13				20				
Mexico										
Dominican Republic			Tankers movement, ⅜c. per gal.							
South America (east coast)				35c. per bag.				$5.75 per ton.		
South America (west coast)				35c. per bag.						
Brazil								$5.75 per ton.		
Chile										Rates open.
Havre-Hamburg Range										Rates open.
Germany, Holland										Rates open.
Belgium, France										Rates open.
India, Persian Gulf, and Red Sea										Rates open.
British India										Rates open.

[1] No tariff. Trade controlled by fruit companies who credit steamers with 50 cents a bunch.

NOTE.—These rates apply to Gulf ports having shipping service to and from the points indicated in this table.

TELEPHONE AND TELEGRAPH LINES.

Galveston has telephone connection with all parts of the United States and Canada. The telephone system is operated by the Southern Bell Telephone Co., a unit of the Bell telephone system. Telegraph communication is afforded by the Postal Telegraph-Cable Co. and the Western Union Telegraph Co.

CABLES.

Galveston has cable connection with Puerto, Mexico, and Vera Cruz, Mexico. These cables are owned and operated by joint companies, the American Cables (Inc.) and the Mexican Telegraph Co.

GOVERNMENT LAND RADIO STATIONS.

There is a United States naval wireless station at Galveston open to commercial traffic to and from ships at sea. This station handles all of the wireless commercial traffic at the port. The average day range is 200 miles and the night range 300 miles. The service is continuous, and the station is connected with the wires of the Western Union Telegraph Co. and those of the Postal Telegraph Cable Co.

THE FREIGHT RATE SITUATION.

IMPORT RATES.

The question of the differentials to be allowed on import freight moving from Gulf ports under that moving from New York and other North Atlantic coast ports was a vexatious one for many years. A committee appointed to study this matter met for the first time on June 11, 1903, but no decision was reached. Arbitrators were later appointed and rendered a decision on October 29, 1907, allowing the following differentials in cents per 100 pounds to the Gulf ports on the six classes governed by the official classification:

Classes	1	2	3	4	5	6
Gulf rates less than New York	18	18	12	8	6	6

Commodities taking rates lower than sixth class were assigned the sixth class differential. Commodities taking sixth class rates or higher were allowed the differential of the class having the same or nearest the same rate. Commodities having a rate exactly intermediate to two classes were assigned the differential of the lower class. In case domestic rates from any Gulf port were lower than the rates made as above, such domestic rates were made to apply as maxima.

These differentials were generally observed for many years, and rates were changed from time to time on less than statutory notice by permission of the Interstate Commerce Commission to maintain

the relationship fixed by the award as between the Gulf ports and the North Atlantic coast ports.

In 1919 these differentials were made to apply on traffic originating in Europe and Africa, while on traffic originating in other countries the rates from Gulf ports were made generally the same as the rates from New York, or with certain relationship to New York rates, the lowest domestic rates from any Gulf port, which usually was New Orleans, being taken as maxima.

The unequal horizontal increases authorized in 1920 by the Interstate Commerce Commission in the Ex parte 74 case again disturbed the relationship, as the rates from North Atlantic coast points to Chicago, Peoria, St. Louis, etc., were increased 40 per cent, while the rates from the Gulf to the same points were increased 33⅓ or 25 per cent according to the destination, thus making a much wider spread between the two groups of rates.

The tariff of the trunk lines issued by W. S. Curlett, agent, I. C. C. A72, effective May 1, 1922, again restored the rate relationship between the North Atlantic and Gulf ports on certain commodities, including, among others, burlap bagging, bleach, salt cake, china clay, feldspar, kainit, sulphate of lime, mahogany logs, magnesite ore, potash, wood pulp, salts, sodas, talc, and whiting.

Accompanying this report are tables giving comparisons of class and commodity rates on import traffic from New York and from Gulf ports. The table of class rates shows that these ports have an advantage over New York on import traffic from Asia, Australia, New Zealand, Philippine Islands, Central and South America of 7 cents first class at Chicago, Milwaukee, and Peoria, increasing at St. Louis, Cincinnati, Louisville, and other points nearer the Gulf. Import class rates from Texas ports are the same as from New Orleans to points as far east as Cincinnati.

On bananas from Central America, Gulf ports have an advantage of 4 cents per 100 pounds to Chicago, but the advantage is reversed with respect to Milwaukee, where the New York rate is 83.5 cents as compared with 86 cents from Gulf ports. To Peoria, New York has an advantage of 8 cents, while to Cairo the advantage of Gulf ports amounts to 35.5 cents per 100 pounds. Large quantities of bananas move through Cairo for distribution to points beyond.

On burlaps from India, Gulf ports have an advantage over New York of 6 cents to Chicago, Milwaukee, Peoria, and St. Louis, 3 cents to Cincinnati, 8.5 cents to Louisville and Evansville, and 17.5 cents to Cairo. On coffee from South America, Gulf ports have an advantage over New York of 2.5 cents to Chicago and Milwaukee, 8 cents to Peoria, 14 cents to St. Louis, 5 cents to Cincinnati, 5.5 cents to Louisville, 11 cents to Evansville, and 21 cents to Cairo. On sugar, the differentials in favor of Gulf ports as compared with New York are

Comparison of class rates from New York and Gulf ports on import traffic.

[Rates in cents per 100 pounds governed by official classification. In effect Oct. 1, 1923.]

To—	From New York.						From Gulf ports.						Differential, Gulf under New York.						Differential, under Gulf-Chicago rate.					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Chicago, Ill.:																								
Prior to 1914	75	65	50	35	30	25	57	47	38	27	24	19	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
5 per cent increase, 1914	78.8	68.3	52.5	36.8	31.5	26.3	60.8	50.3	40.5	28.8	25.5	20.3	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
15 per cent increase, 1917	90	79	60	42	36	30	60.8	50.3	40.5	28.8	25.5	20.3	29.2	28.7	19.5	13.2	10.5	9.7	.....	.....	.....	.....	.....	.....
G. O. 28 increase, 1918	112.5	99	75	52.5	45	37.5	76	63	50.5	36	32	25.5	36.5	36	24.5	16.5	13	12	.....	.....	.....	.....	.....	.....
Adjustment, 1919	112.5	99	75	52.5	45	37.5	A 112.5 B 94.5	99 81	75 63	52.5 44.5	45 39	37.5 31.5	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
Ex parte 74, 1920	157.5	138.5	105	73.5	63	52.5	A 150 B 126	132 108	100 84	70 59.5	60 52	50 42	7.5 31.5	6.5 30.5	5 21	3.5 14	3 11	2.5 10.5	.....	.....	.....	.....	.....	.....
Reduced rates, 1922	142	124.5	94.5	66	56.5	47.5	A 135 B 113.5	119 97	90 75.5	63 53.5	54 47	45 38	7 28.5	5.5 27.5	4.5 19	3 12.5	2.5 9.5	2.5 9.5	.....	.....	.....	.....	.....	.....
Milwaukee, Wis.:																								
Prior to 1914	75	65	50	35	30	25	57	47	38	37	24	19	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
5 per cent increase, 1914	78.8	68.3	52.5	36.8	31.5	26.3	60.8	50.3	40.5	28.8	25.5	20.3	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
15 per cent increase, 1917	90	79	60	42	36	30	60.8	50.3	40.5	28.8	25.5	20.3	29.2	28.7	19.5	13.2	10.5	9.7	.....	.....	.....	.....	.....	.....
G. O. 28 increase, 1918	112.5	99	75	52.5	45	37.5	76	63	50.5	26	32	25.5	36.5	36	24.5	16.5	13	12	.....	.....	.....	.....	.....	.....
Adjustment, 1919	112.5	99	75	52.5	45	37.5	A 112.5 B 94.5	99 81	75 63	52.5 44.5	45 39	37.5 31.5	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
Ex parte 74, 1920	157.5	138.5	105	73.5	63	52.5	A 150 B 126	132 108	100 84	70 59.5	60 52	50 42	7.5 31.5	6.5 30.5	5 21	3.5 14	3 11	2.5 10.5	.....	.....	.....	.....	.....	.....
Reduced rates, 1922	142	124.5	94.5	66	56.5	47.5	A 135 B 113.5	119 97	90 75.5	63 53.5	54 47	45 38	7 28.5	5.5 27.5	4.5 19	3 12.5	2.5 9.5	2.5 9.5	.....	.....	.....	.....	.....	.....
Peoria, Ill.:																								
Prior to 1914	83	72	55	39	33	28	65	54	43	31	27	22	18	18	12	8	6	6	+8	+7	+5	+4	+3	+3
5 per cent increase, 1914	86.7	75.1	57.8	40.5	34.7	28.9	68.7	57.1	45.8	32.5	28.7	22.9	18	18	12	8	6	6	+7.9	+6.8	+5.3	+3.7	+3.2	+2.6
15 per cent increase, 1917	99	87	66	46	39.5	33	68.7	57.1	45.8	32.5	28.7	22.9	30.3	29.9	20.2	13.5	10.8	10.1	+7.9	+6.8	+5.3	+3.7	+4.2	+2.6
G. O. 28 increase, 1918	124	109	82.5	57.5	49.5	41.5	86	71.5	57.5	40.5	36	28.5	38	37.5	25	17	13.5	13	+10	+8.5	+7	+4.5	+4	+3
Adjustment, 1919	124	109	82.5	58	49.5	41.5	A 124 B 106	109 91	82.5 70.5	58 50	49.5 43.5	41.5 35.5	18	18	12	8	6	6	+11.5 +11.5	+10 +10	+7.5 +7.5	+5.5 +5.5	+4.5 +4.5	+4 +4
Ex parte 74, 1920	173.5	152.5	115.5	81	69.5	58	A 165.5 B 141.5	145.5 21.5	110 94	77.5 66.5	66 58	55.5 47.5	8 32	7 31	5.5 21.5	3.5 14.5	3.5 11.5	2.5 10.5	+15.5 +15.5	+13.5 +13.5	+10 +10	+7.5 +7.5	+6 +6	+5 +5
Reduced rates, 1922	156	137	104	72.5	62	52.5	A 149 B 127.5	131 109.5	99 84.5	70 60	59.5 52	50 43	7 28.5	6 27.5	5 19.5	2.5 12.5	2.5 10	2.5 9.5	+14 +14	+12.5 +12.5	+9 +9	+7.5 +6.5	+5.5 +5	+5 +5
St. Louis, Mo.:																								
Prior to 1914	88	76	59	41	35	29	70	58	47	33	29	23	18	18	12	8	6	6	+13	+11	+9	+6	+5	+4
5 per cent increase, 1914	92.2	79.9	61.4	43.1	36.9	30.8	74.2	61.9	49.4	35.1	30.9	24.8	18	18	12	8	6	6	+13.4	+11.6	+8.9	+6.3	+5.4	+4.5
15 per cent increase, 1917	105.5	92.5	70	49	42	35	74.2	61.9	49.4	35.1	30.9	24.8	31.3	30.6	20.6	13.9	11.1	10.2	+13.4	+11.6	+8.9	+6.3	+5.4	+4.5
G. O. 28 increase, 1918	132	115.5	87.5	61.5	52.5	44	93	77.5	62	44	38.5	31	39	38	25.5	17.5	14	13	+17	+14.5	+11.5	+8	+6.5	+5.5
Adjustment, 1919	131.5	116	88	61.5	52.5	44	A 131.5 B 113.5	116 98	88 76	61.5 53.5	52.5 46.5	44 38	18	18	12	8	6	6	+19 +19	+17 +17	+13 +13	+9 +9	+7.5 +7.5	+6.5 +6.5
Ex parte 74, 1920	184.5	162	123	86	73.5	61.5	A 175.5 B 151.5	154.5 130.5	117.5 101.5	82 71.5	70 62	58.5 50.5	9 33	7.5 31.5	5.5 21.5	4 14.5	3.5 11.5	3 11	+25.5 +25.5	+22.5 +22.5	+17.5 +17.5	+12 +12	+10 +10	+8.5 +8.5
Reduced rates, 1922	166	145.5	110.5	77	66	55.5	A 158 B 136.5	139 117.5	106 91.5	74 64.5	63 56	52.5 45.5	8 29.5	6.5 28	4.5 19	3 12.5	3 10	3 10	+23 +23	+20 +20.5	+16 +16	+11 +11	+9 +9	+7.5 +7.5
Cincinnati, Ohio:																								
Prior to 1914	65	57	44	30	26	22	47	39	32	22	20	16	18	18	12	8	6	6	10	8	6	5	4	3
5 per cent increase, 1914	68.6	59.4	45.7	32	27.4	22.9	50.6	41.4	33.7	24	21.4	16.9	18	18	12	8	6	6	10.2	8.9	6.8	4.8	4.1	3.4
15 per cent increase, 1917	78.5	68.5	52	36.5	31.5	26	50.6	41.4	33.7	24	21.4	16.9	27.9	27.1	18.3	12.5	10.1	9.1	10.2	8.9	6.8	4.8	4.1	3.4
G. O. 28 increase, 1918	98	85.5	65	45.5	39.5	32.5	63.5	52	42	30	27	21	34.5	33.5	23	15.5	12.5	11.5	12.5	11	8.5	6	5	4.5
Adjustment, 1919	98	86	65.5	45.5	39	32.5	A 98 B 60	86 68	65.5 53.5	45.5 57.5	39 33	32.5 26.5	18	18	12	8	6	6	14.5 14.5	13 13	9.5 9.5	7 7	6 6	5 5
Ex parte 74, 1920	137	120.5	91.5	64	54.5	45.5	A 122.5 B 100	107.5 85	82 67	57 47	49 41.5	40.5 33	14.5 37	13 35.5	9.5 24.5	7 17	5.5 13	5 12.5	27.5 26	24.5 23	18 17	13 12.5	11 10.5	9.5 9
Reduced rates, 1922	123.5	108.5	82	57.5	49	41.5	A 110.5 B 90	97 76.5	74 60.5	51.5 42.5	44 37.5	36.5 29.5	13 33.5	11.5 32	8 21.5	6 15	5 11.5	4.5 11.5	24.5 23.5	22 20.5	16 15	11.5 11	10 9.5	8.5 8.5
Louisville, Ky.:																								
Prior to 1914	75	65	50	35	30	25	57	47	38	27	24	19	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
5 per cent increase, 1914	78.8	68.3	52.5	36.8	31.5	25.3	60.8	50.3	40.5	28.8	25.5	20.3	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
15 per cent increase, 1917	90	79	60	42	36	30	60.8	50.3	40.5	28.8	25.5	20.3	29.2	28.7	19.5	13.2	10.5	9.7	.....	.....	.....	.....	.....	.....
G. O. 28 increase, 1918	112.5	99	75	52.5	45	37.5	76	63	50.5	36	32	25.5	36.5	36	24.5	16.5	13	12	.....	.....	.....	.....	.....	.....
Adjustment, 1919	112.5	99	75	52.5	45	37.5	A 112.5 B 94.5	99 81	75 63	52.5 44.5	45 39	37.5 31.5	18	18	12	8	6	6	.....	.....	.....	.....	.....	.....
Ex parte 74, 1920	157.5	138.5	105	73.5	63	52.5	A 140.5 B 118	124 101.5	94 79	65.5 55.5	56.5 49	47 39.5	17 39.5	14.5 37	11 26	8 18	6.5 14	5.5 13	9.5 8	8 6.5	6 5	4.5 4	3.5 3	3 2.5
Reduced rates, 1922	142	124.5	94.5	66	56.5	47.5	A 126.5 B 106	111.5 91.5	84.5 71	59 50	51 44	42.5 35.5	15.5 36	13 33	10 23.5	7 16	5.5 12.5	5 12	5.5 7.5	7 5.5	5.5 4.5	4 3.5	3 3	2.5 2.5
Evansville, Ind.:																								
Prior to 1914	83	72	55	39	33	28	65	54	43	31	27	22	18	18	12	8	6	6	+8	+7	+5	+4	+3	+3
5 per cent increase, 1914	86.7	75.1	57.8	40.5	34.7	28.9	68.7	57.1	45.8	32.5	28.7	22.9	18	18	12	8	6	6	+7.9	+6.8	+5.3	+3.7	+3.2	+2.6
15 per cent increase, 1917	99	87	66	46	39.5	33	68.7	57.1	45.8	32.5	26.7	22.9	30.3	29.9	20.2	13.5	10.8	10.1	+7.9	+6.8	+5.3	+3.7	+3.2	+2.6
G. O. 28 increase, 1918	124	109	82.5	57.5	49.5	41.5	86	71.5	57.5	40.5	36	28.5	38	37.5	25	17	13.5	13	+10	+8.5	+7	+4.5	+4	+3
Adjustment, 1919	124	109	82.5	58	49.5	41.5	A 124 B 106	109 91	82.5 70.5	58 50	49.5 43.5	41.5 35.5	18	18	12	8	6	6	+11.5 +11.5	+10 +10	+7.5 +7.5	+5.5 +5.5	+4.5 +4.5	+4 +4
Ex parte 74, 1920	173.5	152.5	115.5	81	69.5	58	A 155 B 132.5	136.5 114	103 88	72.5 62.5	62 54.5	52 44.5	18.5 41	16 38.5	12.5 27.5	8.5 18.5	7.5 15	6 13.5	+5 +6.5	+4.5 +6	+3 +4	+2.5 +3	+2 +2.5	+2 +2.5
Reduced rates, 1922	156	137	104	72.5	62	52.5	A 139.5 B 119.5	123 102.5	92.5 79	65.5 56.5	56 49	47 40	16.5 36.5	14 34.5	11.5 25	7 16	6 13	5.5 12.5	+4.5 +6	+4 +5.5	+2.5 +3.5	+2.5 +3	+2 +2	+2 +2
Cairo, Ill.:																								
Prior to 1914	90	78	60	42	36	30	72	60	48	34	30	24	18	18	12	8	6	6	+15	+13	+10	+7	+6	+5
5 per cent increase, 1914	94.6	82	63	44.2	37.8	31.6	76.6	64	51	36.2	31.8	25.6	18	18	12	8	6	6	+15.8	+13.7	+10.5	+7.4	+6.3	+5.3
15 per cent increase, 1917	108	95	72	30.5	43	36	76.6	64	51	36.2	31.8	25.6	31.4	31	21	14.3	11.2	10.4	+15.8	+13.7	+10.5	+7.4	+6.3	+5.3
G. O. 28 increase, 1918	135	119	90	63	54	45	96	80	64	45.5	40	32	39	39	26	17.5	14	13	+20	+17	+13.5	+9.5	+8	+6.5
Adjustment, 1919	135	119	90	63	54	45	94	79	69	52.5	41.5	36.5	41	40	21	10.5	12.5	8.5	13.5	20	6	.....	3.5	1
Ex parte 74, 1920	189	166	126	88	75.5	63	117.5	99	86.5	65.5	52	45.5	71.5	67	39.5	22.5	23.5	17.5	32.5	33	13.5	4.5	8	4.5
Reduced rates, 1922	170.5	140.5	113.5	79	68	57	146.5	126	111.5	94	76.5	63	26 24	27 23.5	12 2	+10 +15	+2.5 +8.5	+2 +6	+13 +11.5	+7 +7	+14 +21.5	+28 +21	+18 +22.5	+15 +18

A. Rates apply on traffic imported from Asia, Australia, New Zealand, Central America, South America, and Philippine Islands.
B. Rates apply on traffic imported from Europe and Africa.
+ Indicates differential over Gulf-Chicago rate.

differentials in favor of Gulf ports as compared with New York are

not so great as on some other commodities. It should be noted that Philadelphia, Baltimore, Norfolk, and South Atlantic ports have differentials under the New York rates which give them even lower rates than Gulf ports on certain commodities.

EXPORT RATES.

There was no difference between the class rates from Chicago and Milwaukee to New York and from the same points to Gulf ports prior to the various general advances beginning with the 5 per cent increase in 1914.

The relationship was continued under the 5 per cent increase but was disturbed under the 15 per cent and General Order 28 advances in 1917 and 1918, respectively. The relationship was restored by the adjustment of rates to the Gulf in December, 1919, but was again disturbed by the percentage increases allowed by Ex parte 74 in August, 1920.

From St. Louis, Cincinnati, Louisville, Evansville, and Cairo, prior to 1914, there was a uniform differential to the Gulf under the rates from Chicago of 10, 8½, 6½, 4½, 4, and 3½ cents per 100 pounds on classes 1 to 6, respectively. At present, these differentials under the Chicago to Gulf rates are as follows, expressed in cents per 100 pounds:

Classes	1	2	3	4	5	6
From—						
St. Louis	12.0	10.5	7.5	5.5	5.0	4.0
Cincinnati, Louisville, Evansville, Cairo	20.0	17.5	13.0	9.0	7.5	6.5

The accompanying table shows the several increases in class rates since 1914 and their effect upon port differentials.

It will be observed that the differentials between the St. Louis to New York and the St. Louis to Gulf rates were not restored by the adjustment in 1919 to the basis that existed prior to the 5 per cent increase in 1914, and that the former differential was more than doubled by the increases under Ex parte 74.

As to Cincinnati, where there existed no differential prior to 1914, rates were made higher to the Gulf than to New York by the adjustment in 1919, but under Ex parte 74 were made lower to the Gulf by differentials 9, 7.5, 6, 4, 3.5, and 3 cents on classes 1 to 6, respectively.

From Louisville the former differentials were restored in 1919, but were almost trebled by the unequal increases under Ex parte 74 in 1920.

From Evansville and Cairo the differentials were somewhat increased over the 1914 figures by the adjustment in 1919, and at these

points also the unequal percentage increase of Ex parte 74 almost trebled the old differentials.

These changes resulted from the use of a different basis for making rates from Cincinnati and other Ohio River points and also from St. Louis to the Gulf on export traffic. Formerly the Cincinnati to New York rate (87 per cent of the Chicago to New York rate) was used as the basis of all these Ohio River points and St. Louis. The percentage increases allowed by the Interstate Commerce Commission have greatly increased the rates from these points to the Atlantic seaboard in comparison with the rates from the same points to the Gulf.

The relationship of rates from points intermediate between Chicago and the Gulf to the Chicago-Gulf rates, which was impaired by the several increases up to and including 1918, was restored by the Gulf foreign freight committee after conference with shippers and others to the extent of making the rates from these Ohio River points and St. Louis to the Gulf the same differential under the rates from Chicago to the Gulf as existed prior to the 5 per cent increase in 1914. This adjustment was disturbed again, however, by the unequal increases under Ex parte 74.

From Peoria to the Gulf, prior to the 5 per cent increase, rates were 3, 2, ½, 1, 1, ½ cents less than from Chicago to the Gulf. The differentials were changed by General Order 28, were restored in 1919, and are now slightly higher on first, second, fourth, and fifth classes.

Tables are also included showing export rates on a number of important commodities moving through Gulf ports, with the differentials as compared with rates to New York.

On agricultural implements from Chicago, Milwaukee, and Cincinnati destined to Central America, South America, or Asia, Gulf ports have a differential under the New York rate of 9 cents per 100 pounds. On goods destined to Europe and Africa, Gulf ports have an advantage of 15 cents from Chicago and Milwaukee, 10.5 cents from Cincinnati, and 25 cents from St. Louis. With favorable ocean rates the difference in favor of Gulf ports is sufficient to warrant a considerable movement by this route. On manufactured iron and steel articles, the foreign destination makes no difference in the rate. There is a differential on these commodities in favor of Gulf ports of 14.5 cents from Chicago, 11.5 cents from Milwaukee, 24 cents from Peoria, 33 cents from St. Louis, 15 cents from Cincinnati, and 25.5 cents from Louisville. On packing-house products there is likewise no difference in rates due to foreign destination. Rates from Chicago to the Gulf are 15.5 cents lower than to New York. From Milwaukee they are 12 cents, St. Louis 27 cents, Cincinnati 10.5 cents, and Louisville 19 cents lower to Gulf ports than to New York.

Comparison of class rates to New York and Gulf ports for export.

[Rates in cents per 100 pounds covered by official classification. In effect Oct. 1, 1923.]

From—	To New York.						To Gulf ports.						Differential, Gulf ports under New York.						Differential Gulf rate under Chicago-Gulf rate.					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Chicago, Ill.:																								
Prior to 1914	75	65	50	35	30	25	75	65	50	35	30	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5 per cent increase, 1914	78.8	68.3	52.5	36.8	31.5	26.3	78.8	68.3	52.5	36.8	31.5	26.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15 per cent increase, 1917	90	79	60	42	36	30	78.8	68.3	52.5	36.8	31.5	26.3	11.2	10.7	7.5	5.2	4.5	3.7	.....	.....	.....	.....	.....	.....
G. O. 28, 25 per cent increase, 1918	112.5	99	75	52.5	45	37.5	98.5	85.5	65.5	46	39.5	33	14	13.5	9.5	6.5	5.5	4.5	.....	.....	.....	.....	.....	.....
Adjustment, December, 1919	112.5	99	75	52.5	45	37.5	112.5	99	75	52.5	45	37.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ex parte 74, August, 1920	157.5	138.5	105	73.5	63	52.5	150	132	100	70	60	50	7.5	6.5	5	3.5	3	2.5	.....	.....	.....	.....	.....	.....
Reduced rates, 1922	142	124.5	94.5	66	56.5	47.5	135	119	90	63	54	45	7	5.5	4.5	3	2.5	2.5	.....	.....	.....	.....	.....	.....
Milwaukee, Wis.:																								
Prior to 1914	75	65	50	35	30	25	75	65	50	35	30	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5 per cent increase, 1914	78.8	68.3	52.5	36.8	31.5	26.3	78.8	68.3	52.5	36.8	31.5	26.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15 per cent increase, 1917	90	79	60	42	36	30	78.8	68.3	52.5	36.8	31.5	26.3	11.2	10.7	7.5	5.2	4.5	3.7	.....	.....	.....	.....	.....	.....
G. O. 28, 25 per cent increase, 1918	112.5	99	75	52.5	45	37.5	98.5	85.5	65.5	46	39.5	33	14	13.5	9.5	6.5	5.5	4.5	.....	.....	.....	.....	.....	.....
Adjustment, December, 1919	112.5	99	75	52.5	45	37.5	112.5	99	75	52.5	45	37.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ex parte 74, August, 1920	157.5	138.5	105	73.5	63	52.5	150	132	100	70	60	50	7.5	6.5	5	3.5	3	2.5	.....	.....	.....	.....	.....	.....
Reduced rates, 1922	142	124.5	94.5	66	56.5	47.5	135	119	90	63	54	45	7	5.5	4.5	3	2.5	2.5	.....	.....	.....	.....	.....	.....
Peoria, Ill.:																								
Prior to 1914	82.5	71.5	55	38.5	33	27.5	72	63	49.5	34	29	24.5	10.5	8.5	5.5	4.5	4	3	3	2	0.5	1	1	0.5
5 per cent increase, 1914	86.7	75.1	57.8	40.5	34.7	20.9	75.8	66.3	52	35.8	30.5	25.8	10.9	8.8	5.8	4.7	4.2	3.1	3	2	.5	1	1	.5
15 per cent increase, 1917	99	87	66	46	39.5	33	75.8	66.3	52	35.8	30.5	25.8	23.5	20.7	14	10.2	9	7.2	3	2	.5	1	1	.5
G. O. 28, 25 per cent increase, 1918	124	109	82.5	58	49.5	41.5	95	83	65	45	38	32.5	29	26	17.5	13	11.5	9	3.5	2.5	.5	1	1.5	.5
Adjustment, December, 1919	124	109	82.5	58	49.5	41.5	109.5	97	74.5	51.5	44	37	14.5	12	8	6.5	5.5	4.5	3	2	.5	1	1	.5
Ex parte 74, August, 1920	173.5	151.5	115.5	81	69.5	58	146	129.5	99.5	68.5	58.5	49.5	27.5	23	16	12.5	11	8.5	4	2.5	.5	1.5	1.5	.5
Reduced rates, 1922	156	137	104	72.5	62	52.5	131.5	116	89.5	61.5	52.5	44.5	24.5	21	14.5	11	9.5	8	3.5	3	.5	1.5	1.5	.5
St. Louis, Mo.:																								
Prior to 1914	87.5	76	58.5	41	35	29	65	56.5	43.5	30.5	26	21.5	22.5	19.5	15	10.5	9	7.5	10	8.5	6.5	4.5	4	3.5
5 per cent increase, 1914	92.2	79.9	61.4	43.1	36.5	30.8	68.8	59.8	46	32.3	27.5	22.8	23.4	20.1	15.4	10.8	9	8	10	8.5	6.5	4.5	4	3.5
15 per cent increase, 1917	105.5	92.5	70	49	42	35	68.6	59.4	45.7	32	27.4	22.9	36.9	33.1	24.3	17	14.6	12.1	10.2	8.9	6.8	4.8	4.1	3.4
G. O. 28, 25 per cent increase, 1918	131.5	116	88	61.5	52.5	44	86	74.5	57	40	34.5	28.5	45.5	41.5	31	21.5	18	15.5	12.5	11	8.5	6	5	4.5
Adjustment, December, 1119	131.5	116	88	61.5	52.5	44	102.5	90.5	68.5	48	41	34	29	26.5	19.5	13.5	11.5	10	10	8.5	6.5	4.5	4	3.5
Ex parte 74, August, 1920	184.5	162	123	86	73.5	61.5	139.5	120.5	91.5	64	54.5	45.5	48	41.5	31.5	22	19	16	13.5	11.5	8.5	6	5.5	4.5
Reduced rates, 1922	166	145.5	110.5	77	66	55.5	123	108.5	82.5	57.5	49	41	43	37	28	19.5	17	14.5	12	10.5	7.5	5.5	5	4
Cincinnati, Ohio:																								
Prior to 1914	65	56.5	43.5	30.5	26	21.5	65	56.5	43.5	30.5	26	21.5	.....	.....	.....	.....	.....	.....	10	8.5	6.5	4.5	4	3.5
5 per cent increase, 1914	68.6	59.4	45.7	32	27.4	22.9	68.8	59.8	46	32.3	27.5	22.8	[1].2	[1].4	[1].3	[1].3	[1].1	.1	10	8.5	6.5	4.5	4	3.5
15 per cent increase, 1917	78.3	68.5	52	36.5	31.5	26	68.6	59.4	45.7	32	27.4	22.9	9.0	9.1	6.3	4.5	4.1	3.1	10.2	8.9	6.8	4.8	4.1	3.4
G. O. 28, 25 per cent increase, 1918	98	86	65.5	45.5	39	32.5	86	74.5	57	40	34.5	28.5	12	11.5	8.5	5.5	4.5	4	12.5	11	8.5	6	5	4.5
Adjustment, December, 1919	98	86	65.5	45.5	39	32.5	102.5	90.5	68.5	48	41	34	[1] 4.5	[1] 4.5	[1] 3	[1] 2.5	[1] 2	[1] 1.5	10	8.5	6.5	4.5	4	3.5
Ex parte 74, August, 1920	137	120.5	91.5	64	55	45.5	128	113	85.5	60	51.5	42.5	9	7.5	6	4	3.5	3	22	19	14.5	10	8.5	7.5
Reduced rates, 1922	123.5	108.5	82	57.5	49	41.5	115	101.5	77	54	46.5	38.5	8.5	7	5	3.5	2.5	3	20	17.5	13	9	7.5	6.5
Louisville, Ky.:																								
Prior to 1914	75	65	50	35	30	25	65	56.5	43.5	30.5	26	21.5	10	8.5	6.5	4.5	4	3.5	10	8.5	6.5	4.5	4	3.5
5 per cent increase, 1914	78.3	68.3	52.5	36.8	31.5	26.3	68.8	59.8	46	32.3	27.5	22.8	10	8.5	6.5	4.5	4	3.5	10	8.5	6.5	4.3	4	3.5
15 per cent increase, 1917	90	79	60	42	36	30	68.6	59.4	45.7	32	27.4	22.9	21.4	19.6	14.3	10	8.6	7.1	10.2	8.9	6.8	4.8	4.1	3.4
G. O. 28, 25 per cent increase, 1918	112.5	99	75	52.5	45	37.5	86	74.5	57	40	34.5	28.5	26.5	24.5	18	12.5	10.5	9	12.5	11	8.5	6	5	4.5
Adjustment, December, 1919	112.5	99	75	52.5	45	37	102.5	90.5	68.5	48	41	34	10	8.5	6.5	4.5	4	3.5	10	8.5	6.5	4.5	4	3.5
Ex parte, 74, August, 1920	157.5	138.5	105	73.5	63	52.5	128	113	85.5	60	51.5	42.5	29.5	25.5	19.5	13.5	11.5	10	22	19	14.5	10	8.5	7.5
Reduced rates, 1922	142	124.5	94.5	66	56.5	47.5	115	101.5	77	54	46.5	38.5	27	23	17.5	12	10	9	20	17.5	13	9	7.5	6.5
Evansville, Ind.:																								
Prior to 1914	78.5	68	52.5	36.5	31.5	26	65	56.5	43.5	30.5	26	21.5	13.5	11.5	9	6	5.5	4.5	10	8.5	6.5	4.5	4	3.5
5 per cent increase, 1914	82.7	71.7	55.1	38.6	33.1	27.6	68.8	59.8	46	32.3	27.5	22.8	13.9	11.9	9.1	6.3	5.6	4.8	10	8.5	6.5	4.5	4	3.5
15 per cent increase, 1917	94.5	83	63	44	38	31.5	68.6	59.4	45.7	32	27.4	22.9	25.9	23.6	17.3	12	10.6	8.6	10.2	8.9	6.8	4.8	4.1	3.4
G. O. 28, 25 per cent increase, 1918	118	104	79	55	47.5	39.5	86	74.5	57	40	34.5	28.5	32	29.5	22	15	13	11	12.5	11	8.5	6	5	4.5
Adjustment, December, 1919	118	104	79	55	47.5	39.5	102.5	90.5	68.5	48	41	34	15.5	13.5	10.5	7	6.5	5.5	10	8.5	6.5	4.5	4	3.5
Ex parte 74, August, 1920	165.5	145.5	110.5	77	66	55	128	113	85.5	60	51.5	42.5	37.5	32.5	25	17	14.5	12.5	22	19	14.5	10	8.5	7.5
Reduced rates, 1922	149	130.5	99	69.5	59.5	50	115	101.5	77	54	46.5	38.5	34	29	22	15.5	13	11.5	20	17.5	13	9	7.5	6.5
Cairo, Ill.:																								
Prior to 1914	90	78	60	42	36	30	65	56.5	43.5	30.5	26	21.5	25	21.5	16.5	11.5	10	8.5	10	8.5	6.5	4.5	4	3.5
5 per cent increase, 1914	94.6	82	63	44.2	37.8	31.6	68.8	59.8	46	32.3	27.5	22.8	25.8	22.2	17	11.9	10.3	8.8	10	8.5	6.5	4.5	4	3.5
15 per cent increase, 1917	108	95	72	50.5	43	36	68.6	59.4	45.7	32	27.4	22.9	39.4	35.6	26.3	18.5	15.6	13.1	10.2	8.9	6.8	4.8	4.1	3.4
G. O. 28, 25 per cent increase, 1918	135	119	90	63	54	45	86	74.5	57	40	34.5	28.5	49	44.5	33	23	19.5	16.5	12.5	11	8.5	6	5	4.5
Adjustment, December, 1919	135	119	90	63	54	45	102.5	90.5	68.5	48	41	34	32.5	28.5	21.5	15	13	11	10	8.5	6.5	4.5	4	3.5
Ex parte 74, August, 1920	189	166	126	88	75.5	63	128	113	85.5	60	51.5	42.5	61	53	40.5	28	24	20.5	22	19	14.5	10	8.5	7.5
Reduced rates, 1922	170.5	149.5	113.5	79	68	57	115	101.5	77	54	46.5	38.5	54.5	48	36.5	25	20	18.5	20	17.5	13	9	7.5	6.5

[1] Differences, Gulf ports *over* New York.

Comparison of import all rail rates in carloads from New York and from Gulf ports.

BANANAS.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

To—	From New York.	From Gulf ports when from South America and Central America, etc.	Differential Gulf rate under New York.	From Gulf ports when from Europe and Africa.	Differential Gulf rate under New York.
Chicago, Ill.:					
Prior to 1914	44	46	+2	46	+2
5 per cent increase, 1914	46.2	48	+1.8	48	+1.8
15 per cent increase, 1917	53	48	5	48	5
G. O. 28, 1918	66.5	60	6.5	60	6.5
Adjustment, December, 1919	66.5	66.5	0	66.5	0
Ex parte 74, 1920	93	88.5	4.5	88.5	4.5
Reduced rates, 1922	83.5	79.5	4	75.5	8
Milwaukee, Wis.:					
Prior to 1914	44	50	+6	50	+6
5 per cent increase, 1914	46.2	52	+5.8	52	+5.8
15 per cent increase, 1917	53	52	1	52	1
G. O. 28, 1918	66.5	65	1.5	65	1.5
Adjustment, December, 1919	66.5	71.5	+5	71.5	+5
Ex parte 74, 1920	93	95.5	+2.5	95.5	+2.5
Reduced rates, 1922	83.5	86	+2.5	75.5	8
Peoria, Ill.:					
Prior to 1914	48	43	5	43	5
5 per cent increase, 1914	50.8	45.8	5	45.8	5
15 per cent increase, 1917	58.5	45.8	13	45.8	13
G. O. 28, 1918	73	57.5	15.5	57.5	15.5
Adjustment, December, 1919	73	82.5	+9.5	70.5	2.5
Ex parte 74, 1920	102	110	+8	94	8
Reduced rates, 1922	92.5	79.5	13	79.5	13
St. Louis, Mo.:					
Prior to 1914	51	43	8.8	43	8.8
5 per cent increase, 1914	54.1	45	9.1	45	9.1
15 per cent increase, 1917	62	45	17	45	17
G. O. 28, 1918	77.5	56.5	11	56.5	11
Adjustment, December, 1919	78	62.5	15.5	62.5	15.5
Ex parte 74, 1920	109	83.5	25.5	83.5	25.5
Reduced rates, 1922	98	75	23	75	23
Cincinnati, Ohio:					
Prior to 1914	44	42	2	42	2
5 per cent increase, 1914	45.7	44	1.7	44	1.7
15 per cent increase, 1917	52	44	8	44	8
G. O. 28, 1918	65	55	10	55	10
Adjustment, December, 1919	65.5	61.5	4	61.5	4
Ex parte, 74, 1920	91.5	77	14.5	77	14.5
Reduced rates, 1922	82.5	69.5	13	60.5	22
Louisville, Ky.:					
Prior to 1914	44	39	5	39	5
5 per cent increase, 1914	46.2	41	5.2	41	5.2
15 per cent increase, 1917	53	41	12	41	12
G. O. 28, 1918	66.5	51.5	15	51.5	15
Adjustment, December, 1919	66.5	57.5	9	57.5	9
Ex parte 74, 1920	93	72	21	72	21
Reduced rates, 1922	83.5	65	18.5	65	18.5
Evansville, Ind.:					
Prior to 1914	48	43	5	43	5
5 per cent increase, 1914	50.8	45.8	5	45.8	5
15 per cent increase, 1917	58.5	45.8	13	45.8	13
G. O. 28, 1918	73	57.5	15.5	57.5	15.5
Adjustment, December, 1919	73	82.5	+9.5	70.5	2.5
Ex parte 74, 1920	102	103	+1	88	15
Reduced rates, 1922	92.5	65	27.5	65	27.5
Cairo, Ill.:					
Prior to 1914	53	39	14	39	14
5 per cent increase, 1914	55.4	41	14.4	41	14.4
15 per cent increase, 1917	63.5	41	22.5	41	22.5
G. O. 28, 1918	79.5	51.5	28	51.5	28
Adjustment, December, 1919	80	57.5	22.5	57.5	22.5
Ex parte 74, 1920	111.5	72	39.5	72	39.5
Reduced rates, 1922	100.5	65	35.5	65	35.5

Comparison of import all rail rates in carloads from New York and from Gulf ports—Continued.

BURLAP.

To—	From New York.	From Gulf ports when from South America and Central America, etc.	Differential Gulf rate under New York.	From Gulf ports when from Europe and Africa.	Differential Gulf rate under New York.
Chicago, Ill.:					
Prior to 1914	30	14	16	14	16
5 per cent increase, 1914	31.5	16	15.5	16	15.5
15 per cent increase, 1917	30	16	14	16	14
G. O. 28, 1918	37.5	20	17.5	20	17.5
Adjustment, 1919	37.5	31.5	6	31.5	6
Ex parte 74, 1920	52.5	42	10.5	42	10.5
Reduced rates, 1922	44	38	6	38	6
Milwaukee, Wis.:					
Prior to 1914	30	14	16	14	16
5 per cent increase, 1914	31.5	16	15.5	16	15.5
15 per cent increase, 1917	30	16	14	16	14
G. O. 28, 1918	37.5	20	17.5	20	17.5
Adjustment, 1919	37.5	31.5	6	31.5	6
Ex parte 74, 1920	52.5	42	10.5	42	10.5
Reduced rates, 1922	44	38	6	38	6
Peoria, Ill.:					
Prior to 1914	33	16	17	16	17
5 per cent increase, 1914	34.7	16	18.7	16	18.7
15 per cent increase, 1917	33	16	17	16	17
G. O. 28, 1918	41.5	20	21.5	20	21.5
Adjustment, 1919	41.5	31.5	10	31.5	10
Ex parte 74, 1920	58	42	16	42	16
Reduced rates, 1922	44	38	6	38	6
St. Louis, Mo.:					
Prior to 1914	35	16	19	16	19
5 per cent increase, 1914	36.9	16	20.9	16	20.9
15 per cent increase, 1917	35	16	19	16	19
G. O. 28, 1918	44	20	24	20	24
Adjustment, 1919	44	31.5	13.5	31.5	13.5
Ex parte 74, 1920	61.5	42	19.5	42	19.5
Reduced rates, 1922	44	38	6	38	6
Cincinnati, Ohio:					
Prior to 1914	30	14	16	14	16
5 per cent increase, 1914	31.5	15	16.5	15	16.5
15 per cent increase, 1917	26	15	11	15	11
G. O. 28, 1918	32.5	19	13.5	19	13.5
Adjustment, 1919	32.5	26.5	6	26.5	6
Ex parte 74, 1920	46.5	39.5	6	36	9.5
Reduced rates, 1922	38.5	35.5	3	32.5	6
Louisville, Ky.:					
Prior to 1914	30	14	16	14	16
5 per cent increase, 1914	31.5	16	15.5	16	15.5
15 per cent increase, 1917	30	16	14	16	14
G. O. 28, 1918	37.5	20	17.5	20	17.5
Adjustment, 1919	37.5	31.5	6	31.5	6
Ex parte 74, 1920	52.5	39.5	13	39.5	13
Reduced rates, 1922	44	35.5	8.5	35.5	8.5
Evansville, Ind.:					
Prior to 1914	33	16	17	16	17
5 per cent increase, 1914	34.7	16	18.7	16	18.7
15 per cent increase, 1917	33	16	17	16	17
G. O. 28, 1918	41.5	20	21.5	20	21.5
Adjustment, 1919	41.5	31.5	10	31.5	10
Ex parte 74, 1920	58	39.5	18.5	39.5	18.5
Reduced rates, 1922	44	35.5	8.5	35.5	8.5
Cairo, Ill.:					
Prior to 1914	36	18	18	18	18
5 per cent increase, 1914	37.8	19.2	18.6	19.2	18.6
15 per cent increase, 1917	36	19.2	16.8	19.2	16.8
G. O. 28, 1918	45	24	21	24	21
Adjustment, 1919	45	31.5	13.5	31.5	13.5
Ex parte 74, 1920	63	39.5	23.5	39.5	23.5
Reduced rates, 1922	53	35.5	17.5	35.5	17.5

Comparison of import all rail rates in carloads from New York and from Gulf ports—Continued.

COFFEE.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

To—	From New York.	From Gulf ports when from South America and Central America, etc.	Differential Gulf rate under New York.	From Gulf ports when from Europe and Africa.	Differential Gulf rate under New York.
Chicago, Ill.:					
Prior to 1914	30	25	5	25	5
5 per cent increase, 1914	31.5	26.5	5	26.5	5
15 per cent increase, 1917	36	25	11	25	11
G. O. 28, 1918	45	31.5	13.5	31.5	13.5
Adjustment, 1919	45	45	0	45	0
Ex parte 74, 1920	63	60	3	60	3
Reduced rates, 1922	56.5	54	2.5	47	9.5
Milwaukee, Wis.:					
Prior to 1914	30	27	3	27	3
5 per cent increase, 1914	31.5	28.5	3	28.5	3
15 per cent increase, 1917	36	27	9	27	9
G. O. 28, 1918	45	34	11	34	11
Adjustment, 1919	45	47	+2	47	+2
Ex parte 74, 1920	63	62.5	0.5	62.5	0.5
Reduced rates, 1922	56.5	54	2.5	47	9.5
Peoria, Ill.:					
Prior to 1914	33	27	6	27	6
5 per cent increase, 1914	34.7	28.7	6	28.7	6
15 per cent increase, 1917	39.5	28.7	10.8	28.7	10.8
G. O. 28, 1918	49.5	36	13.5	36	13.5
Adjustment, 1919	49.5	49.5	0	43.5	6
Ex parte 74, 1920	69.5	66	3.5	58	11.5
Reduced rates, 1922	62	54	8	52	10
St. Louis, Mo.:					
Prior to 1914	35	23	12	23	12
5 per cent increase, 1914	36.9	24.5	12.4	24.5	12.4
15 per cent increase, 1917	42	23	19	23	19
G. O. 28, 1918	52.5	29	23.5	29	23.5
Adjustment, 1919	52.5	43	9.5	43	9.5
Ex parte 74, 1920	73.5	57.5	16	57.5	16
Reduced rates, 1922	66	52	14	66	14
Cincinnati, Ohio:					
Prior to 1914	26	25	1	25	1
5 per cent increase, 1914	27.4	26.5	0.9	26.5	0.9
15 per cent increase, 1917	31.5	25	6.5	25	6.5
G. O. 28, 1918	39.5	31.5	8	31.5	8
Adjustment, 1919	39.5	45	+5.5	45	+5.5
Ex parte 74, 1920	55	60	+5	60	+5
Reduced rates, 1922	49	44	5	37.5	11.5
Louisville, Ky.:					
Prior to 1914	30	23	7	23	7
5 per cent increase, 1914	31.5	24.5	7	24.5	7
15 per cent increase, 1917	36	23	13	23	13
G. O. 28, 1918	45	29	16	29	16
Adjustment, 1919	45	43	2	43	2
Ex parte 74, 1920	63	57.5	5.5	57.5	5.5
Reduced rates, 1922	56.5	51	5.5	44	12.5
Evansville, Ind.:					
Prior to 1914	33	27	6	27	6
5 per cent increase, 1914	34.7	28.7	6	28.7	6
15 per cent increase, 1917	39.5	28.7	10.8	28.7	10.8
G. O. 28, 1918	49.5	36	13.5	36	13.5
Adjustment, 1919	49.5	49.5	0	43.5	6
Ex parte 74, 1920	69.5	62	7.5	54.5	15
Reduced rates, 1922	62	51	11	44	18
Cairo, Ill.:					
Prior to 1914	35	23	12	23	12
5 per cent increase, 1914	37.8	24.5	13.3	24.5	13.3
15 per cent increase, 1917	43	23	20	23	20
G. O. 28, 1918	54	29	25	29	25
Adjustment, 1919	54	41.5	12.5	41.5	12.5
Ex parte 74, 1920	75.5	52	23.5	52	23.5
Reduced rates, 1922	68	47	21	47	21

Comparison of import all rail rates in carloads from New York and from Gulf ports—Continued.

SUGAR.

[Rates in cents per 100 pounds. In effect Oct. 1. 1923.]

To—	From New York.	From Gulf ports when from South America and Central America, etc.	Differential Gulf rate under New York.	From Gulf ports when from Europe and Africa.	Differential Gulf rate under New York.
Chicago, Ill.:					
Prior to 1914	26	23	3	23	3
5 per cent increase, 1914	27.3	24.3	3	24.3	3
15 per cent increase, 1917	31.5	24.3	7.2	24.3	7.2
G. O. 28, 1918	39.5	45	+5.5	45	+5.5
Adjustment, 1919	45	45	0	45	0
Ex parte 74, 1920	63	60	3	60	3
Reduced rates, 1922	56.5	54	2.5	47	9.5
Milwaukee, Wis.:					
Prior to 1914	26	24	2	24	2
5 per cent increase, 1914	27.3	25.3	2	25.3	2
15 per cent increase, 1917	31.5	25.3	6.2	25.3	6.2
G. O. 28, 1918	39.5	46	+6.5	46	+6.5
Adjustment, 1919	45	46	+1	46	+1
Ex parte 74, 1920	63	61.5	1.5	61.5	1.5
Reduced rates, 1922	56.5	54	2.5	47	9.5
Peoria, Ill.:					
Prior to 1914	29	27	2	27	2
5 per cent increase, 1914	30	28.7	1.3	28.7	1.3
15 per cent increase, 1917	34.5	28.7	5.8	28.7	5.8
G. O. 28, 1918	43	36	7	36	7
Adjustment, 1919	49.5	49.5	0	43.5	6
Ex parte 74, 1920	69.5	66	3.5	58	11.5
Reduced rates, 1922	62	59.5	2.5	52	10
St. Louis, Mo.:					
Prior to 1914	30	17	13	17	13
5 per cent increase, 1914	31.9	18.3	13.6	18.3	13.6
15 per cent increase, 1917	37	18.3	18.7	18.3	18.7
G. O. 28, 1918	46.5	44.5	2	44.5	2
Adjustment, 1919	52.5	44.5	8	44.5	8
Ex parte 74, 1920	73.5	59.5	14	59.5	14
Reduced rates, 1922	66	48.5	17.5	48.5	17.5
Cincinnati, Ohio:					
Prior to 1914	23	18.5	4.5	18.5	4.5
5 per cent increase, 1914	23.8	19.8	4	19.8	4
15 per cent increase, 1917	27.5	19.8	7.7	19.8	7.7
G. O. 28, 1918	34.5	46	+11.5	46	+11.5
Adjustment, 1919	39.5	45	+5.5	45	+5.5
Ex parte 74, 1920	55	56.5	+1.5	56.5	+1.5
Reduced rates, 1922	49	44	5	37.5	11.5
Louisville, Ky.:					
Prior to 1914	26	17	9	17	9
5 per cent increase, 1914	27.3	18.3	9	18.3	9
15 per cent increase, 1917	31.5	18.3	13.2	18.3	13.2
G. O. 28, 1918	39.5	44.5	+5	44.5	+5
Adjustment, 1919	45	44.5	0.5	44.5	0.5
Ex parte 74, 1920	63	55.5	7.5	55.5	7.5
Reduced rates, 1922	56.5	48.5	8	48.5	8
Evansville, Ind.:					
Prior to 1914	29	17	12	17	12
5 per cent increase, 1914	30	18.3	11.7	18.3	11.7
15 per cent increase, 1917	34.5	18.3	16.2	18.3	16.2
G. O. 28, 1918	43	44.5	+1.5	44.5	+1.5
Adjustment, 1919	49.5	44.5	5	44.5	5
Ex parte 74, 1920	69.5	55.5	14	55.5	14
Reduced rates, 1922	62	48.5	13.5	48.5	13.5
Cairo, Ill.:					
Prior to 1914	31	17	14	17	14
5 per cent increase, 1914	32.8	18.3	14.5	18.3	14.5
15 per cent increase, 1917	38	18.3	19.7	18.3	19.7
G. O. 28, 1918	47.5	39	8.5	39	8.5
Adjustment, 1919	54	41.5	12.5	41.5	12.5
Ex parte 74, 1920	75.5	52	23.5	52	23.5
Reduced rates, 1922	68	47	21	47	21

Import all-rail class rates from South Atlantic and Gulf ports.

TO CHICAGO.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

From—	Classification.[1]	Classes. 1	2	3	4	5	6
New York	O	142	124½	94½	66	56½	47½
Wilmington, Charleston, Savannah, Brunswick, Jacksonville	O	125½	109½	86½	59½	50½	41½
Pensacola, Mobile, Gulfport, New Orleans	[2] O	135	119	90	63	54	45
	[3] O	113½	97	75½	53½	47	38
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport	[2] O	135	119	90	63	54	45
	[3] O	113½	97	75½	53½	47	38

Tariff authority: Curlett's I. C. C., A 79; C. of Ga. I. C. C., 2460; Southern I. C. C., A 0421; Boyd's I. C. C. A 1349; Leland's I. C. C., 1412.

TO CINCINNATI.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

New York	O	123½	108½	82	57½	49	41
Wilmington, Charleston, Savannah, Brunswick, Jacksonville	O	101½	88	70	47½	40½	33½
Pensacola, Mobile, Gulfport, New Orleans	[2] O	110½	97	74	51½	44	36½
	[3] O	90	76½	60½	42½	37½	29½
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport	[2] O	110½	97	74	51½	44	36½
	[3] O	90	76½	60½	42½	37½	29½

Tariff authority: Curlett's I. C. C., A 79; Southern I. C. C., A 9421; Glenn's I. C. C., A 299; Boyd's I. C. C., A 1349; Leland's I. C. C., 1412.

TO CLEVELAND.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

New York	O	101	88½	67	47	40	33½
Wilmington, Charleston, Savannah, Brunswick, Jacksonville (no through rates published).							
Pensacola, Mobile, Gulfport, New Orleans	O	222	189	155½	134	107	89
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport (no through rates published).							

Tariff authority: Curlett's I. C. C., A 79; Emerson's I. C. C., 68.

TO PITTSBURGH.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

New York	O	85	74½	56½	39½	34	28½
Wilmington	O	164	141½	115	88	72	58½
Charleston	O	186½	160	141½	119	97	80
Savannah, Brunswick, Jacksonville	O	196	168½	149½	126	101½	84½
Pensacola, Mobile, Gulfport, New Orleans	O	222	189	155½	134	107	89
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport (no through rates published).							

Tariff authority: Curlett's I. C. C., A 79; Emerson's I. C. C., 68; Cottrell's I. C. C., 432; Speiden's I. C. C., 488.

Import all-rail class rates from South Atlantic and Gulf ports—Continued.

TO ST. LOUIS.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

New York	O	166	145½	110½	77	66	55½
Wilmington, Charleston, Savannah, Brunswick, Jacksonville	O	148	129½	102	70	59½	49
Pensacola, Mobile, Gulfport, New Orleans	[2] O	158	139	106	74	63	53½
	[4] O	136½	117½	91½	64½	56	45½
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport	[2] O	158	139	106	74	63	53½
	[4] O	136½	117½	91½	64½	56	45½

[1] Indicates official classification.
[2] Applies on traffic imported from Asia, Australia, New Zealand, Central America, South America, and Philippine Islands.
[3] Applies only on traffic imported from Europe and Africa.
[4] Applies only on traffic imported from Europe.

Tariff authority: Curlett's I. C. C., A 79; Southern I. C. C., A 9421; C. of Ga. I. C. C., 2460; Seaboard Air Line I. C. C., 6872; Leland's I. C. C., 1412; Boyd's I. C. C., A 1349.

Import commodity rates from Gulf ports, to central and western points.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

To—	Grape fruit, limes, lemons, oranges, pineapples, tangerines.	Molasses, value restr. to 8 c. gal.[1]	Ixtle or sisal.	Nitrate of soda.	Potatoes.	Dried beans.
Ardmore, Okla	124.5			46.5		
Atchison, Kans	97.5	33.5	57		65	57
Bloomington, Ill	72			39.5		
Buffalo, N. Y	83				80.5	
Cairo, Ill	58		35	37.5		
Cedar Rapids, Iowa	97.5	37				
Chicago, Ill	72		39	39.5	54	45
Cincinnati, Ohio	62		36.5	37.5	51	
Cleveland, Ohio	72		45		74.5	
Colorado Springs, Colo	142.5			56.5	87	
Council Bluffs, Iowa	104	37			68	
Davenport, Iowa	87	36.5				
Detroit, Mich	72				74.5	
Enid, Okla	110			46.5		
Indianapolis, Ind	72		39	39.5	54	45
Kansas City, Mo	97.5	33.5	45		72	57
Louisville, Ky	58		35	37.5	51	
Milwaukee, Wis	72		43.5	39.5		48
Pittsburgh, Pa	83				80.5	
St. Joseph, Mo	97.5	33.5	57		65	57
St. Louis, Mo	68	26	35.5	39.5	54	39
St. Paul, Minn	105	45.5	58	57.5	79.5	
Sioux City, Iowa	104		64.5		77	65
Toledo, Ohio	72		45		74.5	

[1] Apples only at Galveston, Houston, Texas City and New Orleans.

Tariff authority: Gulf Foreign Freight Com. 1017-C, Agent Boyd's I. C. C. No. A 1349.

Import commodity rates from Gulf ports to central western points.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

	To—						
	Cincinnati.	Indianapolis.	Chicago.	Louisville.	Peoria.	St. Louis.	St. Paul.
Bags and bagging:							
A	35.5	38	38	35.5	38	38	59.5
B	35.5	38	38	35.5	38	38	59.5
Clay:							
A	29.5	34	36	34	39.5	38	42
B	23	26.5	29	27	32.5	34.5	41
Kainit:							
A	31	35.5	36	28.5	35.5	30	42
B	26	29.5	32.5	28.5	35.5	30	42
Oil, palm, copra, peanut, cocoanut, soya bean:							
A	34	41	41	31	41	33	52.5
B	29.5	34.5	38	31	41	33	52.5
Oil, creosote:							
A	42	47.5	51	47.5	56.5	52.5	65
B	35	40	43.5	41	49	52.5	62.5
Soda, viz: Ash, bicarbonate, bisulphite, caustic, hyposulphite, phosphate, sal silicate sulphate, sulphate lime:							
A	33	36.5	39.5	37.5	43.5	47	59.5
B	26	29.5	33	30.5	36.5	39.5	52

	To—				
	Kansas City.	Omaha.	Sioux City.	Sioux Falls.	Lincoln.
Bags and bagging, A and B	52.5	59	60	61.5	63.5
Clay, A and B	34.5	39	42	45	43.5
Kainit, A and B	34.5	39	42	45	43.5
Oil, copra, A and B	45	50	52.5	56	54
Oil, creosote, A and B	45				
Soda, ash—Caustic, crystals silicate:					
A	57	61.5	65	66.5	66
B	57	57.5	57.5	59.5	61

Tariff authority: Gulf Foreign Freight Com. No. 1017-C, Agent Boyd's I. C. C. No. A-1349.

Class rates on import and export traffic between western points and Gulf and Texas ports.

(Including Algiers, La.; Gretna, La.; Harvey, La.; New Orleans, La.; Westwego, La.; Gulfport, Miss.; Mobile, Ala.; Pensacola, Fla.; Beaumont, Tex.; Freeport, Tex.; Galveston, Tex.; Houston, Tex.; Orange, Tex.; Port Arthur, Tex.; Texas City, Tex.)

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

GOVERNED BY WESTERN CLASSIFICATION.

Import rates to—	Classes.				
	1	2	3	4	5
Kansas City, Mo.	165	128	97.5	79.5	57
Omaha, Nebr.	173	135	104	86	67.5
Sioux City, Iowa	180	142.5	110	88.5	65
Sioux Falls, S. Dak.	187.5	150	115.5	91.5	88
Lincoln, Nebr.	180	142.5	110	92	66

GOVERNED BY SOUTHERN CLASSIFICATION.

Export rates from—	Classes.					
	1	2	3	4	5	6
Kansas City, Mo.	173	142.5	115.5	90	70.5	63
Omaha, Nebr.	198	160.5	126	101	78	70.5
Sioux City, Iowa	198	160.5	126	101	78	70.5
Sioux Falls, S. Dak.[1]	.....	.....	.....	.....	.....	.....
Lincoln, Nebr.	205.5	168	132	106.5	83	75

[1] No through rates published.

Tariff authority:
Gulf Foreign Freight Committee No. 1017, Agent E. B. Boyd's I. C. C. A-1349.
Gulf Foreign Freight Committee No. 1016-B, Agent E. B. Boyd's I. C. C. A-1381.

Comparison of rates to New York and Gulf ports for export.

AGRICULTURAL IMPLEMENTS.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

From—	To New York.	To Gulf ports when for South America and Central America, etc.	Differential Gulf rate under New York.	To Gulf ports when for Europe and Africa.	Differential Gulf rate under New York.
Chicago, Ill.:					
Prior to 1914	28	22	6	22	6
5 per cent increase, 1914	28	22	6	22	6
15 per cent increase, 1917	36	25.5	10.5	25.5	10.5
G. O. 28, increase, 1918	45	32	13	32	13
Adjustment, December, 1919	45	45	.....	39	6
Ex parte 74, August, 1920	63	60	3	52	11
Reduced rates, 1922	56.5	47.5	9	41.5	15
Milwaukee, Wis.:					
Prior to 1914	28	22	6	22	6
5 per cent increase, 1914	28	22	6	22	6
15 per cent increase, 1917	36	25.5	10.5	25.5	10.5
G. O. 28, increase, 1918	45	32	13	32	13
Adjustment, December, 1919	45	45	.....	39	6
Ex parte 74, August, 1920	63	60	3	52	11
Reduced rates, 1922	56.5	47.5	9	41.5	15
Peoria, Ill.:					
Prior to 1914	31	22	9	(1)	.....
5 per cent increase, 1914	31	22	9	(1)	.....
15 per cent increase, 1917	39.5	25.5	14	25.5	14
G. O. 28, increase, 1918	49.5	32	17.5	32	17.5
Adjustment, December, 1919	49.5	44	5.5	39	10.5
Ex parte 74, August, 1920	69.5	58.5	11	52	17.5
Reduced rates, 1922	62	47	15	41.5	20.5
St. Louis, Mo.:					
Prior to 1914	29	22	7	(1)	.....
5 per cent increase, 1914	33	22	11	(1)	.....
15 per cent increase, 1917	42	25.5	16.5	(1)	.....
G. O. 28, increase, 1918	52.5	32	20.5	(1)	.....
Adjustment, December, 1919	52.5	39	13.5	39	13.5
Ex parte 74, August, 1920	73.5	52	21.5	52	21.5
Reduced rates, 1922	66	43	23	41	25
Cincinnati, Ohio:					
Prior to 1914	24.5	22	2.5	(1)	.....
5 per cent increase, 1914	24.5	22	2.5	(1)	.....
15 per cent increase, 1917	31.5	25.5	6	27.4	4.1
G. O. 28, increase, 1918	39	32	7	34.5	4.5
Adjustment, December, 1919	39	39	.....	39	.....
Ex parte 74, August, 1920	55	49	6	49	6
Reduced rates, 1922	49	40	9	38.5	10.5
Louisville, Ky.:					
Prior to 1914	28	22	6	(1)	.....
5 per cent increase, 1914	28	22	6	(1)	.....
15 per cent increase, 1917	36	25.5	10.5	(1)	.....
G. O. 28, increase, 1918	45	32	13	(1)	.....
Adjustment, December, 1919	45	39	6	39	6
Ex parte 74, August, 1920	63	49	14	49	14
Reduced rates, 1922	56.5	40	16.5	38.5	18
Evansville, Ind.:					
Prior to 1914	29.5	22	7.5	(1)	.....
5 per cent increase, 1914	29.5	22	7.5	(1)	.....
15 per cent increase, 1917	38	25.5	12.5	(1)	.....
G. O. 28, increase, 1918	47.5	32	15.5	(1)	.....
Adjustment, December, 1919	47.5	36.5	11	36.5	11
Ex parte 74, August, 1920	66	45.5	20.5	45.5	20.5
Reduced rates, 1922	59.5	40	19.5	38.5	21
Cairo, Ill.:					
Prior to 1914	30	22	8	(1)	.....
5 per cent increase, 1914	33.5	22	11.5	(1)	.....
15 per cent increase, 1917	43	25.5	17.5	(1)	.....
G. O. 28, increase, 1918	54	32	22	(1)	.....
Adjustment, December, 1919	54	31.5	22.5	31.5	22.5
Ex parte 74, August, 1920	75.5	39.5	36	39.5	36
Reduced rates, 1922	68	40	28	38.5	29.5

[1] No export rate.

Comparison of rates to New York and Gulf ports for export—Continued.

MANUFACTURED IRON AND STEEL ARTICLES.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

From—	To New York.	To Gulf ports when for South America and Central America, etc.	Differential Gulf rate under New York.	To Gulf ports when for Europe and Africa.	Differential Gulf rate under New York.
Chicago, Ill.:					
Prior to 1914	20	17	3	17	3
5 per cent increase, 1914	21	18	3	18	3
15 per cent increase, 1917	32.5	25.2	7.3	25.2	7.3
G. O. 28, increase, 1918	45	31.5	13.5	31.5	13.5
Adjustment, December, 1919	45	35	10	35	10
Ex parte 74, August, 1920	63	60	3	52	11
Reduced rates, 1922	56.5	42	14.5	42	14.5
Milwaukee, Wis.:					
Prior to 1914	20	20	.....	(1)	.....
5 per cent increase, 1914	21	21	.....	(1)	.....
15 per cent increase, 1917	32.5	28.2	4.3	25.2	7.3
G. O. 28, increase, 1918	45	35.5	9.5	31.5	13.5
Adjustment, December, 1919	45	37.5	7.5	37.5	7.5
Ex parte 74, December, 1920	63	60	3	52	11
Reduced rates, 1922	56.5	45	11.5	45	11.5
Peoria, Ill.:					
Prior to 1914	22	20	2	(1)	.....
5 per cent increase, 1914	23.1	21	2.1	(1)	.....
15 per cent increase, 1917	36	25	11	25.2	10.8
G. O. 28, increase, 1918	49.5	31.5	18	31.5	18
Adjustment, December, 1919	49.5	31.5	18	31.5	18
Ex parte 74, August, 1920	69.5	58.5	11	52	17.5
Reduced rates, 1922	62	38	24	38	24
St. Louis, Mo.:					
Prior to 1914	23.5	17.5	6	(1)	.....
5 per cent increase, 1914	24.6	18.3	6.3	(1)	.....
15 per cent increase, 1917	38	22	16	22	16
G. O. 28, increase, 1918	52.5	27.5	25	27.5	25
Adjustment, December, 1919	52.5	27.5	25	27.5	25
Ex parte 74, December, 1920	73.5	52	21.5	52	21.5
Reduced rates, 1922	66	33	33	33	33
Cincinnati, Ohio:					
Prior to 1914	17.5	17.5	.....	(1)	.....
5 per cent increase, 1914	18.3	18.3	.....	(1)	.....
15 per cent increase, 1917	28.5	21.5	7	24	4.5
G. O. 28, increase, 1918	39	27	12	30	9
Adjustment, December, 1919	39	30	9	30	9
Ex parte 74, August, 1920	55	49	6	49	6
Reduced rates, 1922	49	34	15	34	15
Louisville, Ky.:					
Prior to 1914	20	17.5	2.5	(1)	.....
5 per cent increase, 1914	21	18.3	2.7	(1)	.....
15 per cent increase, 1917	32.5	22	10.5	(1)	.....
G. O. 28, increase, 1918	45	27.5	17.5	(1)	.....
Adjustment, December, 1919	45	27.5	17.5	27.5	17.5
Ex parte 74, December, 1920	63	49	14	49	14
Reduced rates, 1922	56.5	31	25.5	31	25.5
Evansville, Ind.:					
Prior to 1914	21	17.5	3.5	(1)	.....
5 per cent increase, 1914	22	18.3	3.7	(1)	.....
15 per cent increase, 1917	34	20	14	(1)	.....
G. O. 28, increase, 1918	47.5	25	22.5	(1)	.....
Adjustment, December, 1919	47.5	25	22.5	25	22.5
Ex parte 74, December. 1920	66	45.5	20.5	45.5	20.5
Reduced rates, 1922	59.5	28.5	31	28.5	31
Cairo, Ill.:					
Prior to 1914	24	15	9	(1)	.....
5 per cent increase, 1914	25.2	16	9.2	(1)	.....
15 per cent increase, 1917	39	17	22	(1)	.....
G. O. 28, increase, 1918	54	21.5	32.5	(1)	.....
Adjustment, December, 1919	54	21.5	32.5	21.5	32.5
Ex parte 74, December, 1920	75.5	39.5	36	39.5	36
Reduced rates, 1922	68	24.5	43.5	24.5	43.5

[1] No export rate.

Comparison of rates to New York and Gulf ports for export—Continued.

IRON AND STEEL BILLETS.

[Rates per gross ton. In effect Oct. 1, 1923.]

From—	To New York.	To Gulf ports when for South America and Central America, etc.	Differential Gulf rate under New York.	To Gulf ports when for Europe and Africa.	Differential Gulf rate under New York.
Chicago, Ill.:					
Prior to 1914	$3.35	$2.75	$0.60	$2.75	$0.60
5 per cent increase, 1914	3.52	2.92	.60	2.92	.60
15 per cent increase, 1917	5.30	4.00	1.30	4.00	1.30
G. O. 28 increase, 1918	7.50	5.00	2.50	5.00	2.50
Adjustment, December, 1919	7.50	7.50	.....	6.30	1.20
Ex parte 74, August, 1920	10.50	10.00	.50	8.40	2.10
Reduced rates, 1922	9.50	9.00	.50	7.56	1.94
Milwaukee, Wis.:					
Prior to 1914	3.35	3.35	.....	(1)	.....
5 per cent increase, 1914	3.52	3.52	.....	(1)	.....
15 per cent increase, 1917	5.30	4.60	.70	4.00	1.30
G. O. 28, increase, 1918	7.50	5.80	1.70	5.00	2.50
Adjustment, December, 1919	7.50	7.50	.....	6.30	1.20
Ex parte 74, August, 1920	10.50	10.00	.50	8.40	2.10
Reduced rates, 1922	9.50	9.00	.50	7.56	1.94
Peoria, Ill.:					
Prior to 1914	3.70	3.35	.35	(1)	.....
5 per cent increase, 1914	3.87	3.52	.35	(1)	.....
15 per cent increase, 1917	5.80	4.60	1.20	4.00	1.80
G. O. 28, increase, 1918	8.30	5.80	2.50	5.00	3.30
Adjustment, December, 1919	8.30	7.10	1.20	6.30	2.00
Ex parte 74, August, 1920	11.60	9.465	1.695	8.40	3.22
Reduced rates, 1922	10.50	8.52	1.98	7.56	2.94
St. Louis, Mo.:					
Prior to 1914	3.90	2.90	1.00	(1)	.....
5 per cent increase, 1914	4.12	3.06	1.06	(1)	.....
15 per cent increase, 1917	6.20	4.14	2.06	4.00	2.20
G. O. 28, increase, 1918	8.80	5.20	3.60	5.00	3.80
Adjustment, December, 1919	8.80	6.20	2.60	6.20	2.60
Ex parte 74, August, 1920	12.30	8.265	4.055	8.265	4.055
Reduced rates, 1922	11.10	7.44	3.66	7.44	3.66
Cincinnati, Ohio:					
Prior to 1914	2.90	2.90	.....	(1)	.....
5 per cent increase, 1914	3.06	3.06	.....	(1)	.....
15 per cent increase, 1917	4.60	4.14	.46	4.00	.60
G. O. 28, increase, 1918	6.50	5.20	1.30	5.00	1.50
Adjustment, December, 1919	6.50	6.50	.....	6.30	.20
Ex parte 74, August, 1920	9.10	8.125	.975	7.875	1.325
Reduced rates, 1922	8.20	7.31	.89	7.09	1.11
Louisville, Ky.:					
Prior to 1914	3.35	2.90	.45	(1)	.....
5 per cent increase, 1914	3.52	3.06	.46	(1)	.....
15 per cent increase, 1917	5.30	4.14	1.16	4.00	1.30
G. O. 28, increase, 1918	7.50	5.20	2.30	5.00	2.50
Adjustment, December, 1919	7.50	6.20	1.30	6.20	1.30
Ex parte 74, August, 1920	10.50	7.75	2.75	7.75	2.75
Reduced rates, 1922	9.50	6.98	2.52	6.98	2.52
Evansville, Ind.:					
Prior to 1914	3.50	2.90	.60	(1)	.....
5 per cent increase, 1914	3.70	3.06	.64	(1)	.....
15 per cent increase, 1917	5.60	4.14	1.46	(1)	.....
G. O. 28, increase, 1918	7.90	5.20	2.70	(1)	.....
Adjustment, December, 1919	7.90	5.60	2.30	5.60	2.30
Ex parte 74, August, 1920	11.00	7.00	4.06	7.00	4.06
Reduced rates, 1922	9.90	6.30	3.60	6.30	3.60
Cairo, Ill.:					
Prior to 1914	4.00	2.50	1.50	(1)	.....
5 per cent increase, 1914	4.22	2.67	1.55	(1)	.....
15 per cent increase, 1917	6.40	3.75	2.65	(1)	.....
G. O. 28, increase, 1918	9.00	4.70	4.30	(1)	.....
Adjustment, December, 1919	9.00	4.80	4.20	4.80	4.20
Ex parte 74, August, 1920	12.60	6.00	6.60	6.00	6.60
Reduced rates, 1922	11.40	5.40	6.00	5.40	6.00

[1] No export rate.

Comparison of rates to New York and Gulf ports for export—Continued.

PACKING HOUSE PRODUCTS.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

From—	To New York.	To Gulf ports when for South America and Central America, etc.	Differential Gulf rate under New York.	To Gulf ports when for Europe and Africa.	Differential Gulf rate under New York.
Chicago, Ill.:					
Prior to 1914	35	24	11	20	15
5 per cent increase, 1914	36.8	25.5	11.3	21.5	15.8
15 per cent increase, 1917	42	28.5	13.5	21.5	20.5
G. O. 28, increase, 1918	52.5	35.5	17.5	27	25.5
Adjustment, December, 1919	52.5	42	10.5	42	10.5
Ex parte 74, August, 1920	73.5	56	17.5	56	17.5
Reduced rates, 1922	66	50.5	15.5	50.5	15.5
Milwaukee, Wis.:					
Prior to 1914	35	26	9	23	12
5 per cent increase, 1914	36.8	27.5	9.3	24.5	12.3
15 per cent increase, 1917	42	28.5	13.5	21.5	20.5
G. O. 28, increase, 1918	52.5	35.5	17	27	25.5
Adjustment, December, 1919	52.5	45	7.5	45	7.5
Ex parte 74, August, 1920	73.5	60	13.5	60	12
Reduced rates, 1922	66	54	12	54	.....
Peoria, Ill.:					
Prior to 1914	38.5	24	14.5	20	18.5
5 per cent increase, 1914	40.5	25.5	15	21.5	19
15 per cent increase, 1917	46	28.5	17.5	21.5	24.5
G. O. 28, increase, 1918	58	35.5	22.5	27	31
Adjustment, December, 1919	58	42	16	42	16
Ex parte 74, August, 1920	81	56	25	56	25
Reduced rates, 1922	72.5	60.5	22	50.5	22
St. Louis, Mo.:					
Prior to 1914	41	20	21	20	21
5 per cent increase, 1914	43.1	21.5	21.6	21.5	21.6
15 per cent increase, 1917	49	24.5	24.5	21.5	27.5
G. O. 28, increase, 1918	61.5	30.5	31	27	34.5
Adjustment, December, 1919	61.5	41.5	20	41.5	20
Ex parte 74, August, 1920	86	55.5	32.5	55.5	32.5
Reduced rates, 1922	77	50	27	50	27
Cincinnati, Ohio:					
Prior to 1914	30.5	20	10.5	20	10.5
5 per cent increase, 1914	32	21.5	10.5	21.5	10.5
15 per cent increase, 1917	38.5	24.5	14	21.5	17
G. O. 28, increase, 1918	45.5	30.5	15	27	18.5
Adjustment, December, 1919	45.5	41.5	4	41.5	4
Ex parte 74, August, 1920	63.5	52	11.5	52	11.5
Reduced rates, 1922	57.5	47	10.5	47	10.5
Louisville, Ky.:					
Prior to 1914	35	20	15	20	15
5 per cent, 1914	36.8	21.5	15.3	21.5	15.3
15 per cent increase, 1917	42	24.5	17.5	21.5	20.5
G. O. 28, increase, 1918	52.5	30.5	22	27	25.5
Adjustment, December, 1919	52.5	41.5	11	41.5	11
Ex parte 74, August, 1920	73.5	52	21.5	52	21.5
Reduced rates, 1922	66	47	19	47	19
Evansville, Ind.:					
Prior to 1914	36.5	20	16.5	20	16.5
5 per cent increase, 1914	38.6	21.5	17.1	21.5	17.1
15 per cent increase, 1917	44	24.5	19.5	21.5	22.5
G. O. 28, increase, 1918	55	30.5	24.5	27	28
Adjustment, December, 1919	55	39	16	39	16
Ex parte 74, August, 1920	77	49	28	49	28
Reduced rates, 1922	69.5	44	25.5	44	25.5

Export all-rail class rates to South Atlantic and Gulf ports.

FROM CHICAGO.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

To—	Classification.[1]	Class. 1	2	3	4	5	6
New York	O	142	124½	94½	66	56½	47½
Wilmington, Charleston, Savannah, Brunswick, Jacksonville	O	135	119	90	63	54	45
Pensacola, Mobile, Gulfport, New Orleans	O	135	119	90	63	54	45
	S	165	135	113	87	70½	61½
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport	O	135	119	90	63	54	45
	S	165	135	113	87	70½	61½

Tariff authority: Speiden's I. C. C. 683; Boyd's I. C. C. 1233; Kelly's I. C. C. 1100.

FROM CINCINNATI.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

New York	O	123½	108½	82	57½	49	41½
Wilmington, Charleston, Savannah, Brunswick, Jacksonville	O	107	93½	70	47½	40½	33½
Pensacola, Mobile, Gulfport, New Orleans	O	115	101½	77	54	46½	38½
	S	137½	117	103	76	62	55½
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport	O	115	101½	77	54	46½	38½
	S	137½	117	103	76	62	55½

Tariff authority: Kelly's I. C. C. 1100; Speiden's I. C. C. 659; Boyd's I. C. C. A 1233.

FROM CLEVELAND.

[Rates in cents per 100 pounds. In effect Oct. 1, 1922.]

New York	O	101	88½	67	47	40	33½
Wilmington, Charleston, Savannah, Brunswick, Jacksonville	O	96	84½	64½	45	38½	32
Pensacola, Mobile, Gulfport, New Orleans	O	96	84½	64½	45	38½	32
	S	174	142½	119	92	74	65
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport	W	284½	243½	199½	174½	138	.....

Tariff authority: Speiden's I. C. C. 683; Boyd's I. C. C. A 1205; Leland's I. C. C. 1521; Kelly's I. C. C. 1100.

FROM PITTSBURGH.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

New York	O	85	75	56½	39½	34	28½
Wilmington	S	164	141½	115	88	72	58½
Charleston	S	186½	160	141½	119	97	80
Savannah, Brunswick, Jacksonville	S	196	168½	149½	126	101½	84½
Pensacola, Mobile, Gulfport, New Orleans	S	174	142½	119	97	74	65
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport	W	299½	259	207	180½	142½	.....

[1] O indicates Official Classification; S indicates Southern Classification; W indicates Western Classification.

Tariff authority: Speiden's I. C. C. 488; Cottrell's I. C. C. 432; Boyd's I. C. C. A 1205; Leland's I. C. C. 1521; Kelly's I. C. C. 1100.

Export all-rail class rates to South Atlantic and Gulf ports—Continued.

FROM ST. LOUIS.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

To—	Classification.[1]	Class.					
		1	2	3	4	5	6
New York	O	166	145½	110½	77	66	55½
Wilmington, Charleston, Savannah, Brunswick, Jacksonville	O	154½	135½	102	70	59½	49
Pensacola, Mobile, Gulfport, New Orleans	O	123	108½	82½	57½	49	41
	S	135	113	97½	75	60	52½
Beaumont, Orange, Port Arthur, Galveston, Houston, Texas City, Freeport	O	123	108½	82½	57½	49	41
	S	135	113	97½	75	60	52½

[1] O indicates Official Classification; S indicates Southern Classification; W indicates Western Classification.

Tariff authority: Speiden's I. C. C. 359; Boyd's I. C. C. A 1233; Kelly's I. C. C. 1100.

Proportional all-rail rates on grain and flour from points named to Gulf ports for export.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

	To Galveston, Houston, Texas City.			To New Orleans, Mobile, Pensacola.		
	Wheat.	Corn.	Flour.	Wheat.	Corn.	Flour.
Minneapolis, Minn.; St. Paul, Minn.; Winona, Minn.; La Crosse, Wis	35.5	34	36.5	[1] 35.5	34	36.5
Sioux City, Iowa	35.5	34	35.5	35.5	34	35.5
Council Bluffs, Iowa; Omaha, Nebr.; So. Omaha, Nebr	31.5	30	31.5	31.5	30	31.5
Atchison, Kans.; Leavenworth, Kans.; Kansas City, Mo.; St. Joseph, Mo	30.5	29	30.5	[2] 30.5	29	30.5
Chicago, Ill	51.5	46.5	59	22.5	22.5	23.5
St. Louis, Mo.; East St. Louis, Ill	33	29.5	33	18	18	18

[1] Does not apply from La Crosse and Winona to Pensacola.
[2] Does not apply to Pensacola.

Tariff authority: M. St. P. & S. S. M. No. 30745, I. C. C. No. 5559; M.-K.-T., No. 4292-E, I. C. C. No. A-5043; Ill. C., No. 14431-B, I. C. C. No. A-9879; Miss. Valley, No. 133-B, I. C. C. No. 717 of F. L. Speiden agent; C. R. I. & P., No. 12150-W, I. C. C. No. C-10970; No. Pac., No. 1258-L, I. C. C. A-5588; C. M. & St. P., No. 13030-F, I. C. C. B-4864; S. W. Lines, No. 32-T, I. C. C. No. 1537 of F. A. Leland, agent; C. B. & Q., No. 37-M, I. C. C. No. 15673.

Export commodity rates from central and western points to Galveston, Houston, and Texas City.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

From—	Lumber.	Agricultural implements.	From—	Lumber.	Agricultural implements.
Chicago, Ill	37.5	41.5	Burlington, Iowa		49.5
Milwaukee, Wis	39.5	41.5	Davenport, Iowa		49.5
Dubuque, Iowa		49.5	Kansas City, Mo	47	
Peoria, Ill	34	41.5	Omaha, Nebr	47	
Springfield, Ill	32.5	41.5	St. Paul, Minn		74
Terre Haute, Ind	32.5	41.5	Mason City, Iowa		65
St. Louis, Mo	30	41	Waterloo, Iowa	47	65
Cincinnati, Ohio	30.5	38.5	Cedar Rapids, Iowa	39.5	57
Louisville, Ky	28.5	38.5	Des Moines, Iowa	47	65
Evansville, Ind	25	38.5	Topeka, Kans	50.5	
Cairo, Ill	21.5	38.5	Fort Dodge, Iowa	47	65
La Crosse, Wis		72	Ottumwa, Iowa	47	65
Elgin, Ill		41.5			

Tariff authority: Gulf Foreign Freight Com. No. 1016-B, Agent Boyd's I. C. C. No. A1381.

Export rates on petroleum and its products from Texas and Oklahoma points to Galveston, Houston, and Texas City.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

To—	Petroleum and its products.	Crude and fuel oil.	To—	Petroleum and its products.	Crude and fuel oil.
Owens, Tex	24.5	24.5	Fort Worth, Tex	20.5	20.5
Grandfield, Okla			Dallas, Tex		
Mangum, Tex			Wichita Falls, Tex		
Brownwood, Tex			San Antonio, Tex		
Uvalde, Tex			Waco, Tex		
Abilene, Tex			Denison, Tex		
Desdemona, Tex			Sherman, Tex		
Jinkrun, Tex			Corsicania, Tex		
Sweetwater, Tex			Waxahachie, Tex		
Menard, Tex					
San Angelo, Tex					
Brady, Tex					

Tariff authority: South Western Lines tariff No. 35-0, Agent Leland's I. C. C. No 1561.

Carload commodity rates from points named to Gulf ports for export.

(Rates apply to shipside at Beaumont, Galveston, Houston, Orange, Port Arthur, Port Neches, South Beaumont, and Texas City.)

[Rates in cents per 100 pounds except where otherwise specified. In effect Oct. 1, 1923.]

Commodities.	From—						
	Cleveland, Lorain.	Pittsburgh, Wheeling.	Youngstown.	Detroit only.	Buffalo.	Huntington.	Detroit, Toledo.
Pig iron, ingot moulds (ton 2,240)	947	1,027	960				
Billets, blooms, ingots, muck bars, etc. (ton 2,240)	1,027	1,080	1,040				
Rail fastenings (ton 2,240)		1,147	1,067				
Machinery (classified fifth class in official classification)				58			
Rails and crossties (ton 2,240)	747	787	774		787	600	
Railway track material, other than rails and crossties	1,107	1,107			1,107		1,107
Hoops, wire, iron, or steel	57	57			57		57
Nails, wire, iron, or steel	57	57			57		57
Wire rods in coils, not drawn (ton 2,240), unfinished		1,080	1,040				
Special iron and steel articles	57	57			57		57
Automobiles, passenger				245			
Automobiles, freight, K. D. crated or boxed				170			

Tariff authority: Central Freight Association No. 15-M, Agent Kelly's I. C. C. 1201.

In view of the importance of the cotton movement through the ports of Galveston, Houston, Texas City, and New Orleans, it has been deemed of interest to include in this report rates from a number of important shipping points in Texas, Arkansas, Oklahoma, and New Mexico. These rates show that, in general, the Texas ports have lower rates than New Orleans on cotton moving from Texas points, but that rates from Oklahoma points are on a parity. While rates from Arkansas are lower to New Orleans, rates from certain shipping points in New Mexico are the same to New Orleans as to

Houston. The relative advantages of these ports for the movement of cotton can not, however, be determined from an examination of the rates. In order to make useful comparisons, it is necessary to take a particular case and determine not only the freight rate but the in-transit privileges, such as compression, concentration, diversion, and to compare the practices of the carriers with respect to absorption of terminal charges and the application of various rules in force affecting the storage and handling of cotton at the ports.

Export rates on cotton, carloads, in bales.

[Rates are stated in cents per 100 pounds. In effect Oct. 30, 1923.]

From—	To—		
	Galveston and Texas City.	Houston.[1]	New Orleans.[2]
Amarillo, Tex	97½	97½	108
Austin, Tex	85½	79½	96
Abilene, Tex	85½	85	96
Denison, Tex	85½	85	96
El Paso, Tex	99	98½	109½
Fort Worth, Tex	85½	85	96
Fort Lyon, Ark	85½	.....	80
Hamlin, Tex	85½	85	96
Kiblah, Ark	85½	.....	80
Laredo, Tex	85½	85	96
Palestine, Tex	84½	79	96
San Antonio, Tex	85½	84	96
Texarkana, Ark.-Tex	85½	85	82
Wichita Falls, Tex	85½	85	96

[1] Where for export the rates shown include wharfage rate of 1½ cents per 100 pounds.
[2] Rates shown to New Orleans apply on both domestic and export business with exceptions as published in tariff.

Tariff authority: Agent Lelands 43-0 I. C. C. 1597.
Rates to Galveston and Texas City for export, include cost of delivery to steamships at those ports. Carriers will absorb wharfage charge of 2 cents per 100 pounds assessed by Galveston Wharf Co. and Texas City Terminal Co. on shipments handled through Galveston and Texas City.

Rates on cotton from points in Oklahoma and New Mexico to Galveston, Houston, Texas City, and New Orleans.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

From—	Domestic.	Exports, shipside delivery.	
	Galveston, Houston, and Texas City.	Houston and New Orleans.	Galveston and Texas City.
Dewey, Okla	101	105.5	106
Tulsa, Okla	101	105.5	106
Blackwell, Okla	106.5	111	111.5
Yale, Okla	101	105.5	106
Davenport Okla	101	105.5	106
Tecumseh, Okla	101	105.5	106
Guthrie, Okla	101	105.5	106
Oklahoma City, Okla	101	105.5	106
Enid, Okla	106.5	111	111.5
Cherokee, Okla	106.5	111	111.5
Tupelo, Okla	101	105.5	106
Ada, Okla	101	105.5	106
Ardmore, Okla	90	94.5	95
Roswell, N. Mex	101	105.5	106
Rincon, N. Mex	110	114.5	115
Las Cruces, N. Mex	110	114.5	115
Ft. Sill, Okla	101	105.5	106
El Reno, Okla	101	105.5	106
Howe, Okla	100.5	105	105.5
Pittsburg, Okla	101	105.5	106
Randolph, Okla	92	96.5	97
Yukon, Okla	101	105.5	106
Warwick, Okla	101	105.5	106

Tariff authority: Southwestern Lines tariff No. 80-E, Agent Leland's I. C. C. No. 1467.

Class rates in southwestern territory.—While, as stated above, rates from Oklahoma points on cotton are generally the same to Houston and New Orleans, it will be noted from the following table that domestic class rates from certain points in Oklahoma are more favorable to the Texas ports:

Comparison of domestic class rates in southwestern territory.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923. Governed by western classification.]

	1	2	3	4	5	A	B	C	D	E
Between New Orleans, La., and—										
Oklahoma City, Okla	213	181	149	128	102	111	85	74½	64	53½
Woodward, Okla	239	202½	158	147½	114½	120	100½	79	67	56½
Enid, Okla	218½	186	154	131½	105½	114½	87½	76½	65½	55
Between Galveston, Houston, and Texas City and—										
Oklahoma City, Okla	170	146	121½	111	87	91½	82	67½	53½	45½
Woodward, Okla	211½	179	152	140	109½	114½	102	83½	67	56½
Enid, Okla	200½	170	142½	130½	103½	108	96	79	62½	53½

Tariff authorities: Agent Leland I. C. C. 1589-90.

Class rates from New York, Philadelphia, and Atlantic seaboard territory to Galveston, Houston, and Texas City via Mallory Line or Morgan Line and connections, covered by western classification.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

To—	From New York and Philadelphia.					From Atlantic seaboard territory.				
	1	2	3	4	5	1	2	3	4	5
Galveston, rail delivery	149	124.5	102.5	87	68.5	180.5	151.5	124.5	102.5	79.5
Galveston, proportional Mallory delivery	138	115.5	95	82	63.5	169.5	142.5	116.5	97.5	74.5
Houston, rail delivery	149	124.5	102.5	87	68.5	180.5	151.5	124.5	102.5	79.5
Houston, proportional	138	115.5	95	82	63.5	169.5	142.5	116.5	97.5	74.5
Texas City, rail delivery	149	124.5	102.5	87	68.5	180.5	151.5	124.5	102.5	79.5

Tariff authority: Sedgman's No. 16-I, I. C. C. No. 153.

Class and commodity rates from Galveston, Tex., to New York via Mallory Line or Morgan Line and connections (governed by western classification).

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

Classes	1	2	3	4	5
Rate	138	115.5	95	82	63.5

Commodities.	Rate to New York, including lighterage.	Rate to New York steamship piers.	Commodities.	Rate to New York, including lighterage.	Rate to New York steamship piers.
Cotton for export, high density (Morgan Line only)	20		Copper bullion		34½
Cotton for export, standard density (Morgan Line only)	32		Rice		39½
Cotton, domestic	35		Rosin	26	
Cottonseed cake	22		Sisal		30
Flour		26¼	Turpentine	43½	
Grain in packages		26¼	Wool		83
Ixtle		30	Iron and steel articles		30
Oil, petroleum, and its products, classified fifth class in western classification		56½	Sulphur in bags (Morgan Line only)	25	22
			Old bagging		43½

Rates include wharfage at Galveston.
Rates do not include marine insurance.
Tariff authority: W. J. Sedgman's No. 17-J, I. C. C. No. 152.

Commodity rates in carloads from Galveston, Tex., to Atlantic seaboard points via Mallory Line or Morgan Line and connections.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

	Brewer's rice.	Clean rice.	Rice flour.	Cotton and cotton linters.	Sisal or ixtle.
Albany, N. Y.		53.5		54.5	
Auburn, N. Y.		49		59.5	40
Baltimore, Md.	55	51	47.5	60	
Boston, Mass.	56.5	55.5	49	57.5	
Bridgeport, Conn.	49	49	42	47	
Brunswick, Ga.	43	43	43		
Charleston, S. C.	43	43	43		
Jacksonville, Fla.	43	43	43		
Philadelphia, Pa.	54.5	51.5	47	51.5	
Portland, Me.	55	55	47.5	67.5	
Plymouth, Mass.		55.5			40
Portsmouth, Va.	55	55	47.5		
Providence, R. I.	56.5	51	49	[1] 62.5	
Rockland, Me.	65.5	65.5	58		
Wilmington, N. C.	43	43	43		
Springfield, Mass.		55.5		56	
Utica, N. Y.		53.5		58.5	
New Bedford, Mass.				55.5	40

[1] To Fox Point Wharf via E. S. S. Co., 55.5.

Rates include wharfage at Galveston.
Rates do not include marine insurance.
Tariff authority: W. J. Sedgman's No. 17-J, I. C. C. No. 152.

Local and proportional class and commodity rates from New York (steamship piers) to Galveston, Tex., via Mallory Line or Morgan Line, governed by western classification.

[Rates in cents per 100 pounds. In effect Oct. 1, 1923.]

To—	1	2	3	4	5	A	B	C	D	E
Galveston	138	115.5	95	82	63.5	69	63.5	53	51.5	51.5
Galveston for beyond via rail	139	116.5	96	83	64.5	70	64.5	54	52.5	52.5

Bagging	30	Pipe iron or steel	30
Bagging, including lighterage	35	Manganese ore	29.5
Canned goods	47	Newsprint paper	40.5
Canned goods, including lighterage	49	Wrapping and bags, paper	44.5
Coffee, green	33	Writing and tablet paper	54
Coffee, roasted	47	Oil, petroleum and its products	43.5
Cotton	50	Sugar, including lighterage	29.5
Cotton piece goods	72.5	Sulphur	47
Dry goods	107.5		
Iron and steel articles	30, 32, 36		

Tariff authority: Sedgman's No. 22-G, I. C. C. No. 157.

COMMERCE OF GALVESTON, TEX.

Accompanying this report are tables showing in detail the commerce of the port during the last 11 years. A study of these tables shows a gradual increase during this period. In 1912 it amounted to 3,244,320 tons, increasing to 5,337,333 tons in 1915, 7,981,693 tons in 1920, and 5,356,891 tons in 1922. During the 10-year period, from 1912 to 1921, the imports have constituted 16 per cent, the exports 46 per cent, and the domestic receipts and shipments 38 per cent of the

business of the port. A graph is presented showing the average annual commerce during this 10-year period, segregated by important commodities.

Imports.—During the period 1912–1921 petroleum and products exceeded in volume all other commodities imported at Galveston, the average annual amount received during the period being 588,640 tons, or 79.7 per cent of the total imports.

Sugar and cane took second place with an average annual movement of 41,537 tons, or 5.6 per cent of the total imports.

Bananas were third among the imports with an average annual movement of 24,532 tons, or 3.3 per cent of the total imports. Other commodities in the import trade during this period were creosote, with an average annual movement of 13,515 tons, sisal grass and ixtle 11,305 tons, and corn 10,520 tons.

Exports.—During the 10-year period, the average annual movement of exports through the port of Galveston amounted to 2,044,059 tons. The export tonnage in 1912 amounted to 1,808,474 tons, increasing to 2,175,735 tons in 1915, and 3,674,487 tons in 1921.

Wheat was the most important commodity from point of volume, exported from Galveston during the period, the average annual amount shipped being 838,597 tons, or 41 per cent of the total exports. The export of wheat in 1912 amounted to 248,676 tons, or 13 per cent of the total exports of the port, while in 1921 it amounted to 2,570,928 tons, or 69 per cent of the total exports.

Cotton took second rank among the exports, with an average annual movement of 611,336 tons, or 30 per cent of the total. In 1912 the total cotton amounted to 1,086,939 tons, which exceeded any year of this period.

The export tonnage of cotton decreased steadily during the war period 1914–1918, but showed a marked gain in 1920, when it was 841,714 tons, as compared with 231,236 tons in 1918. Flour was next in volume among the exports, the average during the period mentioned being 152,823 tons, or 7.5 per cent of the total. In 1912 the total exports amounted to 25,864 tons, as compared with 1,511,607 tons in 1918 and 40,623 tons in 1921.

Cottonseed products, another important commodity of the export business of the port, had an annual average movement during the period 1912-1921 of 140,840 tons, or 3.6 per cent of the total.

The import and export business of Galveston for 1920, 1921, and 1922, taken as a whole, largely exceeded that of any previous year.

Domestic commerce.—Of the domestic receipts at Galveston during the period 1912–1921, mudshell amounted to 33.1 per cent of the total. Iron and steel and related manufactures took second rank, with an average annual movement of 72,787 tons, or 10.6 per cent of the total. The next important commodity was petroleum, with 8.8 per cent of the total.

Of the domestic shipments from the port for the 10-year period, ores and concentrates constituted 23 per cent of the total, petroleum products 22.1 per cent, and cotton 13.9 per cent. Other important commodities were forest products, sulphur, fruits and vegetables, and rice and products. The figures covering domestic receipts and shipments and the percentages shown on the accompanying graph do not take into consideration internal commerce for 1920 and 1921, which can not be segregated into the individual commodities mentioned above. The most important commodities of the internal receipts and shipments during those years were mudshell and reefshell, which together amounted to 488,632 tons in 1920 and 241,504 tons in 1921. Next in importance were petroleum products and sharpsand, which in 1921 were 31,116 tons and 49,140 tons, respectively.

Water-borne commerce at the port of Galveston, Tex., 1912–1922.

[Quantities expressed in short tons.]

FOREIGN.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
IMPORTS.											
Animals and animal products, except wool and hair:											
Bones, hoofs, etc.								2,114	100	2,323	517
Bone dust										1,501	
Cattle		107	9,531	4,522						105	
Fish	282	411	453	125	7	22		13	22	49	136
Gluestock								2,165			
Hides	1	155	28	40			3				
Leather manufactures											43
All other	6	5	42	19					15	12	1
Total	289	678	10,054	4,706	7	22	3	4,292	137	3,990	697
Vegetable food products, oil seeds, expressed oils, and beverages:											
Bananas	21,889	65,023	50,207	38,107	30,098	27,795	11,660			547	4,160
Beans	315	1,135	7,315	2,159	29						60
Beverages	256	156	121	77	35	21					
Cocoanuts	17		340				4				
Coffee	735	486	481	709	27	355		27	98	7,237	9,018
Corn		26,861	75,945					2,400			
Flaxseed									4,402		
Flour (wheat)	4	10	4		155						
Fruits and nuts	5	8	28		180	4		3		10	
Linseed and oil									6,056	75	121
Mineral waters	65	136	68	7						32	
Oils, vegetable	40	86	77	58			15		3	3	56
Peanuts									5,920		
Rice and products	1,789	2,783	2,912	25					32		
Spices	1	374	840	81							
Sugar and cane	14,404	28,638	36,386	43,983		49,235	21,307	65,042	62,285	94,096	13,470
Tea	28	58	27	2							15
Vegetables	607	24	109	156		49		11	507	2	1,528
Wheat					5,393				7,844		
All other	45	52	20			2			6	22	2
Total	40,200	125,830	174,880	85,364	35,917	77,461	32,986	67,483	87,153	102,024	28,430
Other vegetable products, except fibers and wood:											
Hops	38	47	55	19						29	7
Seeds	312	2,806	463	69		72		56	102	117	732
All other	3	88	26	1	93	10		1	5	23	
Total	353	2,941	544	89	93	82		57	107	169	739
Textiles:											
Bags and bagging	70	3,145	2,345	42		78		1,875			6,969
Burlaps	338	1,423	877							1,500	
Cotton manufactures	540	39	125	59		23	5	5	45	22	9
Cotton waste		1,647	333						77		
Fiber manufactures	26		26					3	2	96	814
Hair		137	65	73		207		159	85	62	124
Hats and bonnets	55	3	1			3			1	3	9
Jute, bags, etc.		4,857									
Jute, bags of	675	302		25	314						
Jute and jute butts			1,567						8	5	55
Linoleum	46	133	99					34	119		
Matting and mats	2	38	775	414		100					
Sisal grass and ixtle	6,750	8,002	5,861	12,455	14,676	18,689	19,076	19,644	7,898		
Waste, etc.	2,022	1,437									
Wool and wool manufactures	1	48	510	407		17		178	255	10	102
All other	22	2	16			35		1	50	20	47
Total	10,547	21,263	12,600	13,475	14,990	19,152	19,081	21,899	8,540	1,718	8,129
Wood and paper:											
Paper manufactures		3	25						2	2,412	9,349
Paper, printing		22	1,150								
Paper stock and manufactures of	492	1,736	12,339	1,583							
Paper, wrapping			376	170	38	30					
Wood manufactures	1,600	32	37	12		40			20	89	
Wood pulp	8,260	1,022	1,024	112							
All other	1	2	77	34		20		3	193	136	
Total	10,353	2,817	15,028	1,911	38	90		3	215	2,637	9,349
Nonmetallic minerals:											
Asphalt	10	134				3,917		4,587			
Cement	5	437	1,259								
China, porcelain, etc.	160	150	184	44		17		15	35	7	23
Clays and earth	7	3,669	2,887	134		355			2,055	2,340	1,662
Coal	389	1,620	742	392			400		200		2,067
Glassware	72	55	75			2			16	480	48
Petroleum products	770	493,203	581,486	434,976	465,863	13,870	215,405	14,300	2,026,022	1,640,508	1,595,650
Salt	600	1,971	1,159	224	1,680				784		115
All other	305	69	11					45	78	26	
Total	2,318	501,308	587,803	435,770	467,543	18,161	215,805	18,947	2,029,190	1,643,361	1,599,565

Water-borne commerce at the port of Galveston, Tex., 1912–1922—Continued.

FOREIGN—Continued.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
IMPORTS—continued.											
Ores, metals, and manufactures of, except machinery and vehicles:											
Base bullion											
Iron ore			858								4,625
Iron pig		935	669								
Iron and steel and manufactures	180	814	3,472	42	122	1,817	62	38		3,309	
Metal manufactures											222
Wire manufactures									512		
Zinc ore and calamine				33,755	28,644			935			
All other	138	90	102	15		27			3	6	
Total	318	1,839	5,101	33,812	28,766	1,844	62	973	515	3,315	4,847
Machinery and vehicles:											
Automobiles		3	5	1					7		4
Miscellaneous machinery	11	2	19						156	655	17
Total	11	5	24	1					163	655	21
Chemicals:											
Arsenic											482
Coal-tar products	586	79	23								
Creosote	338	59,551	38,986					2,376	8,522	25,378	44,658
Guano											732
Miscellaneous chemicals	545	9	35			10		8,416	2	155	6
Sodas	40	7,851		58			9,426				
All other	108	327	41	29		5			1	1	73
Total	1,617	67,817	39,085	187,051		15	9,426	10,792	8,525	25,534	45,941
Unclassified:											
Household and personal effects	265					45	36	27	14	46	60
Miscellaneous	87	617	1,293	1,021	485	8	11	294	572	22	3
Toys, dolls, and parts	198	212	150	35		7			23	6	56
United States returned articles	6		36	90	60					218	32
	556	829	1,479	1,146	545	60	47	321	609	292	151
Total imports	66,562	725,327	846,598	763,325	547,899	116,887	277,410	124,767	2,135,154	1,783,695	1,697,879

EXPORTS.											
Animals and animal products, except wool and hair:											
Animals, cattle and livestock	876	228	1,825	3,099	135			195	8,067	363	81
Casings for sausage	150	139	84								
Feathers		275	77								
Fish, miscellaneous				2		688	83,805	6,578	237		2
Lard and lard compounds	7,409	1,854	1,638	617	1,987	4,543		74	40	52	271
Leather and manufactures of		45	19	47	38	1		70	66	49	4
Meats, miscellaneous	228	182	212	265	1,350	326	2,243	427	49	5	
Milk and products			1			1,088	6,846	336	14	4	30
Tallow and oils	598	642	244		22	4	10	200	50	140	54
All other	3	44	67	5				16	81	26	12
Total	9,264	3,409	4,167	4,035	3,532	6,650	92,904	7,896	8,604	573	391
Vegetable food, products, oil seeds, expressed oils, and beverages:											
Cereals and breadstuffs		1,299					20,278	1,267	2,441	325	6
Corn cake											406
Cottonseed cake and meal	257,294	271,201	151,399	175,979	187,589	78,640		28,237	64,343	159,417	112,926
Cottonseed oil	29,448	3,715	1,219	1,524				88		146	17
Feed, mill				450				122	90		1,027
Flour	25,864	38,468	40,796	27,141	28,786	67,615	1,151,637	82,819	24,512	40,623	32,749
Fruits, canned and dried		11				1,283	6,396	10,246	1,131	14	13
Glucose					3,703	2,485				234	573
Grains, except wheat and rice	3,445	7,088	605	22,129	61,583	54,171	240,089	40,107	37,264	31,119	31,139
Hay		86		61,507	76,920	10,275			13		
Linseed cake and meal	4,902	13,788						7			
Liquors, beverages, etc	258	173	391	67	205	16		97	38	414	1,568
Oats and oatmeal			2	916		628	1,629	223			
Peanuts, cake and meal				478	1,768	1,734		3,310	400	25	
Preserves								21,890	10,509		
Rice and products	5,852	1,690	4,525	2,486	7,692	634	33,018	23	15	233	
Sugar			786	4,100				118	3,039	6,857	237	1,866
Vegetables, fresh		225	28	65		25		228	113	64	32	
Vegetable oils							25,138	534,082	1,447,482	2,570,928	570,333
Wheat	248,676	401,718	1,080,294	979,716	693,013	404,928		392	32	21	74
All other		4									
Total	575,739	739,466	1,280,055	1,276,558	1,061,259	622,434	1,478,501	726,062	1,595,191	2,803,768	752,697
Other vegetable products, except fibers and wood:											
Broomcorn	622	552	427	629		364		361	200	179	359
Rosin, tar and turpentine	269	26		1	1,500	4,388	2,455	13,250	757		
Rubber manufactures							3	15	34	43	4
Seeds		2					105				

Water-borne commerce at the port of Galveston, Tex., 1912–1922—Continued.

FOREIGN—Continued.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
EXPORTS—continued.											
Other vegetable products except fibers and wood—Continued.											
Starch						1,384		843	558		
Tobacco and manufactures							6,199	5,913		1	
Total	891	580	427	630	1,500	6,136	8,762	20,382	1,549	223	363
Textiles:											
Bagging, cordage and twine							2,921	6,923	1,496	368	
Cotton and linters	1,086,939	843,775	710,537	764,716	55,240	283,864	231,236	552,912	841,714	742,433	628,975
Cotton manufactures		2	9	58			568	492	52	54	3
Ixtle								1,684	3,168	2,642	321
Wool and manufactures of wool				16	9,653			2	20	35	35
All other		16		1	4				68	23	60
Total	1,086,939	843,793	710,546	764,791	64,897	283,864	234,725	562,013	846,518	745,555	629,394
Wood and paper:											
Box shooks		1,077	405	282		557		521	911		
Logs	933	12,240	12,278	736		2,176			117		822
Lumber	96,506	104,183	59,871	59,144	45,059	25,286	48,081	98,469	13,738	23,055	14,576
Paper and manufactures of		14		138	929	43	22	351	79	84	39
Staves	2,600	39,669	19,170	9,944				38,099	13,309	1,377	3,918
Timber		19,852		2,516							
Wood manufactures, miscellaneous	5	243	182	2,666				68	2,504	625	324
All other						120		572	243	172	10
Total	100,044	177,278	91,906	75,426	45,988	28,182	48,103	138,080	30,901	25,313	19,689
Nonmetallic minerals:											
Asphaltum and manufactures of	344	1,547	695	56		500		2,771	547	390	33
Brick		648				600	384	170	621	46	2,656
Cement		7	242	95				215	825	89	100
Clay											228
Coal		36					5,007		24		179
China, crockery, and glassware		21	30	17		55	4	42	163	50	48
Petroleum products	2,253	4,170	1,659	993	7,125	43,632	105,991	5,100	21,538	77,026	109,587
Phosphate rock						6,228					
Sulphur			528	2,117		5,594		58,032	21,276	11,244	109,123
All other			16	31			1	256	467		312
Total	2,597	6,429	3,170	3,309	7,125	56,609	111,387	66,586	45,461	88,845	222,266
Ores, metals and manufactures of, except machinery and vehicles:											
Iron and steel and manufactures of	28,632	20,976	7,733	24,654	151,056	156,318	76,141	13,800	11,020	5,794	1,215
Miscellaneous metals and ores, including manufactures of	3,684	3,878	625	22,490	61,091	39,898	23,084	34,978	53,652	2,593	3,525
All other		131		42			71	21	549	269	
Total	32,316	24,985	8,358	47,186	212,147	196,216	99,296	48,799	65,221	8,656	4,740
Machinery and vehicles:											
Agricultural implements and vehicles		2					6,611	336	1,247	341	82
Automobiles and parts		44	9	92	63	74	84	46	107	6	12
Electrical apparatus								28	15	123	2
Engines and parts							334	823	220	117	
Machinery, miscellaneous	446	1,065	291	153	251	424	5,083	9,000	393	412	250
All other		1						148	105	11	
Total	446	1,112	300	245	314	498	12,112	10,276	2,087	1,010	346
Chemicals:											
Cartridges, firearms, etc.			197	110					30		
Fertilizer		50		1,344			14,209	2,070	214	3	26
Miscellaneous chemicals and drugs			17	444	452	2,487		178	816	386	
Soap and soapstock			882	299	288	86		42	67	11	28
All other				11			4				
Total		50	1,096	2,208	740	2,573	14,213	2,290	1,127	400	54
Unclassified:											
Miscellaneous merchandise	238	1,172	731	1,347	1,468	492	812	83	306	144	22
Total foreign exports	1,808,474	1,798,274	2,100,756	2,175,735	1,398,970	1,203,654	2,100,815	1,582,467	2,596,965	3,674,487	1,629,962

Water-borne commerce at the port of Galveston, Tex., 1912–1922—Continued.

DOMESTIC.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
COASTWISE RECEIPTS.											
Animals and animal products, except wool and hair:											
Hides, skins, furs, and pelts		70	17			203		481		49	
Leather and manufactures of				71		54	137		143		162
Meats and products				696		1,702	168	87	64	16	23
Mudshell		592,286	718,912	682,584				274,000			
Poultry, game, and fish	756	3,496	2,053	965	39		1,274	901	985	1,258	483
Animal products								257			1,452
Total	756	595,852	720,982	684,316	39	1,959	1,579	1,726	1,192	1,323	2,120
Vegetable food products, oil seeds, expressed oils, and beverages:											
Agricultural products, miscellaneous		66	87	1,897		2,113	41	6,798	194	81	27
Coffee	2,714	2,634	3,000	2,681	2,691		3,700		2,687	6,060	3,419
Cottonseed cake and meal						570				17	
Flour and meal						27	47	21	106	184	
Fruits and nuts		219	259	2,228	1,150	2,592	1,406		1,263	3,837	2,042
Groceries	2,181	6,540	3,050	17,510	9,600	23,757	11,128		4,486	2,676	4,717
Sirup, molasses, and glucose							3,329		205	183	290
Sugar and products	1,477	3,028	1,554	1,706	1,000	4,448	1,625	883	559	2,851	1,078
Vegetables, fresh and dried	2,295	16,383	9,082	17,805	8,205	3,993	3,059	3,309	7,994	8,394	8,466
Vinegar and cider	1,623	1,500	613	1,216	1,216		1,160		22	1,123	650
Wines, liquors, and beverages	1,443	1,533	982	2,201		1,045	429	401	223	91	306
All other									122	23	137
Total	11,733	33,192	18,627	47,259	23,862	38,673	26,090	11,412	17,949	25,693	21,132
Other vegetable products, except fibers and wood:											
Hops						8			16		
Nursery stock						30	55		13		
Naval stores				69			450	147		47	
Rubber and manufactures					100	708	378		180	257	861
Seeds				34		163	215		61	22	82
Starch							204		128	162	57
Tobacco			406	265		718	622	179	84	75	1,560
Total			406	368	100	1,619	1,924	326	466	563	2,560
Textiles:											
Bags and bagging	13,433	7,368	12,460	31,733	13,760	26,608	19,381		22,971	15,872	15,913
Cordage, rope, and twine	1,061	2,029	699	4,254	2,018	13,684	11,087		1,418	2,143	4,779
Cotton and linters			2,008	8,898		181	109	100	100		99
Dry goods and clothing	2,428	58,343		27,464	4,670	20,067	14,854		18,989	15,594	15,235
Floor coverings	1,615	1,278	615	2,933	700	7,040	4,554		1,853	1,185	3,415
Silk						80					
Wool and mohair			11	147		99	23	56	106	262	52
Total	18,537	69,018	15,793	75,429	21,148	67,759	50,008	156	45,437	35,056	39,493
Wood and paper:											
Fence				2,003							
Forest products	145			124		969	49	48		13	47
Furniture and mantels					300		877		756	2,379	2,734
Lumber	268	192	109			2,971	1,517	24	4	50	21
Paper, building									277	607	258
Paper and manufactures of	12,259	11,587	8,157	3,285	8,900	35,864	28,410		13,859	3,633	33,721
Paper, printing				21,469					4,304	15,147	13,337
Paper, wall, wrapping, etc				5,729					1,379	2,468	5,892
Roofing material	1,870	1,437	1,400	2,189	750		869		680	1,652	8,371
All other									70	116	206
Total	14,542	13,216	9,666	34,799	9,950	39,804	31,722	72	21,329	26,065	64,587
Nonmetallic minerals:											
Asphaltum and gilsonite	313	389	291	1,169		584	699		114	81	257
Cement, brick, lime, and stone	16,186	17,500	19,133	14,626	4,350	11,834	6,071	3,252	4,875	4,066	4,277
Coal			59,305	36,146							
Crockery, china, and glassware						833	166		146	443	1,552
Petroleum products	2,869	21,650	55,610	43,297	1,360	55,231	2,842	50,278	30,742	339,601	186,596
All other								825	238	433	40
Total	19,368	39,539	134,339	95,238	5,710	68,673	10,091	54,355	36,115	344,624	192,722
Ores, metals, and manufactures of, except machinery and vehicles:											
Iron and steel and manufactures of	193,036	105,441	108,535	108,286	39,320	101,543	41,050	33,829	25,083	41,648	75,232
Miscellaneous metals and ores, including manufactures of				4,648		2,715	1,078	4,762	1,939	966	2,145
Total	193,036	105,441	108,535	112,934	39,320	104,258	42,128	38,591	27,022	42,614	77,377
Machinery and vehicles:											
Agricultural implements and vehicles				526		1,188	225	617	318	554	255
Automobiles				108			120		140	46	187
Electrical apparatus									1,560		4,059
Machinery, miscellaneous	3,146	47,908	42,159	21,516	10,000	20,198	14,280		3,288	5,785	14,944
Rolling stock									573	2,538	744
Trucks and wheelbarrows							175			12	102
All other									1,006		57
Total	3,146	47,908	42,159	22,150	10,000	21,386	14,800	617	6,885	8,935	20,348

Water-borne commerce at the port of Galveston, Tex., 1912–1922—Continued.

DOMESTIC—Continued.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
COASTWISE RECEIPTS—continued.											
Chemicals:											
Ammunition	1,470	975	1,020	2,098	675	2,109	914		1,490	2,336	3,847
Dips and sprays									39	324	208
Miscellaneous chemicals and drugs	4,648	3,975	3,501	13,196	9,200	14,290	14,717		2,307	9,513	2,676
Paints, oils, etc.	2,994	1,915	3,634	5,294	1,450	3,961	4,237		2,006	3,972	13,286
Sodas and sodium											25,798
Soap and soap powders				6,372		6,172	3,119		2,828	9,956	11,858
Total	9,112	6,865	8,155	26,960	11,325	26,532	22,987		8,670	26,101	57,673
Unclassified:											
Canned goods	17,505	34,967	37,523	29,046	10,800	24,751	14,973	10,500	6,167	17,767	47,211
Government freight							3,084				
Miscellaneous	347,320	286,918	254,757	148,188	50,040	29,778	65,944	359,768	12,841	7,090	85,702
Total	364,825	321,885	292,280	177,234	60,840	54,529	84,001	370,268	19,008	24,857	132,912
Total coastwise receipts	635,055	1,232,916	1,350,942	1,276,687	182,294	425,192	285,330	751,523	184,073	535,831	610,925
COASTWISE SHIPMENTS.											
Animals and animal products, except wool and hair:											
Dairy products and eggs	180	30	50	404	70		55			19	53
Hides, skins, furs, etc.	2,088	6,765	7,603		1,470	6,613	4,202	1,742	371	1,309	4,447
Lard and lard compounds	912	158	400	129	140				1,072	972	
Leather and manufactures of						312	23		62	29	10
Meats and products				8,199		1,944	3,944	244	99	44	297
Poultry, fish, and animals			808				301	166	53	193	19
All other								4,496			36
Total	3,180	6,953	8,861	8,732	1,680	8,869	8,525	6,648	1,657	2,566	4,862
Vegetable food products, oil seeds, expressed oils, and beverages:											
Agricultural products, miscellaneous				10,049		20,083	15,951	81,713	879	719	1,714
Cottonseed products	108	11,594	2,152	6,180	340	4,065	249		920	1,415	147
Feed and mill products				4,981		1,836			388		241
Flour and meal	324	1,237	2,083	3,238	1,840	3,268	3,590	5,200	5,550	6,201	17,180
Fruits and nuts	1,500	6,924	11,303	35,628	190	14,924	8,209		413	10,375	3,314
Grains, miscellaneous, and malt			1,441	23,958		90,255	102	4,078	25,321	582	39,933
Groceries						3,199	7,648		5,600		103
Rice	17,376	20,348	17,906	24,868	12,700	44,174	27,842	16,900	18,435	24,244	
Rice bran and flour									9,645		
Sugar	1,360	709	98	907		4,638					
Vegetables	6,325	11,972	3,918	51,787	7,900	47,626	30,814	27,335	7,984	23,950	8,022
Wines, liquors, etc.	6,734	4,909	12,836	8,172		58,037	39,395	29,447	2,067	318	167
All other		25	10	2,814		830	901		19	119	263
Total	33,727	57,718	51,747	167,601	22,970	292,935	134,701	164,673	77,190	67,923	71,084
Other vegetable products, except fibers and wood:											
Broom corn and root	336	665	581	525	530				434	19	
Corn shucks							71				87
Nursery stock							5,119	1,107	247	4,475	4,106
Rosin, tar, and turpentine	596	52	619	2,574	1,898		5,656		350	43	360
Rubber and manufactures				1,851		3,233	527		427	18	101
Seeds						513	1,216		317	146	396
Hops				2,549		2,392	1,185	42	56	43	
Tobacco						184					
Total	932	717	1,200	7,499	2,428	6,322	13,774	1,149	1,831	4,744	5,050
Textiles:											142
Carpets, rugs, and matting	87,127	177,590	161,218	210,909	90,050	221,895	110,181	69,079	78,538	72,235	108,071
Cotton	756	396	350	1,029	790	1,087	874		2,435	877	903
Cotton manufactures and dry goods									5,722	3,451	4,548
Fibers	250	903	3,379	1,426	1,450			6,850	3,574	1,383	2,344
Sisal grass and ixtle	2,868	9,628	12,077	11,377		6,521	2,967	8,155	15,987	17,872	14,588
Wool and mohair				297		436	1,772		166	30	1,047
All other											
Total	91,001	188,517	177,024	225,038	92,290	229,939	115,794	84,084	106,422	95,848	131,643
Wood and paper:											
Lumber and other forest products	130,361	89,118	102,353	129,529	53,450	56,216	5,120	12,811	154,203	28,212	87,038
Furniture							48			183	19
Paper, manufactures of				974		1,401	719		1,394	887	377
Total	130,361	89,118	102,353	130,503	53,450	57,617	5,887	12,811	155,597	29,282	87,434
Nonmetallic minerals:											
Asphaltum		9,895	4,082	5,912		11,097	4,662		158	108	42
Cement, brick, lime, etc.	976	519	340	272			1,388	3,582	2,168	5,384	5,383
Coal											30
Crockery and glassware						43	108			619	
Petroleum products	3,161	20,253	66,434	84,185		25,287	738	17,549	1,838,816	651	1,363
Sand and gravel	190									28	
Salt			240			2,451	300			259	348
Stone, marble, etc.	203					6,229	125	491		36	411
Sulphur							160	35,000	343,248	213,937	360,713
Total	4,530	30,667	71,096	90,369		45,107	7,481	56,622	2,184,390	221,022	368,290

Water-borne commerce at the port of Galveston, Tex., 1912–1922—Continued.

DOMESTIC—Continued.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
COASTWISE SHIPMENTS—continued.											
Ores, metals, and manufactures of, except machinery and vehicles:											
Iron and steel, and manufactures of	2,698	.....	1,766	133	.....	1,030	2,701	177	102	33	110
Miscellaneous metals and ores, and manufactures of	255,601	268,909	249,609	305,464	98,500	422,395	244,462	132,148	70,142	78,365	307,904
Total	258,299	268,909	251,375	305,597	98,500	423,425	247,163	132,325	70,244	78,398	308,014
Machinery and vehicles:											
Agricultural implements and vehicles	.....	.....	.....	.....	.....	119	.....	41	.....	.....	.....
Automobiles and parts	.....	.....	.....	5	.....	.....	50	.....	22	37	23
Miscellaneous machinery	.....	.....	.....	201	.....	332	320	.....	328	89	798
Total	.....	.....	.....	206	.....	451	370	41	350	126	821
Chemicals:											
Borate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15,832
Ammunition and explosives	.....	.....	.....	72	.....	.....	17	.....	24	8	.....
Fertilizer	100	500	105	3,588	3,600	.....	2,525	.....	.....	.....	.....
Miscellaneous chemicals and drugs	.....	.....	.....	.....	.....	.....	2,143	.....	171	54	63
Paints, oils, etc.	.....	.....	.....	.....	.....	2,200	1,386	.....	690	1,216	1,993
Soap and soap powders	.....	.....	.....	.....	.....	.....	18	.....	23	52	.....
Total	100	500	105	3,660	3,600	2,200	6,089	.....	908	1,330	17,888
Unclassified:											
Canned goods	.....	873	1,135	33,447	.....	51,600	24,463	.....	.....	361	998
Government freight	.....	.....	.....	.....	.....	.....	3,010	.....	.....	.....	.....
Miscellaneous	212,099	54,599	56,582	143,953	109,000	101,739	47,870	209,581	229	4,262	5,162
Total	212,099	55,472	57,717	177,400	109,000	153,339	75,343	209,847	229	4,623	6,160
Total coastwise shipments	734,229	698,571	721,478	1,121,586	383,918	1,220,204	615,127	668,200	2,598,849	505,862	1,001,246

Commodities.	1920	1921	1922
INTERNAL RECEIPTS AND SHIPMENTS.[1]			
Animals and animal products, except wool and hair:			
Fish	.....	114	.....
Mud shell and reef shell	488,632	241,504	377,729
Oysters	.....	420	.....
Total	488,632	242,038	377,729

Commodities.	1920	1921	1922
INTERNAL RECEIPTS AND SHIPMENTS [1]—Continued.			
Nonmetallic minerals:			
Petroleum products	.....	31,116	.....
Sharp sand	.....	49,140	39,150
Total	.....	80,256	39,150
Total internal receipts and shipments	488,632	322,294	416,879

[1] Data not available prior to 1920

Summary of water-borne commerce at the port of Galveston, Tex., by classes.

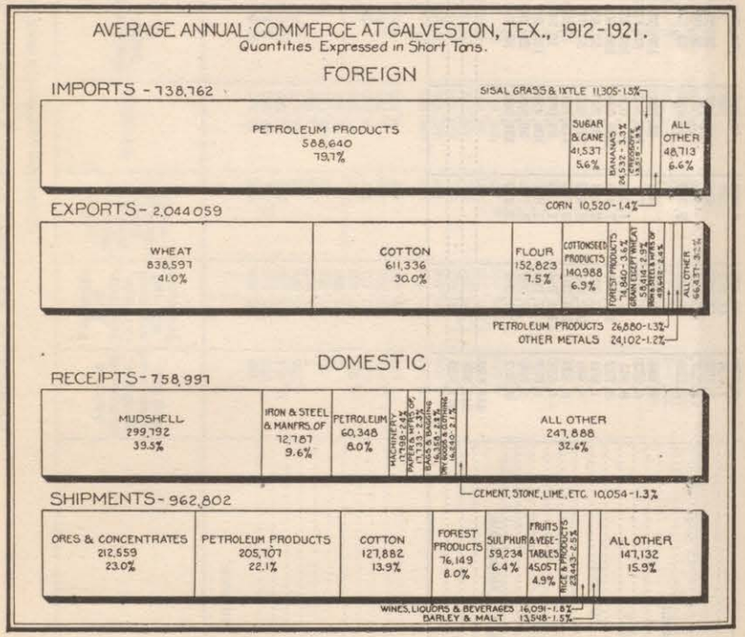
[Quantities expressed in short tons.]

	Animals and animal products, except wool and hair.	Vegetable food products, oil seeds, expressed oils, and beverages.	Other vegetable products, except fibers and wood.	Textiles.	Wood and paper.	Non-metallic minerals.	Ores, metals, and manufactures of, except machinery and vehicles.	Machinery and vehicles.	Chemicals.	Unclassified.	Total.
FOREIGN.											
Imports:											
1912	289	40,200	353	10,547	10,353	2,318	318	11	1,617	556	66,562
1913	678	125,830	2,941	21,263	2,817	501,308	1,839	5	67,817	829	725,327
1914	10,054	174,880	544	12,600	15,028	587,803	5,101	24	39,085	1,479	846,598
1915	4,706	85,364	89	13,475	1,911	435,770	33,812	1	187,051	1,146	763,325
1916	7	35,917	93	14,990	38	467,543	28,766	.....	.....	545	547,899
1917	22	77,461	82	19,152	90	18,161	1,844	.....	15	60	116,887
1918	3	32,986	.....	19,081	.....	215,805	62	.....	9,426	47	277,410
1919	4,292	67,483	57	21,899	3	18,947	973	.....	10,792	321	124,767
1920	137	87,153	107	8,540	215	2,029,190	515	163	8,525	609	2,135,154
1921	3,990	102,024	169	1,718	2,637	1,643,361	3,315	655	25,534	292	1,783,695
1922	697	28,430	739	8,129	9,349	1,599,565	4,847	21	45,951	151	1,697,879
Exports:											
1912	9,264	575,739	891	1,086,939	100,044	2,597	32,316	446	.....	238	1,808,474
1913	3,409	739,466	580	843,793	177,278	6,429	24,985	1,112	50	1,172	1,798,274
1914	4,167	1,280,055	427	710,546	91,906	3,170	8,358	300	1,096	731	2,100,756
1915	4,035	1,276,558	630	764,791	75,426	3,309	47,186	245	2,208	1,347	2,175,735
1916	3,532	1,061,259	1,500	64,897	45,988	7,125	212,147	314	740	1,468	1,398,970
1917	6,650	622,434	6,136	283,864	28,182	56,609	196,216	498	2,573	492	1,203,654
1918	92,904	1,478,501	8,762	234,725	48,103	111,387	99,296	12,112	14,213	812	2,100,815
1919	7,896	726,062	20,382	562,013	138,080	66,586	48,799	10,276	2,290	83	1,582,467
1920	8,604	1,595,191	1,549	846,518	30,901	45,461	65,221	2,087	1,127	306	2,596,965
1921	573	2,803,768	223	745,555	25,313	88,845	8,656	1,010	400	144	3,674,487
1922	391	752,697	363	629,394	19,689	222,266	4,740	346	54	22	1,629,962
DOMESTIC.											
Coastwise receipts:											
1912	756	11,733	.....	18,537	14,542	19,368	193,036	3,146	9,112	364,825	635,055
1913	595,852	33,192	.....	69,018	13,216	39,539	105,441	47,908	6,865	321,885	1,232,916
1914	720,982	18,627	406	15,793	9,666	134,339	108,535	42,159	8,155	292,280	1,350,942
1915	684,316	47,259	368	75,429	34,799	95,238	112,934	22,150	26,960	177,234	1,276,687
1916	39	23,862	100	21,148	9,950	5,710	39,320	10,000	11,325	60,840	182,294
1917	1,959	38,673	1,619	67,759	39,804	68,673	104,258	21,386	26,532	54,529	425,192
1918	1,579	26,090	1,924	50,008	31,722	10,091	42,128	14,800	22,987	84,001	285,330
1919	1,726	11,412	326	156	72	54,355	38,591	617	.....	370,268	751,523
1920	1,192	17,949	466	45,437	21,329	36,115	27,022	6,885	8,670	19,008	184,073
1921	1,323	25,693	563	35,056	26,065	344,624	42,614	8,935	26,101	24,857	535,831
1922	2,120	21,132	2,560	39,493	64,587	192,722	77,377	20,348	57,673	132,913	610,925
Coastwise shipments:											
1912	3,180	33,727	932	91,001	130,361	4,530	258,299	.....	100	212,099	734,229
1913	6,953	57,718	717	188,517	89,118	30,667	268,909	.....	500	55,472	698,571
1914	8,861	51,747	1,200	177,024	102,353	71,096	251,375	.....	105	57,717	721,478
1915	8,732	167,601	7,499	225,038	130,503	90,369	305,597	206	3,660	177,400	1,121,586
1916	1,680	22,970	2,428	92,290	53,450	.....	98,500	.....	3,600	109,000	383,918
1917	8,869	292,935	6,322	229,939	57,617	45,107	423,425	451	2,200	153,339	1,220,204
1918	8,525	134,701	13,774	115,794	5,887	7,481	247,163	370	6,089	75,343	615,127
1919	6,648	164,704	1,149	84,084	12,811	56,622	132,325	41	.....	209,847	668,200
1920	1,657	77,190	1,831	106,422	155,597	2,184,390	70,244	350	908	229	2,598,849
1921	2,566	67,923	4,744	95,848	29,282	221,022	78,398	126	1,330	4,623	505,862
1922	4,862	71,084	5,050	131,643	87,434	368,290	308,014	821	17,888	6,160	1,001,246
Internal receipts and shipments:											
1920	488,632	.....	.....	.....	.....	.....	.....	.....	.....	.....	488,632
1921	242,038	.....	.....	.....	.....	80,256	.....	.....	.....	.....	322,294
1922	377,729	.....	.....	.....	.....	39,150	.....	.....	.....	.....	416,879

Summary of water-borne commerce at the port of Galveston, Tex., by years.

[Quantities expressed in short tons.]

Year.	Foreign.			Domestic.				Grand total.
	Imports.	Exports.	Total.	Coastwise.		Internal receipts and shipments.	Total.	
				Receipts.	Shipments.			
1912	66,562	1,808,474	1,875,036	635,055	734,229	.....	1,369,284	3,244,320
1913	725,327	1,798,274	2,523,601	1,232,916	698,571	.....	1,931,487	4,455,088
1914	846,598	2,100,756	2,947,354	1,350,942	721,478	.....	2,072,420	5,019,774
1915	763,325	2,175,735	2,939,060	1,276,687	1,121,586	.....	2,398,273	5,337,333
1916	547,899	1,398,970	1,946,869	182,294	383,918	.....	566,212	2,513,081
1917	116,887	1,203,654	1,320,541	425,192	1,220,204	.....	1,645,396	2,965,937
1918	277,410	2,100,815	2,378,225	285,330	615,127	.....	900,457	3,278,682
1919	124,767	1,582,467	1,707,234	751,523	668,200	.....	1,419,723	3,126,957
1920	2,135,154	2,596,965	4,732,119	184,073	2,598,849	466,652	3,249,574	7,981,693
1921	1,783,695	3,674,487	5,458,182	535,831	505,862	316,827	1,358,520	6,816,702
1922	1,697,879	1,629,962	3,327,841	610,925	1,001,246	416,879	2,029,050	5,356,891



TERRITORY TRIBUTARY TO GALVESTON BAY PORTS.

The ports of Galveston, Houston, and Texas City enjoy import and export class rates to and from points north of the Ohio River and extending as far east as Cincinnati which are on the same basis as the rates applying through New Orleans and Mobile. From a rate viewpoint, therefore, each of these ports has opportunity for the development of through import and export business. The movement of traffic through these ports from interior points is not influenced by the rate alone, but more particularly by the facilities available at the port for the handling and accommodation of traffic, the vessel lines and other factors operating to and from the port, connected with the conduct and financing of foreign trade.

The three Galveston Bay ports serve, practically, the same local and the same through territories. It is true that there are some minor differences, such, for instance, as the movement of sulphur, which is confined to Galveston and Texas City, and rice, which is principally confined to Houston.

Through the courtesy of the rail lines serving the Galveston Bay ports the board has been able to present in this report tables showing by States the origin of exports and the destination of imports moving through these ports during the calendar year 1921. Based upon these figures a map has been prepared showing the territory served by the Galveston Bay ports. It will be noted that this territory extends from Pennsylvania to California, and northward into Michigan, Minnesota, North Dakota, and Idaho.

Territory served for import traffic.—The most important commodity imported at each of the Galveston Bay ports in 1921 was crude oil from Mexico. The greater portion of this oil moved by rail lines was forwarded to refineries in the State of Texas. Next in importance among the imports in 1921 was sugar. The statistics furnished by the Shipping Board show that all of this sugar came from Cuba. It was forwarded to refineries in Texas and Louisiana. Among the important imports of the Galveston Bay ports are fibers and textile grasses, including sisal, ixtle, jute, and burlaps. Some of this material was consumed in the State of Texas, while large quantities were forwarded to Ohio, Illinois, Indiana, Minnesota, and Missouri for use by packing houses and in the manufacture of binding twine. During the year 1921, 32,358 tons of creosote oil were forwarded from Galveston by the rail carriers to California, New Mexico, and points in Texas. The greater portion of this was used

locally and some was forwarded to points in California and New Mexico. During the calendar year 1921, 4,532 tons of bananas were received at the Galveston Bay ports. These came from Central American ports, and were forwarded to points in Kansas, Oklahoma, Arkansas, Colorado, Illinois, Missouri, and Texas.

Coffee is becoming of increasing importance as an import through these ports. This coffee during 1921 came entirely from Brazil. Part of it was roasted locally, and the remainder was forwarded to points in Illinois, Iowa, Missouri, Oklahoma, Texas, and Wisconsin.

Territory served for export traffic.—Exports handled through Galveston, Houston, and Texas City are of more diversified nature than the imports. This is particularly true in the case of Texas City and Houston where the imports are confined to a very few commodities.

From the standpoint of volume, wheat was the most important commodity exported through the Galveston Bay ports during the calendar year 1921. During that year the Galveston customs district led all other districts in the United States in the export of wheat, with a total of 92,122,075 bushels. This wheat came from central western and southwestern States extending from southern Idaho to the Mississippi River. The data supplied by the railroads show shipments from Colorado, Idaho, Iowa, Kansas, Minneosta, Missouri, Nebraska, New Mexico, Oklahoma, Texas, Utah, and Wyoming. The bulk of the movement, however, originated in Colorado, Kansas, Missouri, Oklahoma, and north Texas.

Cotton was second in importance from the standpoint of volume of the exports moving through Texas ports in 1921. While export rates are in effect on cotton to Texas points, much of the cotton moves to seaboard on domestic rates. At the port it goes into storage and is later moved out either for export or for domestic rail or coastwise shipment. By this process its identity is lost, and it is impracticable to give by States the origin of all of the cotton which was actually exported from the port during that year. Practically all of the cotton consigned to these ports eventually goes out either to foreign or domestic destinations. During 1921 the cotton shipped from Galveston, Houston, and Texas City came from Arizona, Arkansas, California, Colorado, Louisiana, Mississippi, New Mexico, Oklahoma, Tennessee, and Texas. The latter State furnished about 90 per cent of the total. Shipments from Tennessee, Washington, and Mississippi were of such small amount as not to justify recognition in fixing the boundaries of the territory tributary to these ports. The data prepared by the Shipping Board show that the cotton moving through these ports was destined principally to the United Kingdom and Europe, with, however, a substantial amount to Japan. The exports to Germany exceeded those to any other country.

Large amounts of cottonseed cake and meal are shipped through Galveston Bay ports and this material originates principally in Oklahoma and Texas. Other important commodities exported through the Galveston Bay ports include corn, wheat flour, petroleum products, lumber, rice, and sulphur. The origin and destination of these materials are discussed more in detail under each port.

The geographical position of the Galveston Bay ports with relation to important interior points of production, concentration, and distribution, and with relation to important foreign ports, is shown by the following tables:

Water distances to important foreign ports, in nautical miles.

	New York.	Philadelphia.	Baltimore.	Norfolk.	Charleston.	Savannah.	Pensacola.	Mobile.	New Orleans.	Galveston.	San Francisco.
Liverpool	3,107	3,250	3,393	3,272	3,540	3,613	4,504	4,544	4,613	4,773	7,836
Glasgow	3,036	3,179	3,322	.....	.....	.....	.....	.....	4,510	4,670	.....
Hamburg	3,648	3,791	3,934	3,813	4,081	4,154	.....	.....	5,154	5,314	8,358
Copenhagen	3,928	4,071	4,218	4,093	.....	4,434	.....	.....	5,434	5,573	8,638
Gibraltar	3,207	3,350	3,490	3,369	3,619	3,689	4,484	4,524	4,593	4,753	7,620
Habana	1,186	1,156	1,107	985	646	606	515	553	603	769	4,291
Port au Prince	1,372	1,343	1,301	1,779	.....	.....	1,121	1,163	1,219	1,400	4,062
Trinidad	1,921	1,920	.....	.....	1,667	.....	1,954	1,995	2,058	2,203	.....
Tampico	2,030	2,000	1,951	1,829	1,479	1,439	759	750	711	473	4,773
Belize	1,704	1,674	1,625	1,503	1,164	1,124	850	846	850	935	4,104
Colon, Canal Zone	1,974	1,946	1,901	1,779	1,564	1,563	1,344	1,371	1,390	1,493	.....
Pernambuco	3,698	3,745	3,772	3,651	3,649	3,681	.....	4,061	4,108	4,331	6,565
Buenos Aires	5,871	5,918	5,945	5,824	5,822	5,854	6,183	6,625	6,281	6,504	8,738
Valparaiso	4,633	4,605	4,560	4,438	4,223	4,222	4,003	4,030	4,058	4,152	5,140

Rail distances from important interior shipping centers, in statute miles.

	New York.	Philadelphia.	Baltimore.	Norfolk.	Charleston.	Savannah.	Pensacola.	Mobile.	New Orleans.	Galveston.	Los Angeles.	San Francisco.	Portland.	Seattle.
Pittsburgh	441	349	314	503	811	920	1,079	1,095	1,147	1,476	2,670	2,739	2,721	2,666
Cleveland	579	487	446	638	992	1,005	1,003	1,046	1,098	1,400	2,537	2,628	2,610	2,555
Cincinnati	751	660	593	667	730	743	741	784	836	1,157	2,397	2,556	2,538	2,483
Chicago	909	817	797	952	1,015	1,027	912	929	930	1,148	2,231	2,271	2,253	2,198
Louisville	865	774	702	731	707	719	654	670	787	1,043	2,332	2,471	2,473	2,504
St. Louis	1,053	961	932	1,005	920	905	745	657	718	864	2,058	2,689	2,990	3,119
Kansas City	1,331	1,239	1,210	1,283	1,198	1,183	995	868	868	806	1,780	1,977	1,979	2,050
Birmingham	990	898	803	764	476	446	260	276	355	774	2,358	2,682	2,684	2,813
Montgomery	1,051	959	864	772	484	338	163	179	318	737	2,321	2,764	2,818	2,947
Meridian	1,143	1,051	956	917	629	599	239	135	202	621	2,205	2,680	2,721	2,850
Memphis	1,158	1,066	971	961	727	697	511	384	396	663	1,966	2,441	2,463	2,534
Cairo	1,089	997	940	999	809	794	606	502	566	768	2,071	2,349	2,351	2,480
Atlanta	876	784	689	597	309	294	338	354	493	912	2,496	2,808	2,810	2,939
Minneapolis	1,317	1,225	1,205	1,360	1,423	1,435	1,320	1,245	1,306	1,306	2,202	2,164	1,815	1,774
Toledo	701	609	559	779	932	945	970	986	1,038	1,301	2,442	2,515	2,497	2,442

TERRITORY TRIBUTARY TO GALVESTON.

Territory served for import traffic.—Through the cooperation of the Galveston, Houston & Henderson Railroad, the Gulf, Colorado & Santa Fe Railway, International & Great Northern Railroad, and the Southern Pacific Co., Texas lines, the board has be enable to procure statistics showing the origin of exports and the destination of imports handled by the rail carriers through Galveston during

the calendar year 1921. These figures are in close agreement with those compiled by the Corps of Engineers which will be found in the chapter on the commerce of the port. The most important import from point of tonnage handled through Galveston during the calendar year was crude oil from Mexico, amounting to 1,610,626 tons. Of this total 1,493,064 tons were destined to points in Texas, 111,562 tons to Arizona and the remainder to Mexico and New Mexico. Imports of sugar amounting to 64,837 tons were moved to points in Texas, and 32,358 tons of creosote were forwarded to California, New Mexico and points in Texas. Rail carriers distributed 10,724 tons of sisal, imported through Galveston to Illinois, Indiana, Minnesota, Missouri, Ohio, Oklahoma, and points in Texas. Other important imports shown by railroad figures as moving through the port of Galveston during the year consisted of bananas, newsprint paper, fuller's earth, window glass, and miscellaneous merchandise. These commodities had a wide distribution.

Territory served for export traffic.—During the calendar year 1921 a total of 2,359,143 tons of wheat were brought to Galveston for export. This grain was moved by rail from 22 States, but much the larger share came from Colorado, Iowa, Kansas, Minnesota, Missouri, Nebraska, New Mexico, Oklahoma, Texas, and Utah. The data prepared by the Shipping Board show that the wheat moving through Galveston was destined principally to the United Kingdom, Italy, Germany, Belgium, Holland, and Greece.

Cotton was next in importance among the exports in 1921. The rail figures show a total of 481,866 tons which came from Arizona, Arkansas, Colorado, Louisiana, New Mexico, Oklahoma, and points in Texas. The latter State furnished the larger amount of this total. Sulphur, amounting to 165,079 tons, originated entirely within the State of Texas. The Shipping Board figures show that the sulphur shipped from the port was destined principally to England, Germany, France, Cuba, Argentina, Australia, and Pacific Canada.

During 1921 a total of 163,799 tons of cottonseed and cake were forwarded to Galveston by rail from Arkansas, Louisiana, Oklahoma, and points in Texas. The last named State alone contributing 154,491 tons. Other important commodities exported through Galveston include corn, flour, rice, rye, ixtle, lumber, staves, lead, and lubricating oil.

A map and tables are presented showing by States the origin of the exports and the destination of the imports handled by rail through Galveston during 1921; also another map and table showing the foreign origin and destination of certain of these movements as reported by the Shipping Board.

Origin of exports delivered at Galveston by rail during the calendar year 1921.

[Quantities expressed in short tons.]

Commodities.	Total.	Arizona.	Arkansas.	California.	Colorado.	Idaho.	Illinois.	Iowa.	Kansas.	Louisiana.	Minnesota.	Mississippi.	North Dakota.	Missouri.	Nebraska.	Nevada.	New Mexico.	Oklahoma.	South Dakota.	Tennessee.	Texas.	Utah.	Washington.	Wisconsin.	Wyoming.
Animals and animal products (except wool and hair):																									
Livestock	150																				150				
Cattle	12																				12				
Grease	34																				34				
Hogs	154																				154				
Shoes	1					1																			
Vegetable food products, oil seeds, expressed oils and beverages:																									
Barley	282								62					160							60				
Beverages	6						6																		
Bran	70		25						45								73				114				
Corn	2,364								805					925	223			224							
Cottonseed cake and meal	163,799		310							54								8,944			154,491				
Cottonseed hulls	18				28													18							
Flour	26,804						257	33	13,898					326	101			1,244			11,174				
Glucose	257																								
Hay	126																				126				
Maize	43																				43				
Oats	801							211	160		72			67	191				32		68				
Onions	194																				194				
Peanut cake	60																				60				
Rice	18,613									775											17,838				
Rye	8,526				2,114	226	10,470	197	921			194			750		356	773			162	1,080			1,753
Wheat	2,359,143		42	82	103,476	3,933		24,681	539,431		41,48,501		2,841	284,300	67,510	4,759	19,652	710,148	2,439	33	512,897	18,451	154	455,257	
Other vegetable products (except fibers and wood):																									
Sarsaparilla root	1																				1				

Origin of exports delivered at Galveston by rail during the calendar year 1921—Continued.

Commodities.	Total.	Arizona.	Arkansas.	California.	Colorado.	Idaho.	Illinois.	Iowa.	Kansas.	Louisiana.	Minnesota.	Mississippi.	North Dakota.	Missouri.	Nebraska.	Nevada.	New Mexico.	Oklahoma.	South Dakota.	Tennessee.	Texas.	Utah.	Washington.	Wisconsin.	Wyoming.
Textiles:																									
Cotton	481,866	1,794	9,520		1,544					6,350							14	38,100			424,544				
Cotton piece goods	11																				11				
Cotton waste	12																				12				
Ixtle	3,167																				3,167				
Textile	44																				44				
Wood and paper:																									
Barrels	11																				11				
Barrel heading	51																			25	26				
Logs (Hickory)	263																				263				
Lumber	17,488		36							8,484											8,968				
Paper bags	16									16															
Paper cones	2																				2				
Paper filter	1						1																		
Shooks	56																				56				
Staves	1,792		71																	136	1,585				
Wood billets	26																				26				
Nonmetallic minerals:																									
Asphalt	140																				140				
Brimstone	30																				30				
Fire brick	38													38											
Spelter	257																	257							
Sulphur	165,079																				165,079				
Tripoli	30														30										
Wax	200																				200				
Wax (paraffin)	101																	50			51				
Ores and metals:																									
Bits (drill)	1																				1				
Iron—pipe	28						28																		
Iron—valves	2																				2				
Lead	1,514														1,514										
Lead—bullion	810	450																			360				
Lubricating oil	1,301																				1,301				
Plumbing fixtures	9																				9				
Steel tanks	71								71																
Steel wrenches	4																				4				
Machinery and vehicles:																									
Batteries (electric)	1			1																					
Motor cycle	1																				1				
Chemicals:																									
Paint	3													3											
Soap	334																				334				
Miscellaneous	375																				375				
Merchandise	11																				11				
Household goods	1																				1				
Total	3,256,605	2,244	10,004	83	117,162	4,159	10,762	24,922	555,393	15,721	48,573	194	2,841	285,819	70,319	4,759	20,095	759,758	2,471	194	1,304,192	19,531	154	45	7,010

Destination of imports handled through Galveston by rail during the calendar year 1921.

[Quantities expressed in short tons.]

Commodities.	Total.	Arizona.	Arkansas.	California.	Colorado.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Louisiana.	Maryland.	Mexico.	Michigan.	Minnesota.	Missouri.	Nebraska.	New Mexico.	Ohio.	Oklahoma.	Pennsylvania.	Tennessee.	Texas.	Utah.	Wisconsin.
Animals and animal products (except wool and hair):																									
Canned goods	15																						15		
Vegetable food products, oil seeds, expressed oils and beverages:																									
Bananas	2,589			456	45		130			77						65				10	33		1,762		11
Coconuts	8																						8		
Coffee	5,783		16				2,970	33	232					33	33	1,190	82			33			910		251
Sugar	64,837																						64,837		
Other vegetable products (except fibers and wood):																									
Beet seed	47					17																	4	26	
Hops	17												17												
Licorice root	24											24													
Textiles:																									
Bagging	3,385																			53		102	3,230		
Bagging, jute	1,349																			16			1,333		
Sisal	10,724						4,687	2,951							1,927	366			149	24			510		110
Straw covers	87												87												
Wood and paper: News print paper	1,390				63											35							1,292		
Nonmetallic minerals:																									
Oil (company)	1,037,629																						1,037,629		
Oil (commercial)	572,997	111,562											4,425					1,575					455,435		
Glass, window	403																						403		
Fuller's earth	2,754				102		864	20	34	68					34	219	79			363			921		50
Salt	140																						140		
Sand, stone, gravel	4,015																						4,015		
Tile	22																						22		
Machinery and vehicles: Machinery	102																						102		
Chemicals:																									
Barium carbonate	28																						28		
Creosote	32,358			431														889					31,038		
Chloride	11																						11		
Unclassified	7,400						1,500	50			50		25			175	25			50			5,450		75
Merchandise	98						18				20		6										54		
Total	1,748,212	111,562	16	887	210	17	10,169	3,054	266	145	70	24	4,560	33	1,994	2,050	186	2,464	149	549	33	102	1,609,149	26	497

Destination of principal exports through the port of Galveston during the calendar year 1921.[1]

[In cargo tons of 2,240 pounds.]

Wheat.	Rye.	Corn.	Barley.	Other grains.	Wheat flour.	Vegetables.	Meat and dairy products.	Sugar, refined, and manufactures.	Cotton, raw.	Cotton, manufactures.	Wool and manufactures.	Leather and manufactures.	Foreign trade region.	Total tonnage.	Coal and coke.	Petroleum and products.	Iron and steel and manufactures.	Machinery (including agricultural).	Vehicles.	Copper and manufactures.	Lumber.	Sulphur.	Chemicals, n.e.s.	Naval stores.	N.e.s.
													United Kingdom:												
404,905		14,042		11,909	5,623				168,188				England	639,394		3,350		757		800	3,060	4,532	80		22,148
		1,293											Ireland	4,403							385				2,725
13,535					155								Scotland	20,415											6,725
19,107													Wales	19,139							32				
437,547		15,335		11,909	5,778				168,188				Total	683,351		3,350		757		800	3,477	4,532	80		31,598
													North Atlantic and Baltic Europe:												
													Finland	550											550
				459	983				1,677				Norway	15,360		106						20			12,115
				197					4,580				Sweden	14,024		7									9,240
1,071									568				Denmark	77,816		275									75,902
									344				Danzig	344											
4,821													Germany	4,821											
5,892				656	983				7,169				Total	112,915		388						20			97,807
													Havre-Hamburg range:												
360,109	12,812			10,121	4,101			229	161,189	377	2	23	Germany	607,399		16,993		526			992	2,250			37,675
195,893	7,202	2,125		5,015	9,690				10,758				Holland	244,455		9,424					80				4,268
286,744	430	1,605		31,247	911				27,783				Belgium	357,955		1,592		655			1,621	1,502			3,865
27,049				1,778					89,972				France	127,337		1,938					45				6,555
869,795	20,444	3,730		48,161	14,702			229	289,702	377	2	23	Total	1,337,146		29,947		1,181			2,738	3,752			52,363
													South Atlantic Europe:												
14,437													France	14,437											
									958				Portugal	2,788											
									171				Spain	193		22									1,830
					26								Canary Islands	26											
14,437					26				1,129				Total	17,444		22									1,830
													West Mediterranean:												
37,455				3,345					44,819				Spain	86,556		304	9	208							416
28,647								500					France	40,648											
730,932	5,225	1,315		8,307					61,644				Italy	822,646		10,782	632	300			1,517	6,151			5,350
													Tunis	9,600		9,600									1,992
4,794													Algeria	4,794											
801,828	5,225	1,315		11,652				500	106,463				Total	964,244		20,686	641	508			1,517	6,151			7,758
													East Mediterranean and Black Sea: Greece—Total												
57,303				50					176					57,529											
													West Indies:												
				358	1,949	51			12				Cuba	10,756		5,600					532	1,075	13		1,166
													Jamaica	308		308									
													Haiti	424							424				
				2,384	203							2	Dominican Republic	3,973		40					1,018				326
				2,742	2,152	51			12			2	Total	15,461		5,948					1,974	1,075	13		1,492
		722	25	259	887	42	91		160				Mexico—Total	36,037	20	10,631	972	345	13		16,178	46	254		5,392
													East Coast South America:												
23,714													Brazil	23,714											
													Argentine	16,244								7,430			8,814
23,714													Total	39,958								7,430			8,814
													Australasia:												
													Australia	23,550								18,250			5,300
													Society Islands	77											77
													Total	23,627								18,250			5,377
													Orient:												
									4,025				China	4,150				125							
									80,689				Japan	83,373		100								230	2,354
									84,714				Total	87,523		100		125						230	2,354
													Pacific Canada—Total	5,050								3,050			2,000
													Atlantic Canada—Total	16,000		16,000									
2,210,516	25,669	21,102	25	75,429	24,528	93	91	729	657,713	377	2	25	Total	3,396,285	20	87,072	1,613	2,916	13	800	25,884	44,306	347	230	216,785

[1] Prepared by the Division of Statistics, Bureau of Research, United States Shipping Board.

Origin of principal imports through the port of Galveston during the calendar year 1921.[1]

[In cargo tons of 2,240 pounds.]

Grains.	Sugar.	Coffee.	Wool manufacturing.	Jute manufacturing.	Fibers and grasses.	Foreign trade regions.	Total tonnage.	Paper manufacturing.	Clays.	Petroleum, crude.	Miscellaneous metals.	Logs and lumber.	Chemicals, n.e.s.	Animal and vegetable oil.	Seeds.	N.e.s.
						United Kingdom:										
1			1	212		England	7,556		303				2,004			5,035
				584		Scotland	1,905									1,321
1			1	796		Total	9,461		303				2,004			6,356
						North Atlantic and Baltic Europe:										
						Norway	447	250			35					162
						Sweden	50									50
						Total	497	250			35					212
						Havre-Hamburg range:										
						Germany	3,342	589			142				75	2,536
						Holland	16,150									16,150
						Belgium	695									695
						Total	20,187	589			142				75	19,381
						West Mediterranean:										
						Spain	8							6		2
						Italy	1									1
						Total	9							6		3
						West Indies:										
	91,586					Cuba	91,586					125				
						Dominican Republic	143									
	91,586					Total	91,729					125				
					837	Mexico—Total	1,810,319			1,800,726				8,720		35
						Central America: Canal Zone—Total	14									14
		4,297				East coast South America: Brazil—Total	4,297									
						India, Persian Gulf and Red Sea: British India—Total	2,413									2,413
19	91,586	4,297	1	796	837	Total	1,935,926	839	303	1,800,726	177	125	2,004	8,726	75	18,415

[1] Prepared by the Division of Statistics, Bureau of Research, United States Shipping Board.

GENERAL.

Galveston is the leading cotton exporting port in the United States, and one of the leading exporters of wheat, for which, indeed, in 1921 it surpassed all other United States ports. This port is peculiar in that its business, with the exception of oil, is almost entirely of a through character. Galveston is primarily a port; and practically all of its commercial activities are closely related to its port functions. There are no local industries contributing any important quantity of finished products to the outbound traffic, nor consuming any important volume of inbound raw materials. The financial institutions of the city derive their importance chiefly from their relationship to port business, and particularly to the financing of the cotton trade. The port has been developed with a special consideration to the demands of cotton and grain.

Galveston has regular steamship service to the United Kingdom, Baltic, Scandinavian ports, Netherlands, Belgium, Germany, France, Spain, and Mediterranean ports, the Far East, the Orient, West Indies, Mexico and Atlantic and Pacific ports of South America. It also has regular coastwise service to New York and Key West and regular intracoastal service to Pacific ports of the United States. The port is visited by tramp vessels which participate in the grain and cotton trade. The several important oil companies located at Galveston have their own tanker service to Mexico. There is thus vessel service to nearly all parts of the world. The problem of the port in so far as ships are concerned, is primarily in the direction of improving conditions for the lines now operating.

During the 10-year period from 1912 to 1921, inclusive, the foreign and domestic commerce of Galveston averaged 4,500,000 tons per year. The foreign commerce amounted to slightly less than 62 per cent and the domestic commerce to slightly more than 38 per cent. Of the total business during the period mentioned imports comprised 16 per cent, exports 46 per cent, domestic receipts 17 per cent, and domestic shipments 21 per cent. Petroleum products during the period mentioned were 79.7 per cent of the total imports; wheat and cotton together, 71 per cent of the total exports. The domestic receipts, averaging 759,000 tons per year, included mudshell to the amount of 300,000 tons annually, which was strictly local business. Other domestic receipts were iron and steel manufactures and petroleum. In addition to this, however, there was a long list of miscellaneous articles of all kinds received coastwise from New York. The

principal domestic shipments were metals, sulphur, petroleum products and cotton. As in the case of the inbound traffic, there was also a substantial outbound coastwise movement of miscellaneous commodities.

The port of Galveston is peculiar in respect to the ownership and operation of its terminal facilities. The principal developments have been installed by the Galveston Wharf Co., which owns about 90 per cent of the developed waterfront, extending from Pier 10 to and including Pier 41. The city of Galveston owns one-third interest in this company, and appoints three of the nine directors. The Galveston Wharf Co. owns and operates not only the larger share of the terminal facilities but also a belt-line system connecting all carriers with these terminals. The Southern Pacific Terminal Co., a separate corporation, owns and operates three piers adjoining Pier 41.

The waterfront facilities of the port have been developed mainly on the pier and slip plan. The piers in general have wide aprons outside of the transit sheds, which are found desirable in the handling of cotton between the shed and the vessel. The old wooden structures are rapidly being replaced by concrete fireproof sheds and it is understood that the work of modernizing the facilities will continue as rapidly as funds will permit. The waterfront on the whole is maintained in excellent condition; no important criticism can be made of the terminal developments of the Galveston Wharf Co., nor of the Southern Pacific Terminal Co. Since the port handles such large quantities of cotton and sisal, however, efforts should be continued along the lines of securing greater safety and correspondingly lower insurance rates.

There are enormous concentration warehouses which are generally one-story structures covering a large area. The concentration plants are located back from the waterfront, the cotton being drayed from them to the transit sheds by special types of trucks developed for the convenient handling of this commodity. Cotton is not stored in piles, but on end with marks plainly visible. This method, although requiring greater ground space, has been found more economical than tiering.

There are four grain elevators, of which two are operated by the Galveston Wharf Co., one is owned and operated by a flour-mill company, and the fourth is operated by a corporation by lease from the Southern Pacific Terminal Co. Excellent loading records have been made at these elevators, and they are well known for their ability to handle large quantities of grain expeditiously. Examination of the statistics contained in this report will show that the amount of grain handled through the port differs widely from year to year. Ordinarily the capacity of the elevators is sufficient to meet all

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requirements, but there have been times when congestion has occurred. With a total capacity of 3,600,000 bushels, which will be increased to 5,000,000 bushels on completion of elevator B, it is believed that the present needs are well provided for.

The Galveston Wharf Co. suffers by reason of the fact that it must compete with the rail and municipally owned facilities. In order to operate successfully it must assess charges for its services covering the actual cost involved plus a reasonable profit, whereas its rail competitor may be satisfied with charges which are not compensatory for the actual service performed, and make up the deficiency from line-haul revenue. The Galveston Wharf Co. makes a charge of $4.05 per car for switching from junction with connecting carrier to its piers, while the Southern Pacific Co.'s charge for switching to the piers of the Southern Pacific Terminal Co. is $3.15. The railroads entering the port absorb only $3.15 on these switching movements, but the same carriers absorb the total charge of $6.30 on similar movements at Texas City and Houston. This situation appears to indicate a discrimination against the Galveston Wharf Co.

The actual movements of traffic through the Texas ports show that they draw iron and steel exports from points as far east as Pittsburgh and exports of long-staple cotton from the Imperial Valley, Calif. Their territory thus covers a fan-shaped area extending nearly across the United States, and as far north as Minnesota. The enormous wheat exports through Galveston are drawn chiefly from Kansas, Oklahoma, and north Texas. The Gulf ports at present form the most economical outlet for this area; it is too far from the Great Lakes to avail itself economically of the easterly routes through north Atlantic ports or Montreal under the present combined rail and water rates. To some extent the Galveston wheat territory includes Missouri River points, but the Missouri River grain has recently moved more particularly to New Orleans, while it formerly moved to Baltimore, Philadelphia, and other north Atlantic ports. Grain shipped from Galveston and other Gulf ports is largely taken by tramp ships on a charter basis.

The local territory in which the Galveston Bay ports have lower rates than New Orleans extends westward to the Mexican boundary line and to points in eastern New Mexico.

The important Texas ports enjoy import and export all-rail rates to interior points as far east as Cincinnati which are the same as those applying through New Orleans. The export rates on cotton from certain points in Texas, Oklahoma, and New Mexico are one-half cent higher per 100 pounds to Galveston and Texas City than to Houston. To what extent this has affected the movement of cotton through Galveston can not be stated; exports from Galveston during 1920, 1921, and 1922 were 841,714 tons, 742,433 tons, and 628,975 tons, respectively, compared with 70,989 tons, 119,192 tons, and 203,074 tons through Houston during the same years. The larger share of the cotton moves to port for concentration on the domestic rate, which is in general 4½ cents lower than the export ship-side rate, and is the same to Galveston, Houston, and Texas City. There appears to be no difference in interstate class rates to these ports.

Favorable ocean rates through Galveston Bay ports on grain are due in some measure to the requirements of vessels carrying cotton. Cotton is a comparatively high-priced product which does not demand the lowest freight rates. It generally moves from these ports in large lots, but owing to its low specific gravity it does not make a satisfactory full cargo. Vessels booking cotton for export therefore seek some deadweight cargo in order to provide a well-balanced load. Grain, flour, iron and steel, and sulphur are successfully employed for this purpose. A vessel having booked a remunerative cargo of cotton is in a position to offer a very low rate on the deadweight cargo needed to balance the load. Under these conditions, the rail rate from producing point to the port does not control the movement. The combination of cotton and grain is particularly advantageous because of the fact that both commodities are exported to the same parts of the world.

A study of the traffic through Galveston indicates that while there are excellent load conditions on outbound traffic to the United Kingdom and Europe, there is very little return cargo. The situation is presented of a large export movement to the United Kingdom and Europe and a large import movement from Mexico and the West Indies. This is made clear by the figures prepared by the Shipping Board showing the origin of the principal imports and the destination of the principal exports through Galveston during the calendar year 1921. Out of a total of 1,900,000 long tons of imports of which the origin is given, only 30,000 tons came from the United Kingdom and Europe, while 91,700 tons came from the West Indies, 4,300 tons from Central and South America, 2,400 tons from India, and 1,810,000 tons from Mexico. Of the last named, 1,800,000 tons consisted of oil. The destination of 3,396,000 long tons of exports is also shown by the Shipping Board figures. Of this total, 3,172,000 tons went to the United Kingdom and Europe, 15,000 tons to the West Indies, 40,000 to South America, and 36,000 tons to Mexico. Exports amounting to 24,000 tons went to Australasia, 88,000 to the Orient, 5,000 to Pacific Canada, and 16,000 to Atlantic Canada, but there was no return movement from these places.

As already indicated, the financial and transportation interests at Galveston have been chiefly in cotton and grain, and the development of general import and export business has apparently not

received the attention which is justified by the geographical and rate relationship of the port to our producing and consuming centers. While the traffic through Galveston has wide distribution, reference to the actual figures will show that there was only a small movement of many commodities listed, and that in the aggregate the general cargo handled through the port constitutes only a small proportion of the total. If the port is to increase its share of this character of business, which is highly important to the maintenance of regular and economical steamship service, an aggressive policy with reference to the development of trade will be necessary on the part of local interests. If such a policy be adopted, it will be desirable for Galveston to provide better facilities for the accommodation of miscellaneous high class traffic, including safe storage remote from inflammable materials, adequate handling facilities, and other necessary auxiliaries.

As a principle, the War Department and the Shipping Board are favorable to public control and operation of our ports, and this principle obviously has for its object the protection of the public interests. However, the facilities established and improved from time to time by the Galveston Wharf Company, including its belt-line service, merit the highest commendation. It would be advantageous if the entire switching business of the port were placed under one jurisdiction and arrangements made for the absorption by carriers of the full amount of the charge for switching from junction with connecting lines to all piers.

List of piers and wharves, Port of Galveston, Tex.

SOUTH SIDE OF CHANNEL.

Reference No. on map.	Names of terminals.	No. of page on which described.
1.	Mexican Petroleum Corporation Dock	45
2.	Gulf Refining Co. Oil Dock	45
3.	Santa Fe transfer slip	45
4.	Pier 10, Galveston Wharf Co	46
5.	Piers 11 and 12, Galveston Wharf Co	46
6.	Pier 14, Galveston Wharf Co	46
7.	Pier 15, Galveston Wharf Co	47
8.	Piers 16 and 18, Galveston Wharf Co	47
9.	Piers 19 and 20, Galveston Wharf Co	47
10.	Pier 21, Galveston Wharf Co	48
11.	Pier 22, Galveston Wharf Co	48
12.	Piers 23–26, Galveston Wharf Co	49
13.	Piers 27 and 28, Galveston Wharf Co	49
14.	Piers 29–33, Galveston Wharf Co	49
15.	Pier 34, Galveston Wharf Co	50
16.	Piers 35 and 36, Galveston Wharf Co	50
17.	Piers 37 and 38, Galveston Wharf Co	50
18.	Piers 39 and 40, Galveston Wharf Co	52
19.	Pier 41, Galveston Wharf Co	52
20.	Pier A, Southern Pacific Terminal Co	52
21.	Pier B, Southern Pacific Terminal Co	53
22.	Pier C, Southern Pacific Terminal Co	53
23.	Rio Bravo Oil Co	53

NORTH SIDE OF CHANNEL.

24.	Seaboard Transportation & Shipping Co	54
25.	Galveston Dry Dock & Construction Co	54
26.	Suderman & Young	54
27.	Gulf Fisheries Co	55
28.	J. J. Kane	55
29.	Chas. Clarke & Co	55
30.	United States immigration pier	56
31.	United States quarantine wharf	56

THE PORT OF HOUSTON, TEX.

PORT AND HARBOR CONDITIONS.

GENERAL DESCRIPTION.

The city of Houston is situated in the southeastern part of the State of Texas, on Buffalo Bayou. By rail it is 362 miles west of New Orleans, La., and 48 miles northwest of Galveston, Tex. The port of Houston lies about 7 miles east of the city of Houston on Buffalo Bayou, at the head of the deep-water channel connecting with Galveston Bay. A light-draft channel extends from the turning basin at the port to Main Street, Houston.

For information relative to the channels of Galveston Bay and entrance, see pages 1 and 2.

TIDES.

The mean tidal range at Morgan Point, where the Houston Ship Channel leaves Galveston Bay, is about 0.5 feet, with occasional high tides of 3 feet above mean low tide. During strong northers the water is depressed from 1 to 2 feet, giving an extreme variation of 5 feet. The tidal range at the turning basin is about one-half foot.

TIDAL CURRENTS.

Tidal currents in the river section of the Houston Ship Channel have a velocity of about 1 mile per hour.

Information relative to the tidal currents in Galveston Bay will be found on page 2.

ANCHORAGE.

The approved anchorage ground is in Bolivar Roads, Galveston Harbor, a full description of which will be found on page 3.

Three mooring places have been provided, consisting of 4 clusters of 16 piles each. Two of these are in Galveston Bay 8½ and 17½ miles from the entrance to the Houston Ship Channel, and the other in San Jacinto Bay, 1 mile above Morgan Point.

The following are extracts from the rules and regulations governing the use of the Houston Ship Channel, Tex.:

Except in cases of great emergency, vessels shall not anchor in the Houston Ship Channel nor in the Port Houston turning basin, and if anchored under

such circumstances shall be placed as near the edge of the channel or turning basin as possible, so as not to interfere with free navigation nor obstruct the approach to any pier. Vessels must move from such position as soon as the emergency ceases, or when so ordered by the district engineer, Engineer Department at Large, in charge of the locality, or by his duly authorized representative.

Vessels in collision in the channel or turning basin must, if still afloat and in a condition making anchorage necessary, be immediately removed to the approved anchorage grounds in Bolivar Roads, Galveston Harbor, or, if in such condition that beaching is necessary, they shall be temporarily beached on the north side of Pelican Island, southwest of Bolivar Point, if possible to remove them to that island; otherwise, in the old bayou, either at Irish Bend Cut-off or at Lower Clinton Cut-off below Clinton.

In no case following accidents of fire or collision will a vessel be allowed to remain either anchored or grounded in the channels, or beached at any place where it endangers other vessels, while settlement is pending with the underwriters.

WEATHER CONDITIONS.

Open season for navigation.—The Houston Ship Channel and Galveston Bay are navigable throughout the year.

Prevailing winds.—The prevailing wind at the port of Houston is southeast. Information relative to the prevailing winds in Galveston Bay will be found on page 3.

Fogs.—There is very little fog in the vicinity of the port. The fogs encountered in Galveston Bay and vicinity are described on page 4.

Precipitation.—The Weather Bureau reports for a period of 21 years show a mean annual precipitation of 46.95 inches. The rainfall was heaviest during this period in May with 4.98 inches and June with 4.78 inches. The table below gives the mean precipitation for each month.

Temperature.—The annual average temperature is 67° F. Weather reports for the past 12 years show the annual mean maximum temperature to be 78.3° F. and the mean minimum 60.5° F.

The following meteorological data have been furnished by the Weather Bureau, United States Department of Agriculture:

Meteorological data.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Daily mean maximum temperature for 12 years (°F.).												
63.6	65.8	71.9	76.9	83.3	89.8	92.1	92.1	88.3	80.5	71.6	63.4	78.3
Daily mean minimum temperature for 12 years (°F).												
45.6	47.9	53.7	59.7	66.2	72.2	74.5	74.4	70.9	61.9	52.6	46.2	60.5

Meteorological data—Continued.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Maximum wind velocities and direction for 33 years.												
38 S.	39 E.	46 SE.	54 SE.	39 E.	60 SE.	36 E.	80 SE.	38 E.	34 W.	40 NW.	42 NW.	80 SE.
Prevailing direction of wind for 5 years.												
SE.	S.	S.	S.	S.	S.	S.	S.	S.	N.	SE.	N.	S.
Mean precipitation (inches) for 21 years.												
3.45	3.11	3.14	3.66	4.98	4.78	4.09	4.22	4.27	3.73	3.49	4.03	46.95

HEALTH CONDITIONS.

The general health conditions at Houston are good.

BRIDGES.

There are 11 railroad and highway bridges which cross Buffalo Bayou between Franklin Avenue, Houston, and the turning basin at Port Houston. Details of these bridges are contained in the following table:

Location.		Owner.	Kind: Fixed, swing, vertical lift, etc.	Number of spans.	Channel spans.		Purpose for which bridge is used.
Miles above mouth.	Nearest town, street, etc.				Clear width normal to channel center.	Clear height lowest point of supporting structure above mean low water.	
					Feet.	*Feet.*	
16¾	Houston	Galveston, Harrisburg & San Antonio Ry.	Swing	2	95	35	Railway.
17¾	do	Houston Belt & Terminal Ry.	do	2	103	35.5	Do.
20¾	do	San Antonio & Aransas Pass Ry.	do	2	111	36.8	Do.
21¼	do	International & Great Northern Ry.	Bascule lift	1	91.4	30	Do.
21¾	Hill St., Houston.	City of Houston	Swing	2	131	36	Highway.
21¾	Mary St., Houston.	Houston Belt & Terminal Ry.	Bascule	1	80.5	38	Railway.
22¼	McKee St., Houston.	City of Houston	Swing	2	110.5	42.2	Highway.
22¼	Allen St., Houston.	Galveston, Houston & Henderson Ry.	do	2	86.5	39	Railway.
22¾	San Jacinto St., Houston.	City of Houston	Concrete arch.	1	110	38.8	Highway.
22.9	Main St., Houston.	do	do	1	150	54.2	Do.
23.1	Franklin Ave., Houston.	do	Fixed concrete.	1	47	28.8	Do.

Bridges authorized by State law. No closed periods.

BRIDGE REGULATIONS.

Bridges of the Galveston, Harrisburg & San Antonio Railroad: Regulations prescribed August 11, 1919, as authorized by section 5 of act of Congress of August 18, 1894:

1. When, at any time between the hours of 5 a. m. and 9 p. m., a vessel, tug, or any water craft unable to pass under the bridge approaches it, the signal of intention to pass through the draw and for the draw to be opened shall be three blasts of a whistle or horn blown on the craft. When such signal is given, the bridge shall be cleared and the draw opened forthwith, unless the bridge tender has information that a train is expected to pass across the bridge within five minutes, in which event opening of the draw may be delayed for such passage, but in no case shall the opening of the draw be delayed more than ten minutes after the giving of signal by an approaching craft. If the draw is ready to be opened immediately, the draw operator shall answer immediately by three blasts of a whistle or horn blown on the bridge; and if the draw is not ready to be opened immediately, he shall answer by one short blast of a whistle or horn blown on the bridge.

2. When a vessel, tug, or any water craft unable to pass under the bridge desires to pass through the draw at any time between the hours of 9 p. m. and 5 a. m., notice of such intention shall be given to the bridge tender of the bridge by telephone or otherwise, either at the bridge before 9 p. m. or at his residence thereafter. If the notice is given between the hours of 5 a. m. and 9 p. m., or if at least one-half hour has elapsed since it was given, the draw shall be promptly opened at the time specified in the notice on signal given and answered as hereinbefore prescribed.

3. The owner of the bridge shall keep conspicuously posted thereon, in such manner that it may be easily read at any time, a notice stating how the bridge tender may be reached and shall arrange for ready telephonic communication with him at any time between 9 p. m. and 5 a. m., either from the bridge or from its immediate vicinity.

4. These rules and regulations shall take effect and be in force from and after August 15, 1919.

Bridge of the Galveston, Houstom & Henderson Railroad: Regulations prescribed October 29, 1921, as authorized by section 5, act of Congress of August 18, 1894:

1. When a vessel, tug, or any water craft unable to pass under the bridge desires to pass through the draw at any time, notice of such intention shall be given to the chief dispatcher of the Galveston, Houston & Henderson Railroad in Houston, Texas, by telephone or otherwise, and the draw shall be opened within two hours after such notice has been given.

2. The owner of the bridge shall keep conspicuously posted thereon, in such manner that it may be easily read at any time, a notice stating exactly how the chief dispatcher may be reached, giving his telephone number and location, and shall arrange for ready telephonic communication with him at any time, either from the bridge or from its immediately vicinity.

3. The owner of the bridge shall keep the operating machinery of the draw in serviceable condition, and shall have the draw opened and closed at frequent enough intervals to make certain that the machinery is thus kept in proper condition for its satisfactory operation.

4. These rules and regulations shall take effect and be in force from and after November 30, 1921.

HARBOR IMPROVEMENTS BY THE UNITED STATES.

The improvement of the waterway connecting Galveston Harbor with the city of Houston was first authorized by the river and harbor act approved June 10, 1872. The project was modified and enlarged upon from time to time. The existing project was adopted by the river and harbor acts of March 3, 1905, March 2, 1907, and March 2, 1919. This project provides for a channel 30 feet deep at mean low water, 250 feet wide across Galveston Bay, and 150 feet wide in the river section from Morgan Point, through San Jacinto River and Buffalo Bayou, with suitable widening of the channel in front of the wharf at Manchester, and with certain cut-offs and easing of sharp bends to the head of Long Reach, where it ends in a turning basin about 1,000 feet wide and 30 feet deep. The project also provides for a light draft extension of this channel 8 feet deep and 40 feet wide through Buffalo Bayou from the turning basin to the foot of Main Street in Houston, Tex. and the construction of a dike 26,000 feet long to protect the channel in upper Galveston Bay. The existing project is about 65 per cent complete.

The entire channel in Galveston Bay, 132,400 linear feet, has been completed to project dimensions, with an additional 23,268 linear feet in San Jacinto Bay and River above Morgan Point. In addition about 11,000 linear feet of the channel at four easings of bends to 3,000-foot radius have been partly completed to the existing project dimensions. The turning basin on its south and west sides has been widened to the harbor line, and the widening of the channel at Manchester has been completed to full width and length, but to only 25 feet depth.

The light-draft extension above the turning basin was completed in 1908. The ruling depths at mean low tide on June 30, 1922, were as follows: Through Galveston Bay, 29.5 feet; thence to mouth of Vinces Bayou, a distance of 20 miles, 25 feet; thence to the turning basin, 22 feet, with 26.5 feet in the turning basin; thence to Houston, 7.5 feet.

PUBLIC TERMINAL IMPROVEMENTS.

The city of Houston has constructed 3,649 linear feet of wharves at the turning basin with transit sheds supported by a concrete warehouse and covered cotton storage sheds. At Manchester, 2 miles below the turning basin, there has been constructed a concrete wharf with a steel transit shed. The city also owns a large, open concrete wharf at the foot of Main Street. These facilities are served by 12 miles of municipally owned terminal railway tracks, connecting with various railroads entering Houston, also an extension of 8 miles along the south side of the channel to connect with oil refineries and other industries.

In addition to the facilities above described, the port commission has under construction a large terminal improvement on the north side of the turning basin which is being constructed from the proceeds of a $4,000,000 bond issue voted December 30, 1922.

The Port Commission has under construction 3 wharves with a total length of 1,720 feet and is preparing the site for 3 more with a length of 1,500 feet. Of the wharves comtemplated, Nos. 11, 12, 13, and 15 will be provided with sheds, while No. 14, for the time being, will be left open, inasmuch as it is the main grain berth. Wharf No. 10 is an open wharf for the handling of bulk commodities, being especially equipped for these features with seven railroad tracks upon it as well as large storage areas and gantry crane rails. These new facilities are to be provided with a grain carrier and equipment connected with a million-bushel grain elevator to be constructed in the rear of the wharves. While the initial construction of the elevator provides for only 1,000,000 bushels storage capacity, over 400,000 bushels of this is in the workhouse, this plan having been designed with a view to ultimate increase of storage up to 4,000,000 or 6,000,000 bushels. In addition to the wharves with their necessary railway track and highway connections there is under construction a railway classification yard. This yard is to be located immediately north of the turning basin and the proposed unit, and will have an ultimate capacity of 5,000 cars. From this yard port traffic to the wharves will move across to the south side and also directly to the new wharves; while the grain traffic and other business going further down stream on the north side will leave the yard on different tracks, thus keeping the grain business entirely separate from that of the general wharves with a view to avoiding the congestion so often experienced in ports during the grain and cotton season.

OWNERSHIP OF THE WATER FRONT.

The length of the water front at the harbor proper (the turning basin) is between 7,500 and 10,000 feet. Of this frontage the city owns 3,900 feet on the south side and about 3,000 feet on the north side of the basin, various private individuals and corporations owning the balance. In addition, the city owns considerable frontage on the upper channel, which is the 7-mile section between the turning basin and the foot of Main Street in the city proper. The city has a total frontage of more than 4 miles.

PORT CUSTOMS AND REGULATIONS.

FEDERAL ACTS AND REGULATIONS.

General regulations.—The port is open at all hours. Vessels may be cleared by masters or agents between the hours of 9 a. m. and 4.30 p. m.

PUBLIC HEALTH SERVICE, TREASURY DEPARTMENT.

Quarantine.—The procedure with reference to quarantine is the same for the port of Houston as for the port of Galveston. Information on this matter is given on page —.

Hospitals.—The city of Houston is well supplied with public and private hospitals. The following list gives the location of the hospitals in and near the city:

Baptist Sanitarium and Hospital, Lamar and Smith Streets.
Methodist Hospital, 3020 San Jacinto Street.
Municipal Hospital, Camp Logan.
St. Joseph's Infirmary, 1910 Crawford Street.
Southern Pacific Hospital, North Side.
Union Hospital, 1118 Howard Street.
Veterans' Hospital, Camp Logan.

See page 8 for information relative to the regulations of the United States Public Health Service.

CUSTOMS SERVICE.

There is no customhouse at the port of Houston. The customs department maintains an office in the Federal building, with a suboffice on wharf No. 1 at the turning basin. It is open from 9 a. m. to 4 p. m. except on Saturdays, when it closes at 12 o'clock noon. The working hours of the customs inspectors are from 9 a. m. to 4 p. m. unless special permit is granted by the collector of customs for overtime work. The customs department has no bonded warehouses or storage facilities.

Cargo is handled from shipside to consignees' warehouse or place of business by railway cars or motor trucks. Shipments are handled by the various railroads through an operating agreement with the International & Great Northern Railway over the Municipal Harbor Belt Railway and by the Southern Pacific Lines or Terminals, on the north side of the channel. The Mulane Truck Co., care of Shippers Compress, handles a greater portion of the shipments by motor truck,

and the W. L. Jones Co. is now inaugurating a lighterage service for cotton between the compress on the upper channel and shipside.

For a digest of the principal regulations of the customs service affecting vessels and freight in foreign and coastwise commerce, see page 10.

IMMIGRATION SERVICE, DEPARTMENT OF LABOR.

Information relative to the Immigration Service is given on page 14.

FEDERAL DOCUMENTS.

A list of the documents which vessels are required to have is given on page 15.

LOCAL REGULATIONS.

General Harbor Regulations.

FORBIDDEN ANCHORAGE.

1. It shall be unlawful for any vessel or barge to anchor in the turning basin or channel. (Aug. 11, 1919, Ord. Bk. 8, p. 41.)

SPEED LIMIT.

2. No steam vessel shall exceed a speed limit of eight knots per hour in any part of the harbor; and provided further, that upon approaching another vessel or barge under way, moored, anchored, or fastened to a wharf, or under repair or construction, said vessel shall slow down to the slowest speed at which her steerage way may be maintained; and provided further, that no steam vessel may pass any dock or wharf at a greater speed than five knots per hour. (Id., sec. 17.)

USE OF PORT DURING STORMS OR FLOODS.

3. In time of storm or flood it shall be the duty of the director of the port to issue warnings and order the port closed to navigation, or navigation restricted until such time as in his judgment traffic may again be resumed, and during such time to restrict the movement of any and all vessels within said port with a view to safety and to avoiding a blocking of the channel. (Id., sec. 16.)

RESTRICTION OF TOWAGE.

4. The director of the port shall be authorized to stipulate the number of barges or the tonnage or the size of rafts which shall be allowed to be towed through said port by any certain power boat or towboat, and that, except in the case of seagoing barges or vessels, it shall be unlawful for a towboat to tow a barge or barges while lashed to the side of the same, and that in all towing, except in the case of seagoing barges and vessels, the barge or barges shall be in a single line astern of the towboat or boat towing same. (Id., sec. 14.)

COLLISIONS.

5. In the event of a collision between two vessels or between a vessel and any wharf, dock, or pier, written report of the same shall, within twenty-four hours, be furnished said director of the port by the pilot and by the master, owner, or agent of said vessel, as well as the owner, agent, or operator of said dock or facility; provided, that in the case of a minor collision occurring where a boat is under way and proceeding to the open sea, there being no need of repair, said report may be mailed by the master of said boat from the next port which it passes; and provided further, that in all cases of collision no report of an owner or agent shall relieve the pilot of the duty of rendering his report within the specified time. (Id., sec. 13.)

LIGHTS ON MOORED VESSELS.

6. All vessels or barges shall display lights from sunset to sunrise while lying at any wharf or dock, steel vessels to conform to navigation rules applying when moored or anchored in the channel, and barges to display white lights visible all around the horizon located at least eight (8) feet above the water line on their outside or channel corners; provided, that said regulation shall not apply to pleasure craft and other small vessels and barges which may be located in the old channels or other small waterways which are not a part of the Houston Ship Channel proper. (Id., sec. 11.)

VESSELS TO BE PROPERLY MOORED.

7. No barge or vessel shall be moored or fastened to a dock in such a manner that one end shall be free to swing athwart stream. (Id., sec. 12.)

VESSELS AT DOCKS NOT TO INTERFERE WITH NAVIGATION.

8. The director of the port shall be authorized to state the total number and nature of vessels which may be docked at the same time at any certain dock with the authority to stipulate the manner in which they shall be placed, with a view to the protection of navigation and the maintaining of the thoroughfares free of obstruction. (Id., sec. 10.)

RESPONSIBILITY OF DOCK OWNERS FOR INFRACTION OF ORDINANCES AT THEIR DOCKS.

9. The owner, agent, or operator of any private pier, wharf, or dock shall be held responsible for the proper conformation to the rules of the harbor of all vessels or barges while, with his knowledge or permission or on business requiring their presence at said dock, said vessel or barge be fastened to the same, and that the owners, agents, operators, or masters of vessels or barges shall not by the above be relieved of responsibility for violation of the rules of the harbor by their vessels or barges wherever moored, but shall likewise be held liable for all violations of the harbor rules by said vessels or barges. (Id., sec. 9.)

REMOVAL OF WRECKS, OBSTRUCTIONS, ETC.

10. The director of the port or his authorized representative shall have the right at any time to visit and inspect any and all wharves, piers, docks, or other facilities and aids to wharfage and navigation located along the navigable waters of said port, with a view to maintaining at all times the safe usage of said facilities and of correcting any menace to navigation, and for the purpose of keeping the basins, channels, and thoroughfares free of obstructions said director of the port shall cause written notice to be served on the owners, agents, consignees, or persons in possession of any wreck, vessel, obstructing material, or structure, or may post a notice thereon at his discretion, requiring its removal within a reasonable period of time thereafter, and on failure to comply therewith within the time mentioned therein such failure shall constitute an offense and such person above mentioned receiving such notice shall be subject to the penalties hereinafter prescribed; and, in addition thereto, the director of the port, with the ap-

proval of the mayor and city council, may remove said wreck, vessel, obstructing material, or structure at the cost and expense of the owner, agents, consignees, or persons in possession of same, and the said wreck, vessel, obstructing material, or structure, together with the tackle, apparel, furniture, and freight money thereof, if any, shall be subject to a lien in favor of the city of Houston for the security and payment of the cost of the raising and removing of the same until said cost is paid to the city of Houston; when possession by the city of Houston of any such property has continued for sixty days after the aforesaid charges accrue and the charges so due have not been paid, it shall be the duty of the director of the port on behalf of the city of Houston to notify the owner, agent, consignee, or person in possession of same, if in the State and his residence is known, to come forward and pay the charges due, and on his failure within ten days after such notice has been given him to pay said charges the director of the port on behalf of the city of Houston is authorized and directed after twenty days' notice to sell said property at public sale and apply the proceeds thereof to the payment of said charges, and shall pay the balance, if any, to the person entitled to the same. Such notice shall be given by publication once in a daily newspaper published in Houston, Texas, and in addition thereto the director of the port may give ten days' notice by at least twenty printed handbills to be posted in conspicuous places, some of them in the immediate neighborhood of said locality, setting forth a full description of said property to be sold, the charges due thereon, and the time and place of selling same. (Id., sec. 8.)

LIFE PRESERVERS TO BE ON ALL DOCKS.

12. It shall be the duty of each and every owner, agent, or lessee of any kind of wharves, docks, or piers within the corporate limits of the city of Houston to furnish and keep in place on said wharf, dock, or pier suitable ring life preservers with suitable ropes or lines at least two hundred (200) feet in length attached thereto in suitable places on said wharf, dock, or pier, convenient and accessible at all times during the day and night, for the purpose of rescuing persons from drowning. And said life preservers shall be kept on said wharves, docks, or piers in boxes properly labeled, of a size, character, and material to be prescribed by the director of the port, who shall direct where said boxes shall be placed on each and every wharf, dock, or pier.

It shall be unlawful for any person or persons to molest, interfere with, break, take away, or destroy said boxes or life preservers contained therein: provided, however, that this section shall not prohibit the removal of the life preservers from said boxes for the purpose of saving life. (Id., sec. 19.)

PERMITS FOR CONSTRUCTION OF DOCKS, ETC.

13. From and after the passage of this ordinance any person or persons desiring to construct or alter any wharf, dock, pipe line crossing, or other similar facility along the navigable waters of said port, shall, before said construction or alteration, receive a permit from the director of the port, which shall be issued only when recommended by the harbor board and authorized by the city council; that the application for such permit shall be made on a blank form furnished by the director of the port and shall state the use to which said facility is to be put, the materials to be used, the dimensions and estimated cost of the proposed facility, dock, or wharf, and the probable time to be occupied in its erection; that full and complete copies of the plans and specifications, in duplicate, of such proposed work and such structural detailed drawings of such proposed work as the director of the port may require shall be filed for all such work, as well as a map or plan showing the proposed location of the work; that before construction is begun the director of the port shall by survey determine where said facility may be located and set the necessary stakes to locate the corners or limits of said facility. One set of said plans and specifications shall be kept in the office of the director of the port, and the other set, properly stamped by the said director of the port, shall be kept at the site of the work in course of erection. The cost of such permit shall be according to the following scale, said amount to accompany application for such permit:

Dock, wharf, or facility under $1,000 cost at any location, permit charge twenty dollars.

Dock, wharf, or facility, $1,000 or over in cost, between Main Street and turning basin, twenty-five dollars.

Between turning basin and battle ground, sixty dollars.

Between battle ground and Morgans Point, seventy-five dollars.

It shall be the duty of the director of the port to inspect all construction as often as may be necessary to see that such construction or alteration is in accordance with the permit, and said director of the port or his authorized agent is hereby given authority to visit and inspect any dock, wharf, or other facility within the limits of the jurisdiction of the city of Houston in the performance of his duties, and to order and compel the suspension of any work not being done in accordance with the issued permit or being done without a permit having been secured, and when authorized by the mayor and city council, said director of the port may order removed such work or works and after the expiration of a reasonable time, such orders not having been complied with, shall remove same, cost of removal to be at the expense of the owners or agents of said facility. (Id., sec. 4.)

PENALTY FOR VIOLATION OF FOREGOING REGULATIONS.

14. Any person or persons, corporation or corporations, or owner, agents, or master of a vessel or barge who shall violate any of the provisions of this ordinance or regulations issued by authority thereof shall be guilty of a misdemeanor, and upon conviction in corporation court shall be punished by a fine of not less than twenty-five dollars nor more than two hundred dollars, and each and every day's violation shall constitute a separate offense. (Id., sec. 21.)

DISCHARGING OF OILS, ETC., INTO CHANNEL.

15. It shall hereafter be unlawful for any person, persons, firm, or corporation to deposit, place, or discharge into the Houston Ship Channel, between Main Street viaduct and Morgan's Point, or into Buffalo Bayou or White Oak Bayou or the tributaries of either within or without the limits of the city of Houston, either directly or through private or public sewers, any sanitary sewage, butcher's offal, garbage, dead animals, gaseous, liquid, or solid matter, oil, gasoline, residuum of gas, calcium carbide, trade waste, tar or refuse, or other matter which is capable of producing floating matter or scum on the surface of the water, sediment in the bottom of the channel, or the odors and gases of putrefaction. (Nov. 18, 1918. Ord. Bk. 7, p. 417.)

REGULATIONS GOVERNING OPERATION OF MUNICIPAL DOCKS AND TERMINALS.

16. *Definition of wharf.*—The term "wharf" embraces every structure to which vessels make fast, or on which merchandise is discharged or from which it is loaded. (Feb. 5, 1917. Ord. Bk. 6, p. 490, sec. 1.)

17. *Wharfmaster in charge of municipal wharves.*—The wharfmaster represents the harbor board and the city of Houston in all matters and has entire charge of docks, wharves, warehouses, and all other facilities in and about the harbor

belonging to the city of Houston, and vessels must be moved or shifted under his direction.

The wharfmaster has control of all vessels and will direct their movement as, in his judgment, the safety of shipping and the business of the port requires.

The master, agent, or owner of a vessel refusing or neglecting to obey the orders of the wharfmaster in any matter pertaining to the regulation of the harbor, or removal or stationing of such vessel, is guilty of a misdemeanor and liable to a fine not exceeding two hundred dollars. (Idem.)

18. *Information given by wharfmaster.*—The wharfmaster will at all times give masters of vessels all information in his power as to the securing of coal, water, pilots, tugboats, interpreters, etc. Shippers and masters of vessels will promptly report to the secretary of the harbor board any neglect of duty or incivility on the part of the employees of the harbor board. (Idem.)

19. *Wharfmaster bound by regulations.*—The wharves are the property of the city of Houston, and the wharfmaster can grant permission to vessels to tie up or remain at the wharves only in strict compliance with these regulations and the rules of the harbor board. (Idem.)

20. *Wharfmaster can inspect vessels.*—The wharfmaster and his authorized assistants are hereby authorized to enter upon and inspect any vessel, and to ascertain the kind and quantity of merchandise or cargo thereon, and no person shall hinder or molest the wharfmaster or any of his assistants or refuse to allow him to enter upon any vessel for the purposes specified in this rule. (Idem.)

21. *Wharfmaster may decide any disputes.*—The wharfmaster shall be in complete charge of the city's facilities and any dispute regarding the use of any of the facilities belonging to the city shall be referred to the wharfmaster, and his decision shall be binding and final on all parties interested. Vessels shall be berthed as he directs, and in case it is necessary he shall direct the spotting of cars on municipal tracks and any other matters which are necessary to facilitate the use of the city's improvements. (Idem.)

22. *Application for berth at municipal docks.*—Vessels desiring berths at the wharves will make application to the wharfmaster, and no vessel shall be allowed to occupy a berth at the city wharves until it has been assigned by the wharfmaster, nor will any vessel be allowed to move from one berth to another except upon permission of the wharfmaster. An application for a berth must state the length, draft of vessel, kind of cargo, and locality desired. No application shall be entertained unless the vessel be in the channel and ready to be docked. Berths shall be assigned in the order of application, provided that vessels ready to discharge cargoes shall have preference over those ready to receive cargoes, and provided further that vessels engaged in regular service covering all classes of cargoes shall have preference rights over vessels not regularly engaged in carrying cargo between any port or ports and the port of Houston. Such portion or portions of the wharves as will be necessary for berth space for the regular line vessels mentioned herein shall, at the option and selection of the harbor board, be reserved exclusively for such regular line vessels. However, if said reserved space be unoccupied and another than a regular line vessel or vessels desire to occupy said reserved space, said other vessel or vessels may, at the option and with the consent of the wharfmaster, occupy said reserved space until the same be needed for regular line service, and then and in such event said vessel or vessels so occupying said reserved space, whether loading or unloading is finished or unfinished, shall at once move therefrom and vacate the same at its own expense and permit the regular line vessel or vessels to occupy said reserved space and berth thereat, subject to special arrangement. (Idem.)

23. *How to make fast.*—Vessels when being moved into a slip or alongside a wharf must approach "head on," and when in a slip must lie head toward the shore, their offshore anchors suspended ready for dropping, their lower and topsail yards braced "sharp up" on their inshore braces, except when in actual use discharging or loading cargo; and, when required by the wharfmaster, their movable fore-and-aft spars, jib boom, and martingale must be rigged in.

No person shall make fast any rope or mooring to any wharf (except to the mooring piles, mooring bitts, or rings provided for this purpose), or to any shed or pile supporting the same, or to any dolphin or fender piles.

Vessels lying at wharf are strictly prohibited from stretching mooring lines across the slip to the opposite wharf, without first obtaining the permission of the wharfmaster.

Vessels must haul or go into the stream at their own expense when ordered to do so by the wharfmaster. Upon failure to obey such order the wharfmaster shall have power to cause such removal at the expense of such vessel or vessels. (Idem.)

24. *Vessels to stand clear of fenders.*—Vessels moving along the docks must stand clear of fender piles and do no damage to the wharves. (Idem.)

25. *Person in authority on board.*—A vessel anchored or moored in the harbor or lying in a slip or dock must at all times have on board at least one person in charge of said vessel who has authority to take such action, in any emergency, as may be demanded. If, in the opinion of the wharfmaster, it becomes necessary, a vessel may be moved by his order at the expense of the owner, and the owner and the vessel shall be liable for all damage that shall arise thereby. (Idem.)

26. *No person nor craft allowed under wharves.*—No person nor craft of any description shall be allowed under any of the piers, wharves, platforms, floors, pilings, or any other part of the structures belonging to the city. Small craft, such as rowboats, launches, etc., must remain outside of the fender line of the wharf and must not be tied to any fender pile, but may tie to such piles or other parts of the structure as directed by the wharfmaster, or his authorized agents. (Idem.)

27. *Report on cargo.*—The owner, agent, manager, consignee, master, or person in command of any vessel must deliver, at the time of her arrival at any wharf or slip, at the office of the wharfmaster, a full and correct statement, signed and certified to by him, on blank furnished by the harbor board, of all merchandise and cargo of every kind intended to be discharged from such vessel at said wharf, specifying the character and quantity of each kind of such merchandise and cargo, as per schedule adopted by the board, and said person in command must, before the departure of vessel, deliver at the office of the wharfmaster a full and correct statement, signed and certified to by him, on blanks furnished by the board, of all merchandise and cargo of every kind received on such vessel at said wharf, specifying the character and quantity of each kind of such merchandise or cargo, as per schedule adopted by the board.

In case any owner, agent, manager, consignee, master, or person in command of any vessel shall neglect or refuse to deliver such statement provided for in this section, or shall willfully make a statement false in any of the particulars required by such rules, he will be prosecuted therefor, and, in case of conviction, suffer the penalties provided by law, as follows: "By a fine not exceeding one hundred dollars." (Idem.)

28. *City not responsible for damage.*—The city will not be responsible for the safety of any vessel nor for injury or damage to same, no matter from what cause such damage may happen, nor for vessels breaking loose from their moorings and fastenings, damaging themselves or other vessels, nor by reason of the piling, tying posts, or cavels giving way, and vessels being damaged thereby or being damaged by vessels which have broken loose. It being distinctly understood

that vessels use the city facilities with the full understanding that the city is in no case responsible for mishaps or accidents, no matter from what cause such mishaps or accidents may arise. (Idem.)

29. *Collection of charges.*—The wharfmaster shall collect all dockage, wharfage, tolls, or rents authorized by the harbor board. If any vessel leaves a wharf, slip, dock, channel, or basin, unless forced to do so by stress of weather or fire, without first paying the dockage or tolls due, such vessel will be placed upon the delinquent list, and must not be permitted to use any wharf, slip, or other facilities belonging to the city without first paying double the incurred bill and ten dollars in addition thereto.

Charges are due and payable on vessels intending to discharge before any merchandise is discharged, and on vessels loading or receiving cargo before the same is placed on board, when possible to obtain the amount, and in any event before the departure of the vessel from the wharf or slip. (Idem.)

30. *Time of loading or unloading.*—A reasonable time will be allowed vessels for loading or discharging their cargoes. The dispatch for sailing vessels to be at the rate of 100 tons per day, steamers at the rate of 200 tons per day, time to be computed from twenty-four hours after vessel has berthed at docks.

The above discharge rate per day in loading must be made each and every weather working day, Sundays and legal holidays excepted. In the event that vessels do no fulfill the above requirements and there be other vessels waiting for berths, or should the wharfmaster decide that a vessel is not being given sufficient dispatch, as per the rules above, to warrant her occupying a berth, the vessel will be ordered from the wharf by the wharfmaster, the expense of moving said vessel to be paid by the owner or person in charge of the vessel. (Idem.)

31. *High winds.*—In the event of hurricanes, storms, or floods of such severity as will endanger the wharves by reason of vessel being moored to same, such master or owner of the vessel will use all due care and necessary precaution to avoid damage to wharf, and on order of the wharfmaster or his authorized assistant such master or owner of vessel will run their spring lines, cables, etc., to such a point as directed as will avoid damage to the wharf, and further, if called upon, let go their lines from the wharf and drop anchor in basin in such manner as will relieve the wharf of any strain until wind subsides sufficiently for vessel to return and moor to wharf without danger to same. (Idem.)

32. *Taking and discharging cargo over waterside.*—Vessels at wharves are allowed the privilege of taking cargo on over the waterside of the vessel, but at times it may be necessary to place other vessels alongside of those already at the docks, which will prevent the vessel next to the dock from taking on cargo from the water, and all vessels and owners thereof use the city's facilities under these conditions. (Idem.)

33. *Depositing freight on wharves.*—No freight will be allowed to be deposited on the city's wharves except by the consent of the city. This consent must be given by the wharfmaster. (Idem.)

34. *Loads on wharves.*—No load exceeding seven tons, except in the case of a single package, shall be admitted on or taken off a wharf. A single package exceeding seven tons may be admitted on or taken off of wharf with permission of the wharfmaster and upon compliance with such conditions as he may impose thereon. No weight exceeding fifty tons shall be allowed in a space not less than thirty feet square (900 square feet) on any pier or wharf. (Idem.)

35. *Teams on wharves.*—Driving on a wharf faster than a walk is forbidden, and a violation of this rule shall subject the offender to prosecution for misdemeanor. No wagon or vehicle of any description drawn by more than two horses shall be allowed on any wharf, and when, in the opinion of the wharfmaster, driving is unnecessary, teams and vehicles and motor trucks will not be allowed on such parts of wharves as he may designate. (Idem.)

36. *Unloading timber and heavy material.*—No piling, timber, or barreled products will be unloaded from vessels or cars, except by use of the proper methods. Dragging timber, ties, piling, steel, iron, or other heavy material over wharves will not be permitted. (Idem.)

37. *Use of canvas chutes.*—When ballast, stone, coal, brick, ashes, cinders, dust, rubbish, or other loose matter or material that will sink is being landed from a vessel upon a wharf, or is being transferred from one vessel to another, a canvas chute or other contrivance, to the satisfaction of the wharfmaster, must be used to prevent any part of such substance from falling into the water. (Idem.)

38. *Use of steam hoist, etc.*—Every steam engine, when used upon any wharf for loading or unloading cargo, and pile driver when working on or alongside any wharf, must have upon its smokestack a bonnet or smoke arrester that will effectually prevent sparks from falling upon such wharf or upon the deck of any vessel. In operating donkey or hoisting engines under sheds there must be provided by the owner or operator a bent or curved pipe, with spark arrester, extending to the outside of the shed. The owner and operator of donkey or hoisting engines operated on any of the wharves on the water front must clean up and remove all ashes, cinders, and waste from their engines. Suitable pans must be provided under the fire box and under the ash box, said pans to be partly filled with wet sand to receive any sparks or cinders falling from said fire boxes. The sufficiency of spark arresters and other devices will be determined by the wharfmaster, whose decision shall be absolute and binding. (Idem.)

39. *Fire rules.*—Fire must not be used on board of any vessel at the wharves or in the slips for heating pitch, tar, or other inflammable substances, but may be used on floating stages or boats for the purpose of heating such substances for repairing vessels; provided, such fire is constantly in charge of a person capable of taking proper care of the same. No bonfire or open fire for the burning of rubbish or refuse materials shall be allowed on any of the city's facilities or harbor, nor upon any property under the jurisdiction of the harbor board, and it shall be the duty of the wharfmaster to strictly enforce this rule.

Vessels berthed at docks must keep spark arresters (or nets) over stacks, funnels and galley stovepipes. (Idem.)

40. *Smoking.*—Smoking in the warehouse or on the wharves belonging to the city is strictly prohibited. Any person guilty of violating this rule shall be subject to fine of not less than ten dollars nor more than one hundred dollars. Smoking on vessels handling cotton and oil will not be permitted while said vessel is berthed at any of the wharves belonging to the city. (Idem.)

41. *Explosives.*—No gunpowder or other explosive shall be discharged on or loaded upon any wharves or structures or vessels, except by permission of the wharfmaster, and must be handled in accordance with his directions and must be immediately removed.

Acids, coal oils, and empty gasoline or distillate drums must be removed from the wharves at once. The storage, keeping, or use of gasoline, distillate, or other liquid petroleum products on the property under the control of the harbor board, except at such localities as may be specifically designated therefor is strictly prohibited and at such localities as may be designated therefor the same shall not be handled except between sunrise and sunset, and vessels will be allowed to take on board gasoline or distillate only between 8 a. m. and 5 p m., and when vessel is otherwise ready to depart. Delivery must be made direct from wagons to the vessel and the wagons will not be allowed to wait on the wharves. (Idem.)

42. *Discharging ballast or throwing rubbish in the water.*—Throwing ballast, rubbish, or anything into the slips or channels is strictly prohibited. No vessel

will be permitted to discharge ballast at the city wharves, unless authority is obtained from the wharfmaster, and no vessel shall be placed at a berth to discharge ballast when any other vessel or vessels are ready to berth for cargo purposes. (Idem.)

43. *Wharves not distributing point for rail shippers.*—The wharves and other facilites provided by the city are not intended to be used as depots for the distribution of rail shipments and must not be used for that purpose. (Idem.)

44. *Dockage, wharfage, tolls, storage, and terminal charges.*—A printed schedule will be prepared covering all charges to be made in connection with the use of the city's facilities, copy of same can be secured upon application to the wharfmaster. (Idem.)

45. *Cleaning up.*—Any owner of any steamship or vessel or any stevedore who uses any facility belonging to the city without any charge for rental, wharfage, or dockage, shall, at his own expense, and when ordered by the wharfmaster or his authorized assistant, repair any damage done to any property of the city by said owner or stevedore or his employees, and such repairs shall be made in such manner as the wharfmaster shall direct. Said owner or stevedore shall, at the completion of the handling of any cargo, clean up the aprons, floors, and premises used by him or littered up by the handling of said cargo. The floors shall be thoroughly swept, when, in the opinion of the wharfmaster, such sweeping is necessary, and all rubbish and inflammable material of every kind shall be carted away from the city's premises. (Idem.)

46. *Penalty for failure to abide by rules.*—Any vessel using the city's facilities for the loading or unloading of cargo must abide by all the rules of the city, and upon failure to abide by such rules shall be subjected to the penalties provided in the above sections where such penalties are provided. Where no provision for penalty is made, and where a vessel causes any damage to any of the city's property, the damage must be paid before the vessel can again be berthed at any city wharf, and in the event that the owner or master of the vessel persists in disobeying rules and damaging property and interfering with the business of the wharves, the harbor board may refuse to allow that vessel or the owner or master thereof to enter upon any of the city's property under the control of the harbor board. Any person entering upon any of the property under the control of the harbor board who fails to comply with any of the above rules shall be subject to the penalties provided for that purpose where a penalty is provided, and in the event that no special penalty has been provided, and the person does not comply with the rules when ordered by the wharfmaster or his authorized assistant, such person shall be subject to arrest and shall be charged with a misdemeanor, and upon conviction by any court, shall be fined not less than five dollars nor more than twenty-five dollars; provided, however, that any person who shall, through carelessness or malice, cause a fire resulting in any damage to any of the city's property, shall be vigorously prosecuted by the city and punished as prescribed by the laws of the State of Texas for such offenses. (Idem.)

PORT ADMINISTRATION.

1. **State or municipal officials and bodies having jurisdiction over the port and over the various phases of its administration.**—The control of the port is vested in a board of harbor commissioners consisting of five men, two of whom are appointed by the county commissioners and two by the city commissioners, the chairman being appointed by the joint vote of the county and city commissioners. This harbor board also acts as a board of pilot commissioners.

The executive officer is known as the director of the port, through whom all employees of the port are held responsible to the commission.

2. **Organization of port administrative bodies.**—The board of harbor commissioners, technically known as the Harris County-Houston Ship Channel navigation district, is appointed as above mentioned, the term of service of the various commissioners being one and two years, according to the appointment, in order that two terms will expire one year and three the next. The secretary of the commission is the director of the port.

3. **Duties and powers of port officials and bodies.**—The board of harbor commissioners has full charge of the administration and development of the port, with the exception of police jurisdiction, which lies with the city of Houston. The commission can request the voting of navigation district bonds for the construction of wharves and other terminal facilities, or for the purpose of assisting in a dredging program in conjunction with and under the supervision of the Corps of Engineers. They may acquire by condemnation, purchase, or otherwise, lands, wharves, etc., operate floating plant, and in general are delegated with all the rights, powers, and authority consistent with the constitution of the State of Texas, necessary for the proper operation and development of the port. The harbor master supervises the anchorage and mooring of vessels.

The director of the port is charged with the actual management of the port.

The existing wharves and Harbor Belt Railway have been constructed from city bond issues and the director of the port has been executive officer of the city as well as the navigation commission. The existing wharves will in the near future be leased to the navigation commission for operation, and all future wharves, railway, terminal facilities, etc., will be constructed by said navigation commission, and consequently the director of the port will in the future be responsible only to the navigation commission.

PORT SURVEYORS.

The following is a list of port surveyors:

Henry J. Schutte, 301 Herman Building.

T. J. Anderson, Cotton Exchange Building (represented in Houston by Harry B. Gibbs).

PORT SERVICES AND CHARGES.

FIRE PROTECTION.

An 8-inch water main, which connects the port with the city of Houston, and the Magnolia Park water systems provide adequate service. Three gravity tanks which have a total capacity of 150,000 gallons are located at the turning basin. These tanks are equipped with two electrically driven pumps, each of which has a delivery capacity of 1,000 gallons of water per minute.

Fire hydrants are located around the wharves and sheds for outside protection and there are sprinkler systems and hose connections within the sheds and warehouses.

The navigation district does not own any floating equipment for fire protection, but privately owned tugs equipped with high-pressure fire pumps are usually to be found adjacent to the wharves.

Information regarding fire protection at the various wharves and piers of the port is given in the table showing data relative to wharves, docks, etc.

PILOTAGE.

Pilotage is compulsory for foreign vessels only. The following rates apply:

	Rates per foot draft.
Gulf of Mexico to Houston, or vice versa	$5. 50
Bolivar Roads to Houston, or vice versa	2. 50
Gulf of Mexico to Bolivar Roads, or vice versa	4. 00

See page 21 for information relative to pilotage regulations.

DOCKAGE.

The following regulation covers the dockage charges against steamships:

Vessels berthed at any wharf or made fast to a vessel so berthed, while not discharging inward cargo, or loading outward cargo, will be charged storage at the rate of 1½ cents per lineal foot, based on the length of vessel, per day, provided that Sundays or legal holidays shall not be included in this charge, nor the first and last day of the ship in port. This charge will apply as well on vessels so berthed for the purpose of undergoing repairs.

TOWAGE.

Ships over 2,500 tons register usually have the assistance of one or more tugs from the entrance of the channel to the docks. Application for this service may be made when applying for a berth. Rates of towage prevailing are $300 per tug, Houston to Bolivar Roads or vice versa, for assisting a steam vessel. For sailing vessels the rate per round trip is 70 cents per gross ton, with a minimum charge of $600.

WHARFAGE

The wharfage rates at the public wharves on certain specified commodities effective May 1, 1923, were as follows:

Wharfage charges on coastwise traffic.

Commodity.	Rates in cents per 100 pounds, except as shown.
All classes or commodities not otherwise provided for below, between Atlantic seaboard and Gulf points only and Houston, Tex., and all local business using light-draft channel, per ton of 2,000 pounds	12
Sand and shell, per cubic yard on light-draft channel	2
On main channel and at turning basin	3
Oil, crude and refined, through pipe line, per barrel of 42 gallons	½

Wharfage charges on import and inbound coastwise traffic.

Commodity.	Rates in cents per 100 pounds, except as shown.
Bananas, per bunch	¾
Cotton	2
Livestock, viz:	
Calves, goats, sheep, and swine, per head	12½
Colts and donkeys, per head	25
Horses, mules, cattle, per head	32
Lumber and timbers, pine, per 1,000 feet	37½
Rice, rough	1½
Sugar, crude, in sacks, barrels, or tierces	1
Sulphur, in bulk or package, gross ton 2,240 pounds per ton	20
Wool, in bales or sacks	3

Wharfage charges on export and outbound coastwise traffic.

Commodity.	Rates in cents per 100 pounds, except as shown.
Asphalt and asphaltum, in barrels or bags	1¾
Beans, in bags or barrels	1¼
Coal	1½
Coke, petroleum, in bulk	1½
Cotton and cotton linters, in bales and sacks	2
Fertilizers, in sacks	1¾
Grain, viz:	
Wheat, corn, rye, oats, barley, and kaffir corn, in bulk, from elevator through carrier house direct to ship	¾
Dried and brewer's, in sacks	1¾
Corn, wheat, rye, oats, barley, and kaffir corn, in sacks or barrels	1½
Grain products, viz: Wheat, buckwheat, and rye flour, corn meal, corn barley, oats or rye chops, bran, screenings, middlings, shorts, mill feed, mill stuff, and prepared stock foods, in sacks or barrels	1½
Hides, green or dry, in bales or bundles	2
Iron or steel articles:	
Billets, blooms, ingots, wire rods, in coils (unfinished, not drawn through a die), wheels and axles (old car), bars, chains, iron in coils (not drawn through a die), and rough castings	1¾
Iron, pig	1¾
Iron, scrap	1¾
Linseed meal and cake, in sacks	1¾
Lumber and timbers, hardwood	1¾
Lumber and timbers, pine, per 1,000 feet	37½
Oil, crude and fuel, in bulk, pumped through pipe line from tank cars or storage tanks to ship, per barrel of 42 gallons	¾
Oil, crude, in barrels	2
Oil, refined petroleum, in bulk	¾
Oil, refined petroleum, in packages	2½
Oil, refined petroleum or lubricating, in barrels or drums	1½
Rice and rice products, viz: Bran, feed, flakes, hulls, and polish, in sacks, barrels, or cases	1½
Sisal, in bales	1¾
Sugar, in barrels or sacks	1¾
Sugar, in boxes	2½
Sulphur, in bulk, gross ton 2,240 pounds per ton	20
Sulphur, in boxes, barrels, or sacks, gross ton 2,240 pounds per ton	20

LIGHTERAGE.

There is no free lighterage by rail carriers at this port. When lighterage is necessary, it is performed by private companies through arrangements with shippers. The oil refineries occasionally lighter their vessels in Bolivar Roads of part of their cargo when the draft of the vessel is too great to navigate the channel with a full load.

A lighterage service has been inaugurated for the handling of cotton by barges from the upper or light draft channel to ship side in the turning basin. No definite schedule of charges for handling cotton has been arranged as yet.

STORAGE.

This subject is covered under railroads and storage warehouses.

LOADING AND DISCHARGING VESSELS.

Several of the sheds and warehouses are equipped with modern mechanical appliances for handling freight. At wharf No. 1 there is an electric freight escalator which is used to carry the truckers with their loaded trucks from vessels to the wharf level. Wharf

No. 4 is equipped with three of these escalators and a 20-ton electric crane for handling heavy freight. Sand and shell are handled by means of steam operated, stiff-leg derricks. At the Magnolia Warehouse & Storage Co.'s wharf a belt conveyor with removable sections is used in handling cotton. At the municipal cotton wharf an electrically operated conveyor system extends from the wharf to the warehouses in the rear. Phosphate rock is unloaded by means of an electrically operated hopper on the wharf, with bucket elevator and cars to storage bins in sheds.

Detailed information regarding the handling facilities will be found in the table relating to piers, wharves, and docks.

Methods employed in handling inward and outward cargo.—The methods employed in handling inward and outward cargo at all Gulf ports are practically the same. A description of these methods will be found on page 28.

Speed of loading and unloading.—On inward cargo the average quantity handled under normal conditions is about 150 tons per hatch per day. On outward cargo the average quantity handled is about 20 tons of general cargo per hatch per day. All hatches may be worked at one time, with the exception of side port vessels at wharves Nos. 1 and 4 where electric escalators are installed. There is one escalator on wharf No. 1 and there are three on No. 4. Vessels must be shifted to adjust hatches to escalators. The average number of gangs per hatch is two, according to the number of hoisting winches with which hatch is equipped. There are usually eight men to a gang.

Cost of loading and unloading.—The cost of loading and unloading vessels varies according to the character of the cargo.

For detailed information relative to stevedoring charges see page 29.

Names of stevedoring contractors at the port.

Name.	Address.
S. J. Dougherty & Co.	Commercial National Bank Building.
Channel Warehouse & Forwarding Co.	Wharf No. 2, turning basin.
Texas Contracting Co.	Herman Building.

Information relative to interchange between rail and water carriers is given under "Railroads."—There is practically no in-transit cargo moving entirely by water. Arrangements are being made for the reshipment of Pacific coast canned goods, etc., to the West Indies. Undelivered or unclaimed freight will be held by the ship's agent for a period of 15 days free of charge.

Checking and tallying.—The cargo is checked by the railway checkers at the time of loading or unloading, through a joint agree-

ment with the ship agents. The cargo is stacked or piled in such manner that it can be readily checked by the wharf clerk and often is confirmed by ship's officers. On inward cargo a receipt is given by the steamship agent's authorized wharf superintendent to consignee which states the exact quantity and condition of the cargo when landed. Receipt for outward cargo is given by the agent's wharf superintendent, stating quantity of commodity received in apparent good order.

LABOR.

The following holidays are observed: New Year's Day (January 1); Washington's Birthday (February 22); Sam Houston Memorial Day (March 2); Texas Independence Day (April 21); Independence Day (July 4); Labor Day (first Monday in September); Armistice Day (November 11); Thanksgiving Day (fixed by presidental proclamation and generally last Thursday in November); and Christmas Day (December 25).

The labor supply is entirely union controlled. Nonunion labor is used only when the demand is temporarily greater than the supply, but all such labor is furnished by the International Longshoremen's Association. There is usually an ample supply of labor.

See page 30 for wage scales and working rules of longshoremen.

MISCELLANEOUS CHARGES.

The miscellaneous charges given on page 38 for Galveston also apply at Houston, so far as applicable to this port.

FUEL AND SUPPLIES.

ELECTRIC CURRENT.

The central power station, located in the city of Houston, furnishes alternating current of 110 to 11,000 volts, 3 phase, 60 cycle, for power and lighting in the city and along the water front. The normal demand is 15,000 kilowatts per hour.

Further information regarding electric current is given in the tables showing the data relative to piers, wharves, docks, etc.

WATER SUPPLY.

There is an ample supply of fresh water at all piers. The water supply comes from artesian wells, and is furnished by the city of Magnolia Park and city of Houston water systems. This water is excellent for boiler and domestic purposes. The rate of delivery depends on the number of leads and is about 10,000 to 20,000 gallons per hour. The charge is 20 cents per 1,000 gallons.

Information regarding water supply at the various wharves and piers of the port is given in the tables following page 40.

BALLAST.

There is practically no demand for ballast at this port. Sand secured from the Jacinto River and gravel from pits within a radius of 100 miles of Houston can be supplied by two companies at about $1.25 per ton.

The Texas Sand & Gravel Co. and the Buffalo Bayou Co., both located on the light-draft channel, have storage supplies and facilities for delivery of 60 tons per hour each.

PROVISIONS.

The city is well supplied with provisions of all kinds in any quantity required by vessels.

OIL BUNKERING.

Vessels may be bunkered through pipe lines on the municipal docks at the turning basin, while loading or discharging cargo, or at the wharves of the various oil companies located on the Houston Ship Channel. There are 11 companies furnishing fuel oil either at the port or along the ship channel. These are the Houston Oil Terminal,

Deepwater Oil Refinery, Magnolia Petroleum Co., Rio Bravo Oil Co., Texas Co., Sinclair Refining Co. of Maine, Humble Oil & Refining Co., Crown Oil & Refining Co., American Petroleum Co. and Galena Signal Oil Co., the Gulf Pipe Line Co., and the Clarion Oil Co.

The Houston Oil Terminal is located on the south side of the turning basin, with pipe lines on the municipal wharves. This company has 3 steel tanks with a total storage capacity of 114,000 barrels and a bunkering capacity of 3,000 barrels per hour. It also operates 5 tow barges, with a total carrying capacity of 16,350 barrels, capable of bunkering from 750 to 1,000 barrels per hour.

The Deepwater Oil Refinery and the Magnolia Petroleum Co. are both located at Manchester, 2 miles below the turning basin. The former has 3 steel tanks with a total storage capacity of 165,000 barrels. Vessels are bunkered from pipe lines on the Manchester Wharf.

The Magnolia Petroleum Co. has 2 steel tanks with a total storage capacity of 110,000 barrels and a bunkering capacity of 5,000 barrels per hour. The wharf of this company is used for barge traffic.

The Rio Bravo Oil Co. and the Texas Co. are located at Clinton, 3 and 4 miles, respectively, below the turning basin. The Rio Bravo Oil Co. has a storage capacity of 55,000 barrels and a bunkering capacity of 2,000 barrels per hour.

The Texas Co. has 4 steel tanks with a total storage capacity of 126,600 barrels and a bunkering capacity of 500 barrels per hour.

The Sinclair Refining Co. of Maine has a wharf at Sinco, with two steel tanks having a total storage capacity of 100,000 barrels and a bunkering capacity of 1,000 barrels per hour. This company operates 3 towed barges of 7,300, 8,500, and 15,000 barrels carrying capacity, capable of bunkering at the rate of 1,000 barrels per hour.

The Humble Oil & Refining Co. wharves are located at the Baytown Refinery at Webster. It has 85 steel tanks with a total storage capacity of 4,657,000 barrels. Vessels are bunkered at the wharves at the rate of 15,000 barrels per hour. This company also has 11 steel tanks at Houston with a total storage capacity of 450,000 barrels and a bunkering capacity of 12,000 barrels per hour. There are 4 towed barges with a carrying capacity of 2,000 barrels each, capable of bunkering at the rate of 1,000 barrels per hour.

The Crown Oil & Refining Co., located at Pasadena, has 2 steel tanks with a total storage capacity of 150,000 barrels. Vessels are bunkered at its wharf at the rate of 1,500 barrels per hour.

The American Petroleum Co. and Galena Signal Oil Co. have 60 steel tanks with a total storage capacity of 3,300,000 barrels, and a bunkering capacity of 15,000 barrels per hour. These companies also operate two towed barges, with a carrying capacity of 18,000 barrels, capable of bunkering at the rate of 2,500 barrels per hour.

The Gulf Pipe Line Co. is located at Lynchburg, 16 miles below the turning basin. It has 8 steel tanks with a total storage capacity of 700,000 barrels. Vessels are bunkered at the wharf at the rate of 8,000 barrels per hour.

The Clarion Oil Co. has a wharf at Clinton, with 3 steel tanks having a total storage capacity of 160,000 barrels. Vessels are bunkered at the wharf at the rate of 4,000 barrels per hour.

Fuel oil facilities, Houston, Tex.

Name of firm.	Houston Oil Terminal.	Deepwater Oil Refinery.	Magnolia Petroleum Co.
Storage facilities—Tanks:			
Location	Turning basin	At Manchester, 2 miles below turning basin.	Manchester, 2 miles below turning basin.
Number of tanks	3	3	2.
Type of construction	Steel	Steel	Steel.
Total storage capacity (barrels).	114,000	150,000	110,000.
Intake pipe lines (number and size).	2 (1, 12-inch; 1, 8-inch)	1, 8-inch	1, 8-inch.
Supply:			
Source of supply	Tampico, Mexico	From coastal fields	Tampico, Mexico.
How received	Tankers	Barge and tank cars	Tankers.
Grades	Bunker C	Usual coastal grade oils.	Mexican fuel, 11°–12° (Be.) and 14°–16° (Be.)
Quantity kept in stock—			
Maximum (barrels).	75,000 to 100,000	150,000	100,000.
Normal (barrels)	40,000	50,000	
Bunkering facilities:			
Pipe-line piers, wharves, loading heads, or dolphins.	Wharf		T head Creosoted piling.
Reference number on map.	12		4.
Location	Turning basin	Manchester Docks	Right bank Houston Ship Channel at chester.
Type and construction.	Creosoted piles	Creosoted pile and timber.	Creosoted piles.
Actual berthing space for bunkering.	104 feet	150 feet	102 feet.
Depth of water, mean low water.	25 feet	9 feet at light draft wharf; 25 feet at Manchester Wharf.	12 feet.
Bunkering capacity (barrels per hour).	3,000	900	5,000.
Discharge pipe lines (number and size).	3 (1, 12-inch; 1, 8-inch; 1, 2-inch).	One 6-inch at light draft wharf; one 8-inch and one 6-inch at Manchester Wharf.	1, 8-inch.
Hose (size)	8-inch and 4-inch		8-inch.
Total length	As required by vessel		25 feet.
Connections (size)	do		8-inch.
Number of holes in flanges.	do		8-inch.
Barges:			
Total number	5	None	None.
Towed or self-propelled.	Towed		
Carrying capacity (barrels).	1, 1,750; 1, 2,400; 1, 3,200; 2, 4,500.		
Bunkering capacity (barrels per hour).	750 to 1,000		
Hose, size	4 inch		
Total length	As required by vessel		
Connections	do		
Number of holes in flanges.	do		
Remarks	Vessels can take fuel oil at any municipal wharf at turning basin by pipe line direct from terminal without shifting from thier berths.	Bunkering or export	Oil wharf for barge traffic.

Fuel oil facilities, Houston, Tex.—Continued.

Name of firm.	Rio Bravo Oil Co.	Texas Co.	Clarion Oil Co.
Storage facilities—tanks:			
Location	3 miles below turning ing basin, at Clinton.	Clinton, 4 miles below turning basin.	Clinton, Harris County.
Number of tanks	1	4	3.
Type of construction	Steel	Steel	Steel.
Total storage capacity (barrels).	55,000	2, 54,300; 1, 10,300; 1,7,700.	160,000.
Intake pipe lines (number and size).	1, 8-inch	2, 8-inch	1, 4-inch.
Supply:			
Source of supply	Tampico, Mexico	Humble Field, Tex	Texas pile line.
How received	Tankers	Pipe line	Pipe line.
Grades	Heavy Mexican fuel oil, 12° (Be.)	Crude	Gulf coast crude oil.
Quantity kept in stock—			
Maximum (barrels).	55,000	75,000	1,600,000.
Normal (barrels)		40,000	
Bunkering facilities:			
Pipe-line piers, wharves, loading heads, or dolphins.	Wharf	Wharf	One wharf loading head and 4 dolphins.
Location	Clinton	Clinton	Clinton, opposite Sinclair Refining Co.
Type and construction.	Untreated piles	Creosoted piles	"T" Head wharf, wood.
Actual berthing space for bunkering.		155 feet	500 feet.
Depth of water, mean low water	14 feet	25 feet	30 feet.
Bunkering capacity (barrels per hour).	2,000	500	4,000.
Discharge pipe lines (number and size).	1, 8-inch	1, 8-inch	1, 12½-inch.
Hose (size)	8-inch		2, 8-inch.
Total length	25 feet		50 feet.
Connections (size)	8-inch		8-inch.
Number of holes in flanges.	8		
Barges	None		None.

Name of firm.	Sinclair Refining Co. of Maine.	Humble Oil & Refining Co.	Humble Oil & Refining Co.
Storage facilities—tanks:			
Location	Northeast corner Sinclair property at Sinco.	Docks Baytown Refinery, at Webster.	Houston, Tex.
Number of tanks	2	85	11.
Type of construction	Steel	Steel	Steel.
Total storage capacity	100,000 barrels	15, 825,000 barrels; 70, 3,850,000 barrels.	450,000 barrels.
Intake pipe lines (number and size).	4 (2, 6-inch; 1, 8-inch; 1, 12-inch).	2 (1, 10-inch; 1, 8-inch)	18 (6, 8-inch; 6, 10-inch; 6, 12-inch).
Supply:			
Source of supply	Tampico, Mexico	Baytown Refinery	Baytown Refinery & Purchase.
How received	Tankers	Pipe line	Pipe line, barges, and steamship.
Grades	Heavy Mexican crude	Bunker B, Diesel motor, and special grades as desired.	Bunker A, B, and C.
Quantity kept in stock—			
Maximum (barrels).	100,000	300,000	400,000.
Normal (barrels)		150,000	200,000.

Fuel oil facilities, Houston, Tex.—Continued.

Name of firm.	Sinclair Refining Co. of Maine.	Humble Oil & Refining Co.	Humble Oil & Refining Co.
Bunkering facilities:			
Pipe-line piers, wharves, loading heads, or dolphins.	Wooden wharf	Wharf	600-foot dock.
Location	At Sinco, northeast corner of property.	Webster.	
Type and construction.	Creosoted piles	Concrete piles with concrete slab.	Concrete.
Actual berthing space for bunkering.			600 feet.
Depth of water, mean low water.	25 feet	30 feet	30 feet.
Bunkering capacity (barrels per hour).	1000	15,000	12,000.
Discharge pipe lines (number and size.)	3 (1, 8-inch; 2, 12-inch)	3 (1, 8-inch; 1, 10-inch; 1, 12-inch.)	3 (8, 10, and 12 inch).
Hose (size)	1, 8-inch; 1, 6-inch; and 1, 4-inch.	1, 8-inch; 1, 6-inch; 1, 4-inch.	6 and 8 inch.
Total length	30 feet each		28 feet.
Connections (size)	8-inch	8-inch	6 and 8 inch.
Number of holes in flanges.	8	8	Standard.
Barges:			
Total number	3	None available for bunkering.	Owned.
Towed or self-propelled.	Towed		Towed.
Carrying capacity (barrels).	1, 7,300; 1, 8,500, and 1, 15,000.		2,000 each.
Bunkering capacity (barrels per hour).	1,000		1,000.
Method of delivery of oil to vessels.			Pumps on barge.
Hose, size	8-inch		6-inch.
Total length	30 feet each		25 feet.
Connections (size)	8-inch		6 and 8 inch.
Number of holes in flanges.	8		Standard.

Name of firm.	Crown Oil & Refining Co.	American Petroleum Co. and Galena Signal Oil Co.	Gulf Pipe Line Co.
Storage facilities—tanks:			
Location	Pasedena Refinery, Pasadena, Tex.		Lynchburg, 16 miles below turning basin.
Number of tanks	2	60	6.
Type of construction	Steel	Steel	Steel.
Total storage capacity (barrels).	150,000	3,300,000	162,500.
Intake pipe lines (number and size).	2, 8-inch		1, 10-inch.
Supply:			
Source of supply	Domestic		Mexico and coast fields.
How received	Pipe line		Port Arthur by barge. Mexican by ships. Coast oil by pipe line.
Grades	Domestic fuel		Mexican, 18.5° (Be.); Pierce Junction, 24° (Be.); Goose Creek, 24.5° (Be.).
Quantity kept in stock—			
Maximum (barrels).	100,000		160,000.
Normal (barrels)	50,000		50,000.

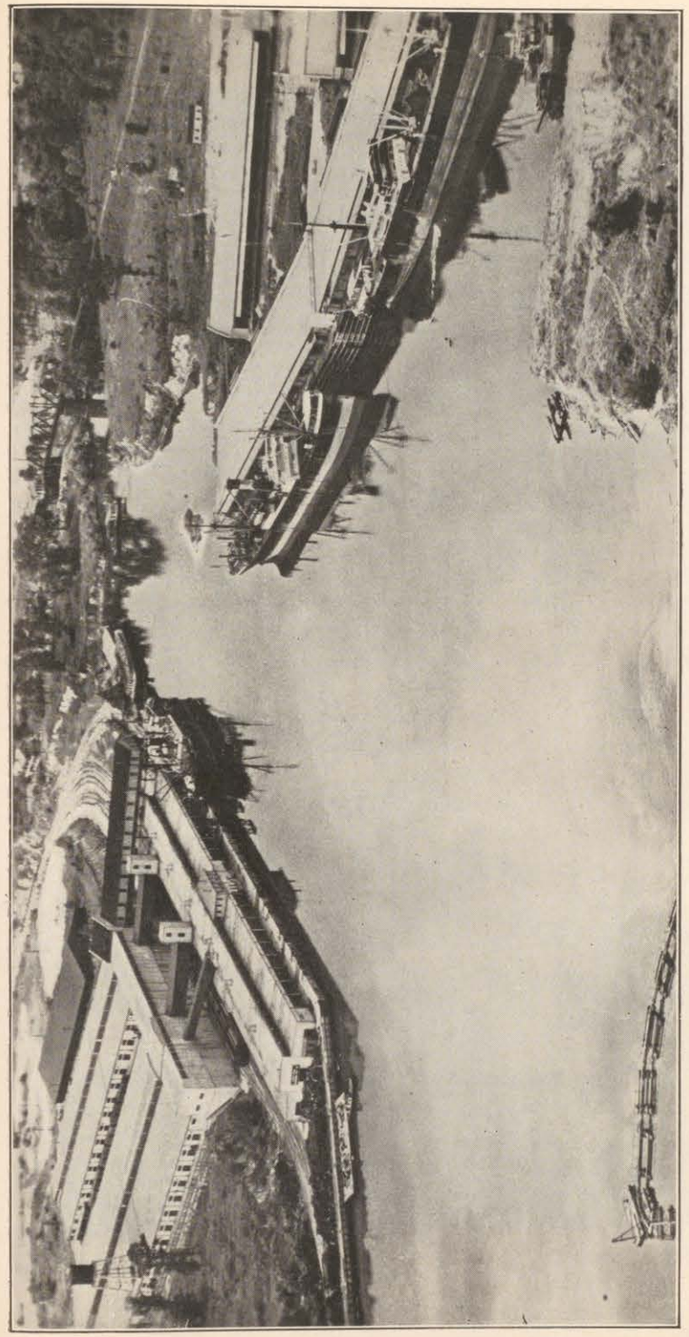
Fuel oil facilities, Houston, Tex.—Continued.

Name of firm.	Crown Oil & Refining Co.	American Petroleum Co. and Galena Signal Oil Co.	Gulf Pipe Line Co.
Bunkering facilities:			
Pipe-line piers, wharves, loading heads, or dolphins.	Wharf	Creosoted piles	Creosoted piles; 2 wharves.
Reference number on map.			47 and 265; 47 and 565.
Location	Pasadena		Sheet 8 Houston Ship Channel.
Type and construction.	Cresoted piles		Creosoted pile and timber.
Actual berthing space for bunkering.			425 feet and 150 feet.
Depth of water, mean low water.	25 feet	25 feet	25 feet large wharf, 14 feet small.
Bunkering capacity (barrels per hour).	1,500	15,000	1,200 to 1,500; 8,000.
Discharge pipe lines (number and size).	1, 8 inch; 1, 6 inch	3, 8-inch	2, 6-inch; 1, 10-inch.
Hose (size)	6 inch	8-inch	4, 6-inch; 1, 3-inch; 1, 2-inch.
Total length	100 feet	30 feet	4, 25 feet; 2, 20 feet.
Connections (size)	6-inch	8-inch	4, 6-inch; 1, 3-inch; 1, 2-inch.
Number of holes in flanges.	8	8	
Barges:			
Total number		2	None.
Towed or self-propelled.		Towed	
Carrying capacity (barrels).		18,000	
Bunkering capacity (barrels per hour).		2,500	
Hose, size (inches)		8	
Total length (feet)		25	
Connections (size in inches).		8	
Number of holes in flanges.		8	

COAL BUNKERING.

Bunker coal is furnished by the Channel Fuel Co. The plant is located at Manchester, 2 miles below the turning basin, between the Portland Cement Co. and Manchester Wharf. This plant has a bulk storage capacity of 50,000 tons, with a normal delivery capacity of 150 tons per hour.

Vessels are bunkered by means of a steeple tower traveling on the front of the wharf and loading through a swivel spout direct to bunkers. A weightometer installed on a belt conveyor weighs coal in either direction.



TURNING BASIN AT HOUSTON SHOWING MUNICIPAL WHARF NO. 4 WITH TRANSIT SHED AND WAREHOUSE AND WHARVES NOS. 7 AND 8 WITH COTTON STORAGE SHEDS.

Made expressly for this report by the U. S. Army Air Service.

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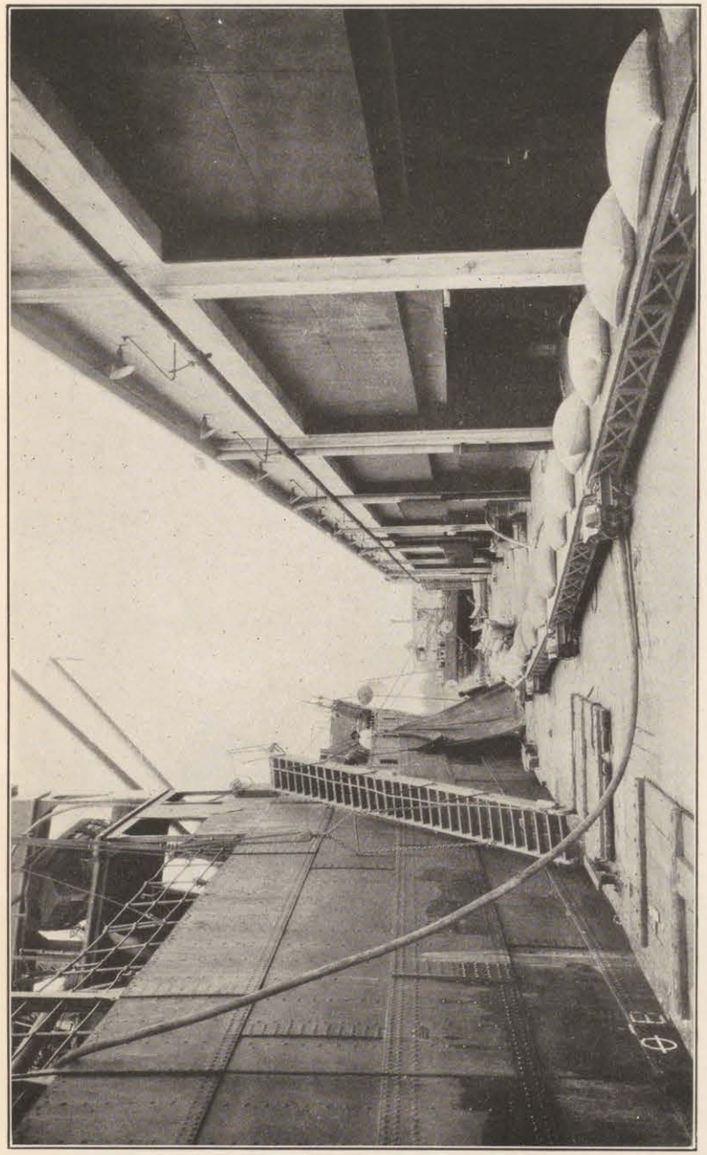


HOUSTON MUNICIPAL WHARF NO. 4 SHOWING ELECTRICALLY OPERATED FREIGHT CONVEYORS MOVING COFFEE THROUGH TRANSIT SHED INTO WAREHOUSE.

PORT AND HARBOR FACILITIES.

PIERS, WHARVES, AND DOCKS.

The port of Houston has 21 wharves, bulkheads, and moorings used for transportation purposes, with depths of water ranging from 3 to 25 feet at mean low water. Of this number, 5 are used for general merchandise and cotton, 4 for handling sand, gravel, and shell, 3 for handling fuel oil, 2 for cotton, 2 for general merchandise, steel, and lumber, 1 for handling coal, 1 for rice, 1 for phosphate rock, and the remainder for miscellaneous and private purposes.

The principal terminal facilities are located at the turning basin. There are six municipal wharves of creosoted pile and concrete construction, equipped with warehouses having modern mechanical handling facilities. A complete system of public belt terminal railways, with track scales, serves all of these facilities, and they are connected with each other and the city streets of Houston by improved highways.

At Manchester, below the turning basin, are located the Manchester Wharf, the Channel Fuel Co.'s coal wharf, the Texas Portland Cement Co. Wharf, and an oil wharf of the Magnolia Petroleum Co. used for barge traffic. The Manchester Wharf owned by the city of Houston is a concrete structure, equipped with a transit shed and a grain gallery, connected with the Houston Mill & Elevator Co., located in the rear.

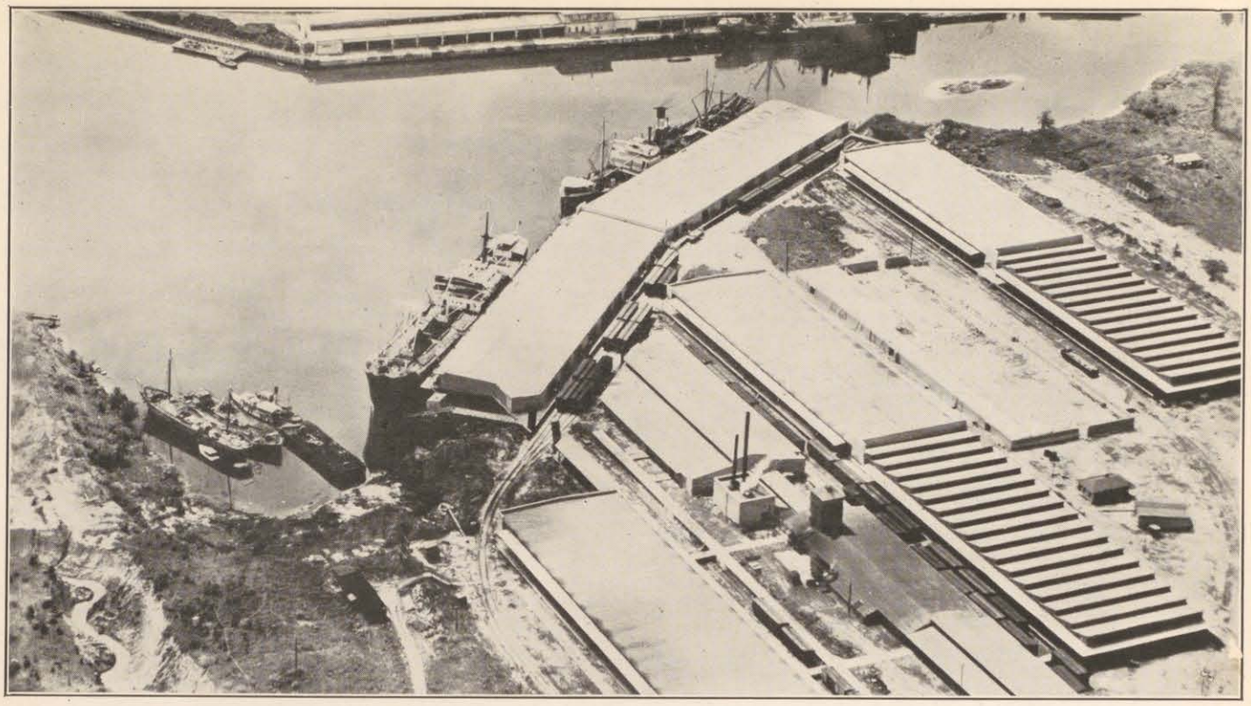
Located on the upper or light draft channel, about 7 miles above the turning basin, is the Main Street Wharf owned by the city of Houston. This wharf is used by light draft boats in bringing supplies into Houston and taking out general merchandise to the neighboring bay-shore towns. In addition to the municipal wharf, there are a number of privately owned wharves at various industrial plants located along the waterway and a number of loading and unloading chutes for handling cotton, rice, and pipe line terminals for handling oil, etc.

The terminal facilities of the port are being increased and are fully described under the subject of "Public terminal improvements" on page 161.

Detailed information regarding all the wharves of the port is shown in the table beginning on page 186:

Piers, quays, wharves, moles, and docks (except dry docks), Houston, Tex.

Reference number on map	1	2			3
Name	City Wharf.	Channel Fuel Co. Wharf.			Texas Portland Cement Co. Wharf.
Exact location in harbor	On right bank of Houston Ship Channel, at Manchester.	On right bank of Houston Ship Channel, at Manchester.			On right bank of Houston Ship Channel, at Manchester.
Owned by	City of Houston	Channel Fuel Co			Texas Portland Cement Co.
Operated by	Harris County navigation district	do			Do.
Purpose for which used	General merchandise, cottonseed cake, and grain. Gallery connects with elevator in rear of wharf.	Receipt and shipment of coal			Unloading shell from barges for use in making cement.
Type of construction	Concrete on piles, with wood deck	Creosoted piling with wood deck			Creosoted piling.
		Lower side.	Upper side.	Face.	
Description:		*Feet.*	*Feet.*	*Feet.*	
Dimensions	500 feet (bulkhead or shore wharf)	100	100	140	324 feet (bulkhead or shore wharf).
Width of apron	20 feet				
Depth of water at m. l. w.	25 feet (bulkhead or shore wharf)	25	25	25	16 feet (bulkhead or shore wharf).
Berthing space available	500 feet				1324 feet.
Deck above m. l. w.	18 feet (bulkhead or shore wharf)	18	18	18	16 feet (bulkhead or shore wharf).
Lighted or unlighted	Lighted				Lighted.
Transit sheds	Structural steel frame, corrugated iron roof and sides, with wood floor.	None			None.
Length and width	480 by 180 feet				
Total floor area	86,400 square feet				
Lighted or unlighted	Lighted				
Mechanical handling facilities.	None, new wharf under construction	Steeple tower traveling front of wharf. 15-ton locomotive crane, 35-foot boom.			One electrically operated monorail bridge crane, with cantilever arm extending 40 feet above water, with 2 trolleys to handle 1½ cubic yard clam shell buckets. Minimum capacity 30 tons per hour; reach 500 feet from wharf to mill.
Railway facilities	Municipal Belt Ry. to all lines: 3 depressed tracks 500 feet each in rear of shed.	Municipal Belt Ry. to all lines; 2 surface tracks in rear of wharf.			Spur to Galveston, Harrisburg & San Antonio R. R. tracks to storage sheds.
Water supply	City of Houston mains through Magnolia Park and Harrisburg.	City of Houston mains through Magnolia Park and Harrisburg.			Private artesian well supply.
Fire protection	Fire hydrants to 8-inch main with city pressure.	Fire hydrants to 8-inch main with city pressure.			Fire hydrants and water tower.
Electric current	Houston Lighting & Power Co	Houston Lighting & Power Co.			Houston Lighting & Power Co.
Remarks		See "Coal bunkering," page 184, for details of plant.			



HOUSTON MUNICIPAL WHARVES NOS. 7 AND 8 WITH COTTON STORAGE SHEDS IN THE REAR AND MUNICIPAL WHARF NO. 4.

Made expressly for this report by the U. S. Army Air Service.

Reference number on map.. Name	4 Magnolia Petroleum Co. Wharf.	5 Magnolia Warehouse & Storage Co. Wharf, bulkhead.	6 Alex Sprunt & Sons, bulkhead.
Exact location in harbor	Right bank of Houston Ship Channel at Manchester.	Right bank of Houston Ship Channel near Brays Bayou.	Right bank of Houston Ship Channel near Brays Bayou.
Owned by	Magnolia Petroleum Co	Magnolia Warehouse & Storage Co	Alex Sprunt & Sons.
Operated by	do	do	Do.
Purpose for which used	Oil wharf for barge traffic	Occasional barges loaded with cotton	No wharf facilities. Cotton chute in bad repair.
Type of construction	Creosoted piling	Creosoted piling	
Description:			
Dimensions	102 feet (bulkhead or shore wharf)	950 feet (bulkhead or shore wharf)	20 feet wide (bulkhead or shore wharf).
Width of apron		17 feet (bulkhead or shore wharf)	
Depth of water at m. l. w.	12 feet (bulkhead or shore wharf)	8 feet (bulkhead or shore wharf)	
Berthing space available	102 feet (bulkhead or shore wharf)	950 feet (bulkhead or shore wharf)	
Deck above m. l. w	14 feet (bulkhead or shore wharf)	23 feet (bulkhead or shore wharf)	Cotton chute.
Lighted or unlighted	Lighted (bulkhead or shore wharf)	Unlighted (bulkhead or shore wharf)	Unlighted (bulkhead or shore wharf).
Transit sheds	None	Partly shedded on wharf for cotton storage and to compress in rear.	Cotton storage and compress in rear of chute.
Mechanical handling facilities.	None. Pipeline on wharf to storage tanks	Electrically operated belt conveyor fixed with movable sections; has a maximum capacity of 600 bales of cotton per hour.	None.
Railway facilities:			
Railway connecting	Spur to Galveston, Harrisburg & San Antonio R. R.	Spur to International & Great Northern R. R. and to Galveston, Harrisburg & San Antonio R. R.	Spur from compress to International & Great Northern R. R.
Tracks—			
On open wharf	At oil-loading racks at rear of storage tanks	None on wharf; tracks through plant	None near water side.
On string piece or apron.		2 tracks back of apron. Depressed	Depressed tracks alongside sheds.
Inside transit shed		Several tracks of varying length alongside of cotton warehouse.	
Water supply	Private artesian well	Private artesian well	City of Houston mains.
Fire protection	Portable extinguishers	Fire hydrants, 50,000-gallon water tower about 100 feet high.	Fire hydrants; city pressure. Portable extinguishers.
Electric current	Houston Lighting & Power Co	Houston Lighting & Power Co	Houston Lighting & Power Co.

Piers, quays, wharves, moles, and docks (except dry docks,) Houston, Tex.—Continued.

Reference number on map	7	8	9
Name	Armour Fertilizer Co. Wharf.	Municipal Wharf No. 1.	Municipal Wharf No. 2.
Exact location in harbor	Right bank of Houston Ship Channel south of turning basin.	Right bank of Houston Ship Channel south of turning basin.	Right bank of Houston Ship Channel south of turning basin.
Owned by	Armour Fertilizer Works	City of Houston	City of Houston.
Operated by	do	do	Do.
Purpose for which used	Handling phosphate rock for fertilizer	General merchandise and cotton	General merchandise and cotton.
Type of construction	Untreated piles	Creosoted piles and timber	Piles with wood platform.
Description:			
Dimensions	50 feet (bulkhead or shore wharf)	647 feet (bulkhead or shore wharf)	522 feet (bulkhead or shore wharf.)
Width of apron	25 feet (bulkhead or shore wharf)	57 feet (bulkhead or shore wharf)	40 feet (bulkhead or shore wharf.)
Depth of water at m. l. w.	19.5 feet (bulkhead or shore wharf)	25 feet (bulkhead or shore wharf)	25 feet (bulkhead or shore wharf.)
Berthing space available	400 feet (bulkhead or shore wharf), including mooring clusters.	647 feet (bulkhead or shore wharf)	522 feet (bulkhead or shore wharf.)
Deck above m. l. w.	21 feet (bulkhead or shore wharf)	17 feet (bulkhead or shore wharf)	15 feet (bulkhead or shore wharf).
Lighted or unlighted	Unlighted	Lighted	Lighted.
Transit sheds	None	Concrete construction with vitrified brick floor rolling steel doors. Has 8-foot boat landing platform in rear.	Wood construction, galvanized iron roof and sides with wood floor.
Length and width		425 by 100 feet	483 by 112 feet.
Total floor area		62,875 square feet	53,500 square feet.
Height between floors		1 story	1 story.
Allowable floor load (pounds per square foot).		Unlimited	
Lighted or unlighted		Lighted (2 small sheet iron sheds attached.)	Lighted
Mechanical handling facilities.	Electrically operated hopper on wharf; connected with storage bins in sheds; belt conveyor equipped with bucket elevators; capacity 40 tons per hour.	One fixed electrically operated freight escalator, adjustable in height, extending from wharf to shed; has a capacity of 100 tons per hour.	None.
Railway facilities:			
Railway connecting	Spur to International & Great Northern R. R.	Municipal Harbor Belt Lines connections to all railroads.	Municipal Harbor Belt Lines connecting to International & Great Northern R. R. and Galveston, Harrisburg & San Antonio R. R.

	Location.	Number.	Length.	Surface or depressed	Location.	Number.	Length.	Surface or depressed	Location.	Number.	Length.	Surface or depressed.
			Feet.				*Feet.*				*Feet.*	
Tracks	None at water side.											
On string piece or apron.					Lower end.	2	200 and 300	Surface	Upper end.	1	480	Surface.
Rear of transit shed		2	400	Depressed.		3	600 ft. each.	Depressed.		3	500 ft. each	Depressed.

Water supply	Private artesian-well supply, 50,000 gallons	City of Houston mains and artesian wells at basin.	City of Houston mains and artesian wells at basin.
Fire protection	Pressure for hydrants from 120-foot tower; electric pump with a capacity of 1,000 gallons per minute from channel.	3 towers, 50,000 gallons each; 2 electric pumps, high pressure; also city water supply. Gamewell call system to Houston fire department; fire hydrants, barrels, and buckets.	Fire protection, same as Municipal Wharf No. 1.
Electric current	Houston Lighting & Power Co	Houston Lighting & Power Co	Houston Lighting & Power Co.

Reference number on map	10	11	12
Name	Municipal Wharf No. 3.	Municipal Wharf No. 4.	Municipal Wharf No. 5.
Exact location in harbor	South side of turning basin	South side of turning basin	South side of turning basin.
Owned by	City of Houston	City of Houston	City of Houston.
Operated by	Harris County navigation district	Harris County navigation district	Harris County navigation district.
Purpose for which used	General merchandise, steel, and lumber	General merchandise, etc	Oil terminal, with 12-inch pipe line connection to 75,000-barrel storage tanks and lines to all wharves for bunkering ships, also mudshell from barges to cars.
Type of construction	Piles with wood platform	Piles with concrete platform	Creosoted piles.
Description:			
Dimensions	799 feet (bulkhead or shore wharf)	777 feet (bulkhead or shore wharf)	104 feet and pile mooring clusters (bulkhead or shore wharf).
Width of apron	33 feet (bulkhead or shore wharf)	20 feet (bulkhead or shore wharf)	Open (bulkhead or shore wharf).
Depth of water at m.l.w.	25 feet (bulkhead or shore wharf)	25 feet (bulkhead or shore wharf)	25 feet (bulkhead or shore wharf).
Berthing space available	799 feet (bulkhead or shore wharf)	777 feet (bulkhead or shore wharf)	104 feet (bulkhead or shore wharf).
Deck above m. l. w.	11 feet (bulkhead or shore wharf)	11 feet (bulkhead or shore wharf)	6 feet (bulkhead or shore wharf).
Lighted or unlighted	Lighted	Lighted	Lighted.
Transit sheds	Wood construction, galvanized-iron sides and roof, wood floor.	Concrete structure, wood floor and roof	Open wharf, few piles along bank for shell unloading rig.
Length and width	200 by 76 feet	662 by 95 to 100 feet	
Total floor area	15,140 square feet	60,827 square feet	
Height between floors	1 story	1 story	
Lighted or unlighted	Lighted	Lighted	Lighted.
Mechanical handling facilities.	None	Three fixed, electrically operated freight escalators, extending from ship to transit shed; have a capacity of 60 tons per hour. One fixed, electrically operated 20-ton crane, extending from shed to warehouse; has a capacity of 100 tons per hour. Two fixed, electrically operated, 8-ton elevators, extending from shed to warehouse; have a capacity of 80 tons per hour. 10-section portable conveyor, 1 stacking unit.	None on wharf except pipe lines to tank. Shell barges are unloaded by a stiff-leg derrick with clamshell bucket of 1½ cubic yards capacity belonging to contractor.

Piers, quays, wharves, moles, and docks (except dry docks), Houston, Tex.—Continued.

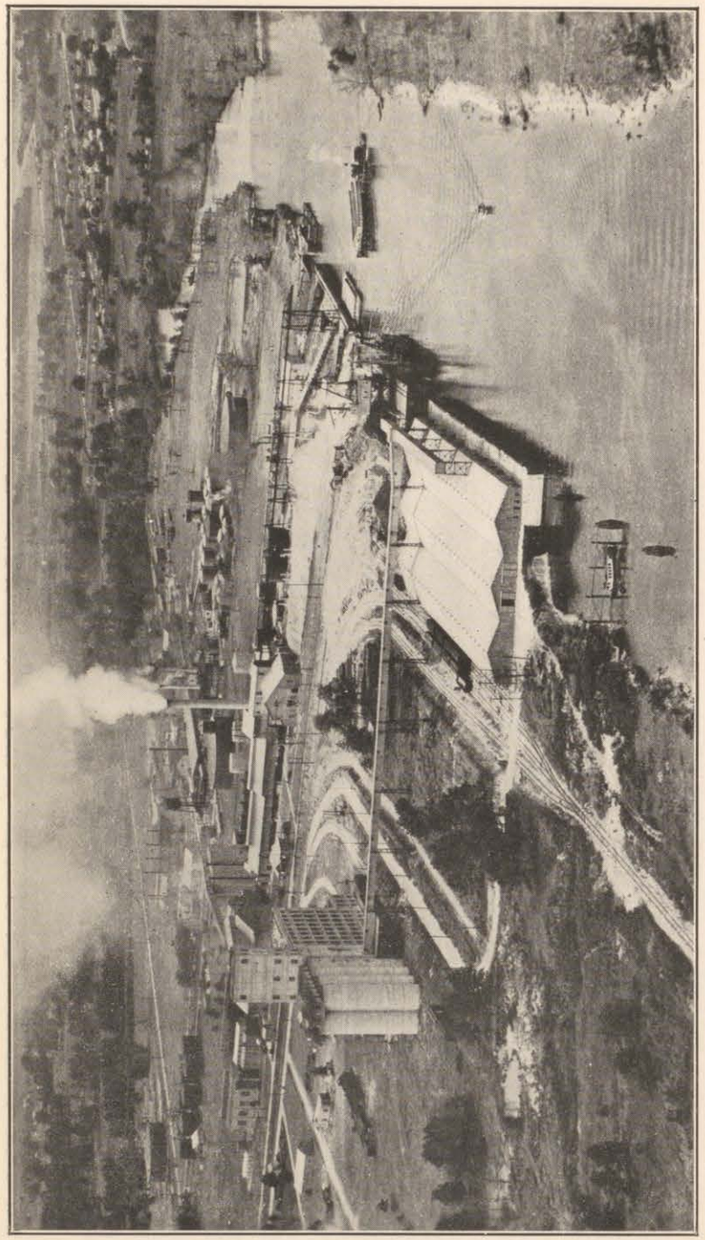
Reference number on map	10				11				12			
Name	Municipal Wharf No. 3—Continued.				Municipal Wharf No. 4—Continued.				Municipal Wharf No. 5—Continued.			
Railway facilities: Railway connecting	Municipal Harbor Belt Lines, connections to all railroads.				Municipal Harbor Belt Lines, connections to all railroads.				Municipal Harbor Belt Lines, connections to all railroads.			
	Location.	Number.	Length.	Surface or depressed.	Location.	Number.	Length.	Surface or depressed.	Location.	Number.	Length.	Surface or depressed.
Tracks—			*Feet.*				*Feet.*				*Feet.*	
On open wharf									Rear of small wharf.	2	700 each.	Surface.
On string piece or apron.	Lower half.	2	400 each.	Surface								
	Upper half.	1	300 each.									
Rear of transit shed		3	300 each.	Depressed		5	600 each.	Depressed.		1	700	Shelltracks.
Water supply	City of Houston mains and artesian wells at basin				City of Houston mains and artesian wells at basin				City of Houston mains and artesian wells at basin.			
Fire protection	3 towers 50,000 gallons each, 2 electric pumps high pressure, also city water supply. Gamewell call system to Houston fire department. Fire hydrants, barrels, and buckets.				3 towers 50,000 gallons each, 2 electric pumps high pressure, also city water supply. Gamewell call system to Houston fire department. Fire hydrants, barrels, and buckets.				3 towers 50,000 gallons each, 2 electric pumps high pressure, also city water supply. Gamewell call system to Houston fire department. Fire hydrants, barrels, and buckets.			
Electric current	Houston Lighting & Power Co				Houston Lighting & Power Co.				Houston Lighting & Power Co.			

Reference number on map	13	14	15
Name	Municipal Cotton Wharf.	Pritchard Rice Mill Wharf.	Texas Co. Wharf.
Exact location in harbor	West side of turning basin	Left bank of Buffalo Bayou between Hill Street and San Antonio & Aransas Pass R. R. bridges.	Right bank of Buffalo Bayou between Hill Street and International & Great Northern Ry. bridges.
Owned by	City of Houston	Pritchard Rice Mill Co	Texas Co.
Operated by	Harris County navigation district	do	Do.
Purpose for which used	Shipment of cotton and general merchandise	Rice milling and storage	Oil warehouse on bank.
Type of construction	Creosoted piles with wood deck	Small pile wharf	Pile bulkhead.
Description:			
Dimensions	800 feet (bulkhead or shore wharf)	80 feet (bulkhead or shore wharf)	100 feet (bulkhead or shore wharf).
Width of apron	18 feet (bulkhead or shore wharf)		None (bulkhead or shore wharf).
Depth of water at m. l. w.	25 feet (bulkhead or shore wharf)	5 feet (bulkhead or shore wharf)	6 feet (bulkhead or shore wharf).
Berthing space available	800 feet (bulkhead or shore wharf)	80 feet (bulkhead or shore wharf)	100 feet (bulkhead or shore wharf).
Capacity (per square foot).	750 feet (bulkhead or shore wharf)		Unlimited (bulkhead or shore wharf).
Deck above m. l. w.	27 feet (bulkhead or shore wharf)	6 feet (bulkhead or shore wharf)	24 feet (bulkhead or shore wharf).
Lighted or unlighted	Lighted	Lighted	Lighted.
Transit sheds	Wood construction with wood floor; corrugated iron front wall; rear wall brick.	None	None.
Length and width	800 by 94 feet		
Total floor area	75,000 square feet		
Height between floors	1 floor		
Allowable floor load (per square foot).	750 pounds		
Lighted or unlighted	Lighted		
Mechanical handling facilities.	One fixed electrically operated, cotton trolley conveyor system extending from wharf to warehouses.	One electrically operated, 2-ton slat conveyor, extending from wharf to warehouse.	One fixed, hand-operated, 1-ton vertical lift elevator, located outside of warehouse.
Railway facilities		None	
Railway connecting	Galveston, Harrisburg & San Antonio R. R. and Texas & New Orleans R. R.		Houston Belt & Terminal Ry. Co.
Tracks, rear of transit shed.	2, 800 feet each, depressed		1, about 300 feet, surface.
Water supply	City of Houston mains	None	City of Houston mains.
Fire protection	City of Houston fire department	City of Houston fire department	City of Houston fire department.
Electric current	Houston Lighting & Power Co	Houston Lighting & Power Co	Houston Lighting & Power Co.
Remarks	Leyland and Harris Steamship Line uses this wharf.		Concrete warehouse 120 by 50 feet located on the bank.

Reference number on map	16	17	18
Name	Baker Street Wharf.	Texas Sand & Gravel Co.	Direct Navigation Co. Wharf.
Exact location in harbor	Left bank of Buffalo Bayou at Baker Street	Left bank of Buffalo Bayou at foot of Caroline Street.	Left bank of Buffalo Bayou at foot of Caroline Street.
Owned by	City of Houston	City of Houston owns land	Southern Pacific Lines.
Operated by	do	Texas Sand & Gravel Co. (Horton & Horton)	Not in use at present time.
Purpose for which used	Handling pipe and general merchandise	Handling sand and gravel, barges to cars and wagons.	Formerly used for handling cotton, rail to barges.
Type of construction	Pile and timber	Wood derrick and loading platform on bank	Wood (in very bad order).
Description:			
Dimensions	80 by 16 feet (bulkhead or shore wharf)	200 feet (at derrick)	350 feet (bulkhead or shore wharf).
Depth of water at m. l. w.	3 feet (bulkhead or shore wharf)	7 feet (at derrick)	3 feet (bulkhead or shore wharf).
Berthing space available	80 feet (bulkhead or shore wharf)		350 feet (bulkhead or shore wharf).
Capacity, per square foot	1,000 feet (bulkhead or shore wharf)		
Deck above m. l. w.	6 feet (bulkhead or shore wharf)	15 feet (at derrick)	20 feet (bulkhead or shore wharf).
Lighted or unlighted	Unlighted	Unlighted	Unlighted.
Transit sheds	None	None	None.
Mechanical handling facilities.	None	One fixed, steam-operated, 3-ton, stiff-leg derrick, with 75 foot reach. Hopper with belt conveyor system to storage pile.	None.
Railway facilities	None	No railway tracks. Material conveyed to railway by belt conveyor.	None.
Water supply	None	City of Houston mains	City of Houston mains.
Fire protection	City of Houston fire depertment	City of Houston fire department	City of Houston fire departmen.
Electric current	None	Houston Lighting & Power Co	Houston Lighting & Power Co.

Piers, quays, wharves, moles, and docks (except dry docks), Houston, Tex.—Continued.

Reference number on map	19	20	21
Name	Buffalo Bayou Co.	Buffalo Bayou Co.	Main Street Wharf.
Exact location in harbor	Left bank of Buffalo Bayou near San Jacinto Street bridge.	Left bank of Buffalo Bayou near San Jacinto Street bridge.	Right bank of Buffalo Bayou at Main Street.
Owned by	City of Houston	Part, city of Houston; part, Armour Packing Co.	City of Houston.
Operated by	Buffalo Bayou Co	Buffalo Bayou Co	Harris County navigation district.
Purpose for which used	Handling shell and sand to cars	Handling shell and sand to cars	General merchandise shell and sand.
Type of construction	Piles as moorings for barges	Part of concrete, part of piles; bulkhead earth filled.	Concrete bulkhead.
Description:			
Dimensions	200 feet (at derrick)	200 feet (bulkhead or shore wharf)	552 feet (bulkhead or shore wharf).
Depth of water at m.l.w.	7 feet (at derrick)	7 feet (bulkhead or shore wharf)	8 feet (bulkhead or shore wharf).
Berthing space available	200 feet (at derrick)	250 feet (bulkhead or shore wharf)	552 feet (bulkhead or shore wharf).
Deck above m.l.w	10 feet (at derrick)	10 feet (Bulkhead or shore wharf)	10 feet (bulkhead or shore wharf).
Lighted or unlighted	No wharf or bulkhead. Unloading by derrick from barges to railroad cars.	Unlighted	Unlighted.
Transit sheds	None	None	
Length and width			70 by 24 feet.
Total floor area			1,680 square feet.
Height between floors			1 story.
Lighted or unlighted			Lighted.
Mechanical handling facilities.	One fixed, steam-operated, 3-ton, stiff-leg derrick, with 75 foot reach.	One fixed steam-operated, 3-ton, stiff-leg derrick with 60 foot reach.	None. Buffalo Bayou Co. has space assigned to them at lower end of wharf, and has 2 stiff-leg derricks fitted with 1½ cubic yards clamshell buckets for handling shell and sand from barges to wagons and cars.
Railway facilities	Houston Belt & Terminal Ry. Co.	Houston Belt & Terminal Ry. Co	Houston Belt & Terminal Ry. Co.
Tracks		None	None.
On string piece or apron.	Single track alongside of derrick		
Water supply	City of Houston water mains	City of Houston water mains	City of Houston water mains.
Fire protection	City of Houston fire department	City of Houston fire department	City of Houston fire department.
Electric current	Houston Lighting & Power Co	Houston Lighting & Power Co	Houston Lighting & Power Co.



MANCHESTER WHARF WITH GRAIN GALLERY CONNECTING WITH THE HOUSTON MILL & ELEVATOR COMPANY'S ELEVATOR, CHANNEL FUEL COMPANY'S COAL WHARF, AND TEXAS-PORTLAND CEMENT COMPANY'S WHARF.

Made expressly for this report by the U. S. Army Air Service.

GRAIN ELEVATORS.

Grain is handled at Houston by the Houston Mill & Elevator Co. located at Manchester, 600 feet in the rear of the Manchester wharf. This elevator is of concrete construction and has a storage capacity of 500,000 bushels. Its equipment consists of an electrically operated belt conveyor and 4 loading legs spaced 70 feet apart. The delivery capacity to ships is 10,000 bushels per hour and to cars 2,000 bushels per hour.

The new grain elevator which is under construction is described under the subject of "Public terminal improvements," on page 162.

STORAGE WAREHOUSES.

In addition to the transit sheds on the piers there are a municipal warehouse in the rear of wharf No. 4, three large cotton sheds in the rear of wharves Nos. 7 and 8, and numerous cotton warehouses located on the ship channel.

The municipal warehouse, which is of concrete construction, is used for the storage of miscellaneous merchandise. A large inclined traveling conveyor with a capacity of 100 tons per hour has been installed to carry cargo from ship side to warehouse in a continuous movement. Portable conveyors and a stacking machine have also been provided to facilitate the movement and placing of freight. The cotton sheds are equipped with a cotton trolley conveyor which connects the three sheds with one another and with the wharf front.

The following table gives detailed information regarding all the warehouses at the port:

Storage warehouses, Houston, Tex.

	Municipal.	Turning Basin Compress Co.	Municipal cotton shed A.	Municipal cotton shed B
Name of owner	City of Houston	Turning Basin Compress Co.	City of Houston	City of Houston.
Name and address of operator	Harris County navigation district.	Turning Basin Compress Co., Houston, Tex.	Harris County Navigation District.	Harris County navigation district.
Exact location	Rear of wharf No. 4 turning basin.	North side of turning basin	Rear of municipal wharves Nos. 7 and 8 at turning basin.	Rear of municipal wharves Nos. 7 and 8 at turning basin.
Kind of storage (dry, cold, etc.)	Dry	Dry	Dry	Dry.
Commodities stored	General cargoes	Cotton	Cotton	Cotton.
Cold-storage facilities	None	None	None	None.
Construction of warehouse:				
Type of construction	Concrete	Wood construction with brick walls and fire sills.	Wood construction, tar and gravel roof. Concrete and wood floor 600 x 125 feet.	Wood construction, tar and gravel roof. Concrete and wood floor 700 x 125 feet.
Number of stories	One		One	One.
Height between floors	20 feet			
Total floor area	201,203 square feet	274,393 square feet	75,000 square feet	87,500 square feet.
Total capacity	4,024,060 cubic feet	30,000 bales		
Allowable floor load (per square foot.)	2,000 pounds		2,000 pounds	2,000 pounds.
Transfer between ship and warehouse:				
Method	Traveling slat conveyor	Hand trucks	Hand trucks	Hand trucks.
Mechanical handling facilities (type and operation).	Slat conveyor capacity 100 tons per hour in either direction. Electrically operated.	None	Monorail trolley installed, but not used.	Monorail trolley installed, but not used.
Equipment in warehouse (quantity, kind, capacity, and operation).	10 one-ton portable conveyors, 20 feet long; capacity, 60 tons per hour; electrically operated. 6 portable belt conveyors, 20 to 60 feet long, with 5 horsepower electric motors.	None	None	None.
Fire protection	City of Houston and Magnolia Park waterworks system.	City of Houston and Magnolia Park waterworks system.	City of Houston and Magnolia Park waterworks system.	City of Houston and Magnolia Park waterworks system.
Remarks	One 20-ton traveling crane, 2 vertical-lift 8-ton elevators, connecting transit shed with warehouse.		Lighted	Lighted.

	Municipal cotton shed C.	Magnolia.	Alex. Sprunt & Son.	Merchants' Compress Co.
Name of owner	City of Houston	Magnolia Warehouse & Storage Co.	Alex. Sprunt & Son	Merchants' Compress Co.
Name and address of operator	Harris County navigation district.	do	do	do.
Exact location	Rear of municipal wharves Nos. 7 and 8 at turning basin.	Right bank ship channel near Brazos Bayou.	1 mile below turning basin	Left bank, Buffalo Bayou, ¾ mile east of San Antonio & Aransas Pass Ry. Bridge.
Kind of storage (dry, cold, etc.)	Dry	Dry	Dry	Dry.
Commodities stored	Cotton	Cotton	Cotton	Cotton and cotton linters.
Cold-storage facilities	None	None	None	None.
Construction of warehouse:				
Type of construction	Wood construction, tar and gravel roof, concrete and wood floor 700 by 125 feet.	1 concrete, 4 brick, and several concrete sheds.	Brick and concrete	Concrete.
Number of stories	1	5	2	2.
Height between floors		7 to 8 feet	12 feet	10 feet.
Total floor area	87,500 square feet	Property contains 15 acres, the most of which is covered by buildings, sheds, etc., as described above.	250,000 square feet	311,540 square feet.
Total capacity		75,000 bales	25,000 bales	46,000 bales.
Allowable floor load	2,000 pounds per square foot			Unlimited on cotton.
Transfer between ship and warehouse:				
Method	Hand trucks	Switch, barge and dray line		Car switch, barge or truck.
Mechanical handling facilities (type and operation).	Monorail trolley installed but not used.	Electrical conveyors		Hand conveyor lifts cotton to second floor.
Equipment in warehouse (quantity, kind, capacity, and operation).	None	Electrical conveyors; standard and high density compresses.	2 high-density compresses	High-density compress.
Fire protection	City of Houston and Magnolia Park water works system.	Automatic sprinkler system, together with connection to the system of the city of Magnolia Park.	City of Houston and Magnolia Park water works system.	City of Houston and Magnolia Park water works system, and auxiliary water tower.
Remarks	Lighted			

Storage warehouses, Houston, Tex.—Continued.

	Menkwa Compress Co.	Houston Compress Co.	Standard Compress Co.	Shippers' Compress Co.
Name of owner	Japan Cotton Trading Co.	Anderson Clayton Co	Standard Compress Co	Shippers' Compress Co.
Name and address of operator	do	do	do	do.
Exact location	7 miles north of Buffalo Bayou	7 miles north of turning basin	Right bank of Buffalo Bayou west of San Antonio & Aransas Pass Ry. Bridge.	Left bank of Buffalo Bayou near Hill Street Bridge.
Kind of storage (dry, cold, etc.)	Dry	Dry	Dry	Dry.
Commodities stored	Cotton	Cotton	Cotton	Cotton.
Cold-storage facilities	None	None	None	None.
Construction of warehouse:				
Type of construction	Concrete and brick	Concrete and brick	Brick	Frame, ironclad.
Number of stories	2	2	1	1.
Height between floors	12 feet	12 feet		
Total floor area		500,000 square feet	200,000 square feet	766,000 square feet.
Total capacity	20,000 bales	100,000 bales	36,000 bales	60,000 bales.
Allowable floor load			Unlimited	Unlimited.
Transfer between ship and warehouse:				
Method	Trucks and railway cars	Trucks and railway cars	Barges, cars, and trucks	Railway cars and trucks.
Mechanical handling facilities (type and operation).	None	Electric monorail	None	None.
Equipment in warehouse (quantity, kind, capacity, and operation).	Two high-density compresses	Two high-density compresses		Two high-density compresses.
Fire protection	City of Houston fire department	City of Houston fire department	City of Houston fire department	City of Houston fire department and two electric pumps with a capacity of 2,000 gallons per minute.

	Bayou City Compress Co.	Nelms & Kehoe.	Wolf Cotton Co.	Union Transfer & Storage Co.
Name of owner	Bayou City Compress Co.	Nelms & Kehoe	Wolf Cotton Co.	Corporation.
Name and address of operator	do	do	do	1113 to 1119 Vine St.
Exact location	Left bank of Buffalo Bayou near McKee Street Bridge	Clinton, 4 miles below turning basin.	Left bank of Buffalo Bayou east of Gulf, Colorado & Santa Fe R. R. bridge.	
Kind of storage (dry, cold, etc.)	Dry	Dry	Dry	Dry.
Commodities stored	Cotton	Cotton	Cotton	Merchandise.
Cold storage facilities	None	None	None	None.
Construction of warehouse:				
Type of construction	Wooden construction with brick fire walls.	Wooden construction with brick fire walls.	Wood and sheet iron	One mill constructed. One fireproof.
Number of stories	1	1	1	2 stories and basement to each.
Height between floors				10 feet.
Total floor area			103,860 square feet	95,000 square feet.
Total capacity	20,000 bales	60,000 bales	10,000 bales	950,000 cubic feet.
Allowable floor load	Unlimited as to cotton	Unlimited as to cotton	Unlimited as to cotton	250 pounds per square foot.
Transfer between ship and warehouse:				
Method	Trucks and cars	Trucks, cars, and barges	Hand trucks	Cars and truck.
Mechanical handling facilities (type and operation).			None	
Equipment in warehouse (quantity, kind, capacity, and operation).	Cotton compress		None	
Fire protection	City of Houston fire department	Private pump	City of Houston fire department	One warehouse sprinkled, both ADT watch supervisory service, 24 hours continual watch service.
Remarks				Private siding on Southern Pacific tracks.

	A. B. C. Storage & Moving Co.	Binyon Shipside Warehouse Co.	Westheimer Warehouse Co.
Name of owner	Corporation	W. J. Binyon, jr., president	Ben S. Hurwitz.
Name and address of operator.	Edw. T. Keough, 504 Colquitt St., 802-804 Walnut St.	do	Do.
Exact location		Adjacent Wharf No. 4 (ship's side)	2519 Commerce St.
Kind of storage (dry, cold, etc.).	Dry	Dry	Dry.
Commodities stored	Merchandise	Merchandise	General merchandise.
Cold-storage facilities	None	None	None.
Construction of warehouse:			
Type of construction	Brick and reinforced concrete	Reinforced concrete and steel	Brick (4), ironclad (1).
Number of stories	5	1	4.
Height between floors	10 feet	15 feet	10 feet.
Total floor area	25,000 square feet	150,000 square feet	100,000 square feet.
Total capacity		2,250,000 cubic feet	
Allowable floor load	250 pounds per square foot	Unlimited	250 pounds per square foot.
Transfer between ship and warehouse:			
Method	Motor truck	Electrical conveyor	Motor trucks.
Mechanical handling facilities (type and operation).	None	Electric trucks; electric stacker; hand stacker, and portable conveyors.	None.
Equipment in warehouse (quantity, kind, capacity, and operation).	Elevator	Two electric trucks, 3,000 pounds; one electrical stacker, 2,000 pounds; one hand stacker, 500 pounds; portable conveyors.	None.
Fire protection	Automatic fire doors; no sprinkler system	Fire sprinkler system throughout; ADT supervisory service; fire plugs and hose.	Each floor equipped with fire hose attached to hydrant; ironclad building; sprinkler system; watchman night and day.
Remarks	Located on the Houston East & West Texas Ry. and have track; can place about 4 cars.	Specialize in storage and handling of full cargoes.	

BULK FREIGHT STORAGE.

The only bulk freight storage in the vicinity of the wharves is a small space on wharf No. 3, of 9,349 square feet. This space is in almost constant use for shipments of scrap iron.

DRY DOCKS AND MARINE RAILWAYS.

There are no dry docks located at Houston. The three marine railways at the port are used for the repair of barges, small tugs, and launches up to 600 gross tons. The marine railway of the Elliott Shipyard is located at Harrisburg, two miles below the turning basin. It has an over-all length of 400 feet, and is capable of handling vessels up to 400 gross tons. The marine railway of the Clinton Shipyard located at Clinton, and that of the Lynchburg Marine Ways Co., located at Lynchburg, 4 and 16 miles, respectively, below the turning basin, have over-all lengths of 500 feet. These marine railways are capable of handling vessels up to 600 gross tons each. The Lynchburg Marine Ways Co. is not in operation at the present time. The dimensions and capacities of these facilities are shown in the following tables:

Dry docks, graving and floating, marine railways, patent slips, and pontoons, Houston, Tex.

	Marine railway, Elliott Shipyard.	Marine railway, Clinton Shipyard.	Marine railway, Lynchburg Repair Yard.
Owner	B. H. Elliott (Inc.)	Alonzo Smith	Lynchburg Marine Ways Co.
Exact location in harbor	At Harrisburg, 2 miles below turning basin.	At Clinton, 4 miles below turning basin.	At Lynchburg, 16 miles below turning basin.
Length:			
Over all	400 feet	500 feet	500 feet.
On bottom	Cradle, 120 feet	Cradle, 150 feet	Cradle, 150 feet.
Width at entrance	40 feet	60 feet	60 feet.
Depth at high water, ordinary spring tides: On sill.	6 feet	8 feet	8 feet.
Lifting power in tons	400	600	600.
Crane service	None	None	None.
Date built	Rebuilt 1919	1908; rebuilt 1919	1900; rebuilt 1909.
Remarks	Used for the repair of barges, small tugs, and launches.		Not in operation.

Tariff—Dry docks, marine railways, etc., Houston, Tex.

Marine railway at Clinton Shipyards, Clinton, Tex.

Hauling out vessels: Twenty-five cents per ton of 2,240 pounds for vessels up to 200 tons, with sliding scale on larger vessels dependent on the amount of work to be done on vessel.

Lay days: Ten dollars per day for the use of the ways, with one day free time included in the hauling out charge. Material and labor at cost, plus 10 per cent.

Marine railway of B. H. Elliott Ship Building Co., Harrisburg, Tex.

Hauling out vessels: From $30 to $50 on vessels ranging from 70 tons to 110 tons, and special charges above and below that tonnage.

Lay days: Ten dollars per day for use of ways, with three days free time included in hauling out charge. Labor and material at cost, plus 10 per cent.

Marine repair plants, Houston, Tex.

Name of plant.	Owner.	Repair shops.				Equipment for repairs to—				Equipment for calking wood steamers.	Stock material carried.	Capacity.	Largest casting produced (iron, steel, and brass.)	Largest shafts produced.	Exact location.	Owner.	Name of plant.	Remarks.
		Exact location.	Designation (machine, boiler, etc.)	Dimensions.	Number employes.	Wood vessels.	Steel vessels.	Hulls, engines, boilers, and dynamos.										
Houston Car Wheel & Machine Co.	Houston Car Wheel & Machine Co.	2 miles from harbor.	Grey Iron Foundry. Machine shop Pattern shop Forge shop Wheel foundry	70 by 250 feet 60 by 125 feet 50 by 60 feet 30 by 80 feet 96 by 235 feet	125 50 10 8 30	Yes	Yes	Yes		None.	Towing bits, roller chocks, manholes, mooring rings, fairleaders, watertight and nonwatertight deck scuttles; miscellaneous.	Any kind of repair work.	Iron, 18,000 pound; steel, none; brass, none.	8 inches by 10 feet.	2 miles from harbor	Houston Car Wheel & Machine Co.		Machine shop has 10-ton electric crane traveling full length of shop (245 feet). Railway track comes into shop for loading and unloading heavy machinery. Heavy duty machines; 8 foot boring mill; 30-inch planer; 48-inch lathes; shapers and milling machines.
B. H. Elliott (Inc.)	Elliott Shipyard	At Harrisburg on channel 2 miles below turning basin.	Mill; joiner shop, blacksmith shop, marine ways—Capacity 400 tons.			Ships, tugs, barges, yachts.	Above-water repairs only, on vessels over 400 tons.	Fully equipped to do wood work, steel work, boiler work.		Equipped.	Large stock, lumber, oakum, cotton, paints, marine hardware.	Above-water repairs, any size.			At Harrisburg on channel 2 miles below turning basin.	Elliott Shipyard	B. H. Elliott (Inc.)	Builds life boats, cargo booms, hatches, gangways, and ship joiner work.

Floating equipment, Houston, Tex.

DERRICK (TOWED) AND LIGHTERS.

	Derrick (towed).	Lighters.				
	Binyon-O'Keefe, Houston and Galveston, Tex.	Houston Harbor Transportation Co.			Suderman & Young.	
Purpose for which used	General derrick service	Lighterage			Lighterage.	
Base from which operated	Houston and Galveston	Turning basin			Houston.	
Zone of operations	Houston and Galveston	Turning basin and Manchester, also Long Beach.			Turning basin and Manchester.	
Number available	1	3	1	3	4	4
Length	165 feet	100 feet	98 feet	80 feet	120 feet	140 feet.
Beam	40 feet	30.6 feet	22.6 feet	22.5 feet	32 feet	36 feet.
Draft, loaded	5 feet	4 feet	4 feet	3 feet	4 feet	4 feet.
Open or covered	Open	Open			Open	
Cargo capacity	500 tons					
Mechanical handling facilities:		None			None.	
Type and description	Steel stiff-leg derrick					
Lifting capacity	75 tons					
Reach	70 feet					
How operated	Steam	Towed			Towed.	
Tariff	Rates dependent on character of service.					
Name	Ajax					

BARGES (TOWED) AND DERRICK BARGE.

	Barges (towed).				Derrick barge.
	G. C. Griffin.	Buffalo Bayou Co.	W. D. Haden.	Horton & Horton.	Suderman & Young.
Purpose for which used.	General service.	General service.	General service.	General service.	General service.
Base from which operated	Turning basin	Turning basin	Turning basin	Turning basin	Houston.
Zone of operations.	Houston Ship Channel.	Houston Ship Channel.	Houston Ship Channel.	Houston Ship Channel.	Houston and Galveston.
Number available and length.	2, 100 feet	12, 30 feet	8, 130 feet, 4, 120 feet.	8, 120 feet	1, 90 feet.
Beam	30 feet	12 feet	32 feet	30 feet.	30 feet	32 feet.
Draft, loaded	5 feet	3 feet	5 feet	5 feet	5½ feet	4 feet.
Open or covered	Open	Open	Open	Open	Open.
Indicated horsepower.					35.
Mechanical handling facilities.	None	None	None	None	Derrick.
Lifting capacity.					35 tons.
Reach					65 feet.
How operated	Towed	Towed	Towed	Towed	Steam.

List of tugs operating on Houston Ship Channel, Houston, Tex.

Name.	Gross tons.	Length.	Beam.	Name.	Gross tons.	Length.	Beam.
STEAM TUGS.				MOTOR TUGS.			
Adler	253	129.1	30.3	Anita	24	59.2	14.8
Centurion	415	142	31.6	Avis	13	52.5	12.3
De Bardeleben	429	142	27.7	Buster	12	33.6	10.5
Miraflores	206	118.6	23	Clara May	24	61	13
Roy Hoober	220	103	12.3	Douglas II	13	54	12.3
Messenger	181	94.2	25	Eva	14	55.3	11.2
Neches	98	89.7	23.6	Fannie D	12	41	12.6
Orion	127	96.5	22.2	Helen	43	68.6	15.6
Propeller	181	94.2	25	Ina	17	47	11.4
Dan Ryan	33	80	16.9	Irma W	11	41	11.2
Della	55	74	18.6	Lucy M	9	42	13
Ellis	25	60	14.8	Mason	9	31.5	11.3
Edmond Brown	86	70	19.8	Maud	13	51	13.1
Helen Henderson	96	86.2	18.2	Maye	16	60.6	13
John C. Stuart	163	88.4	25.5	Ohio	11	42	11
Mariner	89	78.6	20	Pearl	8	43	12.9
Minnie R	30	70	14.7	Terrell	21	45.5	12.3
New Brunswick	41	60	14	Velma	11	60.5	14.3
Zoe	71	72	16.8	Zelda	15	54.4	11.6
Wm. J. Kelly	42	66.4	18.8				

A number of the above listed tugs have their headquarters at Galveston, Tex.

WRECKING AND SALVAGE FACILITIES.

There are no firms at Houston which make an exclusive business of wrecking and salvage, but harbor tugs, derricks, and barges are available when required. There are three barges equipped with centrifugal pumps for handling sand or pumping out wrecks which are available for this service. Divers can be obtained on short notice from either Beaumont or Galveston.

COMMUNICATIONS.

RAILROADS.

The port is served by nine railroads and two belt lines, the Galveston, Houston & Henderson Railroad, the Gulf coast lines, the Gulf, Colorado & Santa Fe Railway, the International-Great Northern Railroad, the Missouri-Kansas-Texas Railroad of Texas, the San Antonio & Aransas Pass Railway, the Southern Pacific Co. Texas Lines, the Sugar Land Railway, and the Trinity & Brazos Valley Railway. The terminal companies are the Houston Municipal Harbor Belt Railway and Houston Belt & Terminal Co.

Of the nine railroads serving the port, five are described in the Galveston section of this report, viz.: Galveston, Houston & Henderson Railroad; Gulf, Colorado & Santa Fe Railway; International-Great Northern Railroad; Missouri-Kansas-Texas Railroad of Texas; and Southern Pacific Co. Texas Lines.

The Gulf Coast Lines comprise the New Orleans, Texas & Mexico Railway, the Beaumont, Sour Lake & Western Railway; the Orange & Northwestern Railroad, the St. Louis, Brownsville & Mexico Railway, the New Iberia & Northern Railroad, and the Louisiana Southern Railway; which extend from New Orleans to Brownsville on the Mexican border.

The San Antonio & Aransas Pass Railway has about 700 miles of main line connecting the Texas cities of San Antonio, Waco, Corpus Christi, and Houston, reaching the port of Aransas Pass on Aransas Bay.

The Sugar Land Railway is a short line extending from Cabell, Tex., to Anchor, Tex., and reaches Houston over the International Great Northern Railroad.

The Trinity & Brazos Valley Railway extends from Houston to Cleburne and Waxahachie, Tex., with trackage rights over the Houston & Texas Central to Fort Worth, Tex.

The Municipal Harbor Belt Railway consists of about 20 miles of track around the turning basin and at Manchester Wharf, and extending to Pasadena. It connects with the Southern Pacific lines near the turning basin.

The Houston Belt & Terminal Co. operates a belt line around the city connecting all rail lines entering the city. It has about 60 miles of tracks, about 25 of which are main line.

FACILITIES FOR INTERCHANGE BETWEEN RAIL AND WATER.

All wharves along the water front at which vessels regularly berth are served by either the Southern Pacific lines, the International Great Northern Railroad, the Houston Belt & Terminal Railway, or the Municipal Harbor Belt Railroad, and access to all other lines entering Houston is had through the lines named.

SWITCHING.

Information relative to switching by carriers serving both Houston and Galveston will be found in the section of this report pertaining to Galveston. The following shows certain charges applying at Houston:

Cotton and cotton linters in compressed bales are switched from freight depots, compresses, warehouses, and concentration sheds located on all lines (except Galveston, Houston & Henderson and Municipal Harbor Belt) within switching limits of Houston to municipal wharves and municipal cotton sheds for export at 8 cents per 100 pounds, including shipside delivery.

The Houston Belt & Terminal Railway makes the following charges: Shipments placed for delivery on a team or industry track and subsequently switched to another track are assessed $8.10 per car; when switched to interchange point with connecting line for delivery to another consignee or industry in Houston, $8.10 per car; switching to and from track scales on Municipal Belt Railway, $1.80 per car (does not include weighing); traffic having origin and destination beyond Houston, between interchange point with connecting line and Houston City wharves or industries on Municipal Belt Railway on south side of Buffalo River (Houston Ship Channel), $6.30 per car; traffic having origin or final destination within the city of Houston, between Houston City wharves or industries on Municipal Belt Railway on south side of Buffalo River (Houston Ship Channel) and team or industry tracks on Houston Belt & Terminal Railway or interchange point with connecting line, $8.10 per car; switching between municipal wharf units (south side) including storage plants and warehouses adjacent thereto, $4.50 per car plus car rental of $1.00 per car per day or fraction thereof.

The following additional tariff references are given:

Texas Lines No. 43–D, agent Fonda's I. C. C. No. 133
Gulf Coast Lines No. 487–E, I. C. C. No. A–672.
San Antonio & Aransas Pass Railway, I. C. C. No. 518.
Houston Belt & Terminal Ry. No. I–M, I. C. C. No. 26.

CAR DEMURRAGE.

See page 74.

WHARFAGE.

Wharfage charges applying at Houston are shown in Texas Lines tariff No. 21–E, agent Fonda's I. C. C. No. 134. Rates on some of the representative commodities handled are shown in the tables on pages 74 to 77.

LOADING AND UNLOADING.

Charges for unloading freight from or for loading freight into cars are in general the same at all Texas ports, including Beaumont, Texas City, Houston, Orange, and Galveston.

The charge is in most cases 2½ cents per 100 pounds; certain exceptions will be found by reference to page 82.

STORAGE.

Storage charges at Houston are the same as at Galveston and are contained in Texas Lines tariff No. 25–F, agent Fonda's I. C. C. No. 104. For details see page 84.

CARTAGE OR DRAYAGE.

See page 85.

ABSORPTIONS.

Absorptions by rail carriers at Houston on import, export, and coastwise traffic are in general similar to those at Galveston, which are shown on page 86.

On intrastate carload traffic and on interstate competitive carload traffic the rail carrier having the line haul absorbs the switching charge of connecting line originating or delivering the freight. The limit of $3.15 per car absorbed at Galveston on switching import, export and coastwise traffic does not apply at Houston, where the full charge of $6.30 per car is absorbed.

The following additional tariff references are given:

Gulf Coast Lines tariff No. 487–E, I. C. C. No. A–672.

International Great Northern tariff No. 2345–D, I. C. C. No. 812.

San Antonio & Aransas Pass Railway tariff, I. C. C. 518.

Trinity & Brazos Valley Railway tariff No. 146–J, I. C. C. No. 207.

TRANSIT PRIVILEGES

See page 87.

MISCELLANEOUS CHARGES AND ALLOWANCES.

See page 90.

STEAMSHIP LINES.

There are 17 steamship lines operating out of the port of Houston, of which 10 are under American registry, 2 under British, 2 under German, 1 under Italian, 1 under Spanish, and 1 under Mexican registry.

Of the 12 steamship lines operating out of Houston to foreign countries, 8 have regular sailings every 10 days. Houston has steamship service to and from the Atlantic and Pacific coasts of the United States, United Kingdom and Continental Europe, West Indies, Cuba and Mexico.

There are several lines of steamers engaged in the coastwise traffic from and to this port, including the Southern Steamship Co., Gulf Navigation Co. and E. W. Gilkerson Boat Line. The Luckenbach Steamship Co. (Inc.), and the Pacific Caribbean & Gulf Line have sailings to and from the west coast of the United States.

Further information regarding steamship lines is shown in the tables which follow.

Steamship lines, Houston, Tex.

UNITED KINGDOM AND EUROPE.

Name of line.	(a) Owner. (b) Operator.	Name and address of agent.	Nationality.	Between what points operated.	Location of terminals.	Schedule.	Class of service.
Harrison Line	(a) T. & J. Harrison. (b) Do.	W. C. Hunt, Herman Building.	British	Liverpool	Municipal wharves	10-day service	Freight.
Leyland Line	(a) F. Leyland & Co. (Ltd.). (b) Do.	do	do	do	do	do	Do.
Sgitcovich Line	(a) U. S. Shipping Board. (b) S. Sgitcovich & Co.	C. B. Fox, Cotton Exchange Building.	American	Liverpool, London, and German ports.	do	do	Do.
Hamburg-American Line.	(a) Hamburg-Amerikanische. (b) Do.	Lallier & Latta, Cotton Exchange Building.	German	German ports	do	do	Do.
Schindler Steamship Co.	(a) Schindler Steamship Co. (b) Do.	H. J. Schutte, agent, Herman Building.	do	North Atlantic ports and German ports.	do	Irregular	Do.
Creole Line	(a) Creole Line. (b) Navigazione Alta Italiz, mgrs.	Texas Transport & Terminal Co. (Inc.), Lumbermans Bank Building.	Italian	French, Spanish, and Italian ports.	do	do	Do.
Nervion Line	(a) Compania Maritima de Nervion. (b) Urquijo & Aldecoa.	Blakely Smith & Co., First National Bank Building.	Spanish	Spanish and Italian ports.	do	do	Do.

WEST INDIES.

Lone Star Steamship Co.	(a) Lone Star Steamship Co. (b) Do.	Blakely Smith & Co., First National Bank Building.	American	Porto Rico and all West Indies ports.	Municipal wharves	10-day service	Freight.
Lykes Bros. Line	(a) Lykes Bros. (b) Do.	S. J. Daugherty & Co., Commercial Bank Building.	do	Cuba, Porto Rico, and West Indies.	do	Irregular	Do.

COASTWISE.

Southern Steamship Co.	(a) Southern Steamship Co. (b) Do.	F. M. Johnson, local agent, Beatty Building.	American	Philadelphia	Municipal wharves	10-day service	Freight.
E. W. Gilkerson Boat Line.	(a) E. W. Gilkerson. (b) Do.	E. W. Gilkerson Boat Line No. 1, Main Street.	do	Corpus Christi	do	Irregular	Do.
Gulf Navigation Co.	(a) Gulf Navigation Co. (Inc.). (b) Do.	S. J. Daugherty & Co., Commercial Bank Building.	do	New Orleans	do	10-day service	Do.

INTERCOASTAL.

Pacific Caribbean & Gulf Line.	(a) Pacific Caribbean & Gulf Line. (b) Steele Steamship Co.	S. J. Daugherty & Co., Commercial Bank Building.	American	Pacific coast ports	Municipal wharves	Irregular	Freight.
Luckenbach Line	(a) Luckenbach Steamship Co. (Inc.). (b) Do.	W. C. Hunt, Herman Building.	do	Pacific ports	do	10-day service	Do.

OTHER FOREIGN DESTINATIONS.

Munson Steamship Line	(a) Munson Steamship Line (Inc.). (b) Do.	Blakely Smith & Co., First National Bank Building.	American	Mexico, South America, and West Indies.	Municipal wharves	10-day service	Freight.
Sinclair Navigation Co.	(a) Sinclair Navigation Co. (b) Do.	Sinclair Navigation Co., Chronicle Building.	do	Tampico and North Atlantic ports.	do	do	Oil.
Mexican Navigation Co.	(a) Mexican Navigation Co. (b) S. J. Daugherty & Co.	S. J. Daugherty & Co., Commercial Bank Building.	Mexican	Vera Cruz, Tampico, Progresso, and Frontera, Mexico.	do	Irregular	Freight.

STEAMSHIP RATES.

Steamship rates to and from Gulf ports on important commodities are shown on page 98.

TELEPHONE AND TELEGRAPH LINES.

Houston has telephone connections with the entire United States and Canada. The telephone system is operated by the Southern Bell Telephone Co. Telegraph communication is afforded by the Western Union Telegraph Co. and the Mackay Telegraph-Cable Co.

FREIGHT RATE SITUATION.

Information regarding the freight rate situation at the Galveston Bay ports is given on page 101.

COMMERCE OF HOUSTON, TEX.

The commerce of the port of Houston for the last six years is shown in detail in tables accompanying this report. From an examination of these tables it will be apparent that the business of the port has expanded rapidly throughout this period. In 1917 it amounted to 1,161,424 tons, increasing to 2,387,766 tons in 1918, 2,828,460 tons in 1921, and 3,365,644 tons in 1922. During the five-year period from 1917 to 1921 the imports have constituted 6.7 per cent, the exports 6.3 per cent, the domestic receipts and shipments 22 per cent, and the internal receipts and shipments 65 per cent of the business. A graph is presented showing the average annual commerce during this five-year period, segregated by important commodities.

Imports.—During the period 1917–1921 petroleum exceeded in tonnage all other commodities imported at Houston, the average annual amount received being 86,152 tons, or 73 per cent of the total imports. The import tonnage in 1917 amounted to 3,218 tons, increasing to 187,587 tons in 1920, 706,738 tons in 1921, and 369,694 tons in 1922.

Molasses ranked second among the imports, with an average annual movement of 3,282 tons, or 2.7 per cent of the total.

Exports.—During the five-year period the average annual movement of exports through the port of Houston amounted to 111,280 tons. The export tonnage increased rapidly from 1917 to 1922, showing a marked gain in 1922, when it amounted to 537,617 tons as compared with 11,064 tons in 1917.

Cotton led all commodities in point of tonnage exported from Houston during the period, the average annual amount shipped being 40,413 tons, or 36.3 per cent of the total exports. In 1919 the total exports of cotton amounted to 11,884 tons as compared with 70,989 tons in 1920, 119,192 tons in 1921, and 203,074 tons in 1922.

Gas oil took second rank among the exports, with an average annual movement of 28,780 tons, or 25.9 per cent of the total exports. Petroleum was next in volume among the exports, the average during the period mentioned being 19,476 tons.

Other commodities in the export business of the port were rice, cottonseed products, peanut cake, oil well supplies, and lumber.

Coastwise commerce.—Of the domestic receipts during the period 1917–1922, petroleum had an average annual movement of

48,525 tons, or 40 per cent of the total. Iron and steel and related manufactures ranked second, constituting 20.3 per cent of the total. The next important commodities were canned goods and groceries, which amounted to 7.8 per cent of the total.

Of the domestic shipments for the six-year period, petroleum led all other commodities, with an average annual movement of 226,458 tons, or 83.2 per cent of the total. Gas oil was the next important commodity, constituting 5.9 per cent of the total.

Internal commerce.—The internal receipts and shipments for the six-year period considered show an average annual movement of 1,152,538 tons. The commodities in the order of their importance were sand and shell, constituting 46.6 per cent of the total; paints and oils, 10.3 per cent; petroleum products, 9.6 per cent; rice, 8.3 per cent; and forest products, 7.5 per cent.

Water-borne commerce at the port of Houston, Tex., 1917–1922.

[Quantities expressed in short tons.]

FOREIGN.

Commodities.	1917	1918	1919	1920	1921	1922
IMPORTS.						
Animals and animal products, except wool and hair: Bones				7,300	2,330	4,835
Vegetable food products, oil seeds, expressed oils, and beverages:						
Bananas					3,985	
Coconuts						290
Coffee					724	2,500
Molasses				13,775	2,633	4,680
Sugar					3,083	
Total				13,775	10,425	7,470
Textiles:						
Bagging						690
Ixtle					7,752	
Wood and paper:						
Cinchona bark					9	
Paper						1,005
Nonmetallic minerals:						
Coal						183
Petroleum oil	3,218	22,700	10,517	187,587	206,738	369,694
Total	3,218	22,700	10,517	201,362	224,924	369,877
Ores, metals, and manufactures of, except machinery and vehicles:						
Cotton ties						1,117
Structural steel						6,286
Total						7,403
Unclassified: Miscellaneous			118,328			237
Total foreign imports	3,218	22,700	128,845	208,662	227,254	391,517

Water-borne commerce at the port of Houston, Tex., 1917–1922—Continued.

FOREIGN—Continued.

Commodities.	1917	1918	1919	1920	1921	1922
EXPORTS.[1]						
Animals and animal products, except wool and hair:						
Butter						12
Packing-house products				112	193	881
Total				112	193	893
Vegetable food products, oil seeds, expressed oils, and beverages:						
Bran					328	342
Corn					552	56
Cottonseed products	1,150				5,178	20,796
Flour				30	647	3,416
Peanut cake	1,460					
Sugar						12,941
Rice				2,049	47,508	21,454
All other					37	42
Total	2,610			2,079	54,250	59,047
Textiles: Cotton			11,884	70,989	119,192	203,074
Wood and paper:						
Furniture					28	6
Lumber	680		1,096	12,153	28	1,405
Portable houses					357	29
Roofing material				79	149	
Total	680		1,096	12,232	562	1,440
Nonmetallic minerals:						
Brick, clay, and cement	4,143			1,326	232	83
Coal				176	445	
Gasoil				109,432	34,472	
Petroleum oil					97,382	270,860
Sulphur				528		71
Total	4,143			111,462	132,531	271,014
Ores, metals, and manufactures of, except machinery and vehicles:						
Iron and steel manufactures	264			8,570	2,626	442
Steel tanks (knocked down)				2,190	236	
Total	264			10,760	2,862	442
Machinery and vehicles:						
Autos				19	248	4
Machinery				135	388	36
Oil-well supplies			693	7,900	4,877	955
Total			693	8,054	5,513	995
Chemicals:						
Acids					10	
Fertilizer	3,035				100	225
Paints	18			8	42	
Soap				100	16	59
Total	3,053			108	168	284
Unclassified: Miscellaneous	314			117	489	428
Total foreign exports	11,064		13,673	215,913	315,760	537,617

[1] No foreign exports in 1918.

Water-borne commerce at the port of Houston, Tex., 1917–1922—Continued.

DOMESTIC.

Commodities.	1917	1918	1919	1920	1921	1922
COASTWISE RECEIPTS.						
Animals and animal products, except wool and hair: Leather				59	122	40
Vegetable food products, oil seeds, expressed oils, and beverages:						
Beans					105	1,094
Canned goods	3,771			18,450	731	16,763
Coffee	406				38	
Groceries	4,401	11,921		978	2,064	1,804
Peanuts				472	245	132
Sirup				400		
Sugar				940	3,096	397
Vinegar				105	94	92
Total	8,578	11,921		21,345	6,373	20,282
Other vegetable products, except fibers and wood:						
Cigars				108	295	
Cork						299
Drugs					88	
Rubber goods						67
Total				108	383	366
Textiles:						
Bagging, burlaps, etc	995			1,601	1,328	4,473
Clothing and dry goods	704			210	138	263
Cordage, rope, and twine	649			405	22	
Goats' hair and human hair				14		330
Linoleum and oilcloth	64			2,904	1,148	2,768
Wool in grease				154		
Total	2,412			5,288	2,636	7,834
Wood and paper:						
Furniture				86	53	158
Lumber				2,000		2,406
Magazines				362	73	1,655
Paper and manufactures	1,031			3,724	1,096	1,821
Roofing material	1,344			4,338	971	3,683
Shingles					443	
Total	2,375			10,510	2,636	9,723
Nonmetallic minerals:						
Asphalt				390		
Cement				8,862	507	656
Coal					2,659	2,747
Lime					576	
Petroleum oil		7,168	74,269	25,144	136,046	100,575
Phosphate rock	3,752			4,700		
All other			843	18		407
Total	3,752	7,168	75,112	39,114	139,788	104,385
Ores, metals, and manufactures of, except machinery and vehicles:						
Babbitt metal						202
Hardware	5,364	10,154		658	1,690	1,103
Iron and steel	3,054					1,335
Iron and steel manufactures	7,295			38,600	10,915	28,303
Pipe				6,918	2,151	
Plumbing material				165	384	227
Rails, steel					4,225	
Staples and nails					12,641	
Structural steel						20,667
Tin plate				21		151
Wire and wire fencing					9,673	14,725
Wire rope				9,407	1,826	
Total	15,713	10,154		55,769	43,505	66,713

Water-borne commerce at the port of Houston, Tex., 1917–1922—Continued.

DOMESTIC—Continued.

Commodities.	1917	1918	1919	1920	1921	1922
COASTWISE RECEIPTS—continued.						
Machinery and vehicles:						
Agricultural implements					995	1,245
Machinery	696			1,266	1,755	788
Storage batteries				1,005	1,026	
Vehicles				39		75
Total	696			2,310	3,776	2,108
Chemicals:						
Ammunition	389				162	349
Medicines				199		1,213
Paints and oils	1,259			1,631	926	1,241
Phosphate rock						5,605
Soda, lye, and potash	931			2,869	1,843	1,810
Total	2,579			4,699	2,931	10,218
Unclassified: Miscellaneous	9,940	11,227	87,122	10,173	4,776	12,462
Total coastwise receipts	46,045	40,470	162,234	149,375	206,926	234,131
COASTWISE SHIPMENTS.						
Vegetable food products, oil seeds, expressed oils, and beverages:						
Cottonseed hulls						16
Cottonseed oil						640
Flour						212
Peanut oil	206					
Peas and beans						133
Rice	14,552			268		2,393
Total	14,758			268		3,394
Other vegetable products, except fibers and wood: Broomcorn						104
Textiles:						
Bags and bagging						1,288
Cotton and linters	23,509					1,359
All other						172
Total	23,509					2,819
Wood and paper: Lumber	3,639					609
Nonmetallic minerals:						
Charcoal						49
Cement	804					
Gas oil				30,652	49,330	106,916
Petroleum products	289,402	98,955	45,932	109,751	588,253	729,116
Sulphur						72
Total	290,206	98,955	45,932	140,403	637,583	836,153
Ores, metals, and manufactures of, except machinery and vehicles:						
Iron and steel articles						1,350
Iron, scrap						13,251
Total						14,601
Chemicals:						
Distillates						5,487
Fertilizer						407
Total						5,894
Unclassified: Miscellaneous	9,742		96,001			1,097
Total coastwise shipments	341,854	98,955	141,933	140,671	637,583	864,671

Water-borne commerce at the port of Houston, Tex., 1917–1922—Continued.

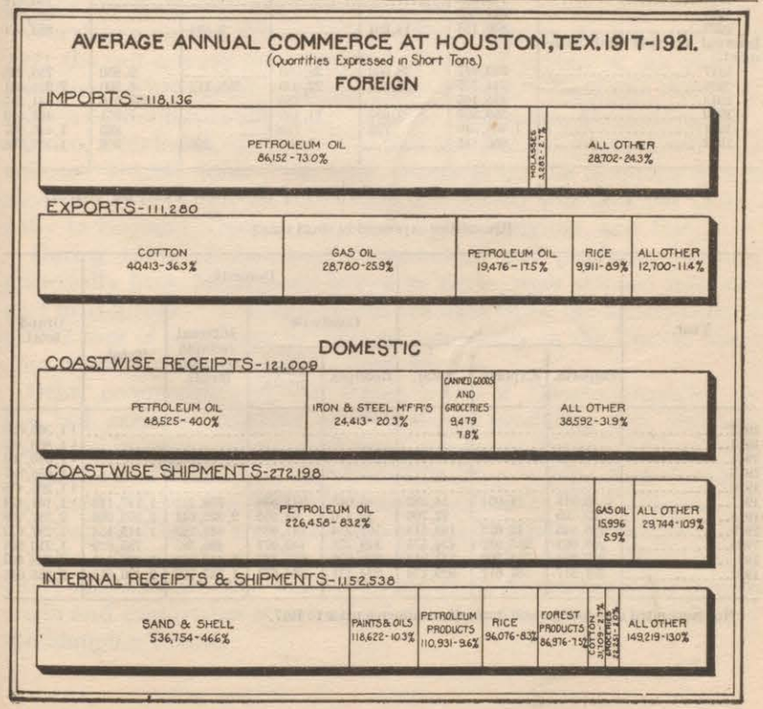
DOMESTIC—Continued.

Commodities.	1917	1918	1919	1920	1921	1922
INTERNAL RECEIPTS AND SHIPMENTS.						
Animals and animal products, except wool and hair:						
Mud shell	.....	.....	.....	.....	.....	629,255
Fish and oysters	2,500	800	.....	.....	.....	.....
Vegetable food products, oil seeds, expressed oils, and beverages:						
Fruits and vegetables	7,000	4,800	.....	3,277	252	207
Grain, feed, and hay	43,340	36,000	.....	15,340	595	1,024
Groceries	47,500	37,000	.....	25,707	1,048	1,540
Mineral water, beer, and ice	7,500	4,000	.....	3,480	67	53
Rice	1,440	445,068	6,735	13,180	13,959	11,011
Total	106,780	526,868	6,735	60,984	15,921	13,835
Textiles: Cotton	26	149,623	8,899	.....	.....	3,074
Wood and paper:						
Cordwood	200	600	.....	.....	.....	.....
Furniture and pianos	900	1,100	.....	1,890	141	278
Lumber, timber, shingles, etc	240,000	160,000	12,735	4,840	16,504	28,287
Total	241,100	161,700	12,735	6,730	16,645	28,565
Nonmetallic minerals:						
Brick and tiling	700	300	.....	1,600	144	65
Coal	1,100	800	.....	210	201	125
Crushed rock and gravel	700	800	.....	800	.....	.....
Gas oil	.....	.....	.....	92	1,187	.....
Lime and cement	4,000	3,000	135	3,000	395	405
Petroleum products	15,000	16,000	2,185	99,146	422,326	488,137
Phosphate rock	.....	.....	1,236	.....	.....	.....
Sand and shell	301,477	693,437	411,609	294,955	982,296	172,083
Total	322,977	714,337	415,165	399,803	1,406,549	660,815
Ores, metals, and manufactures of, except machinery and vehicles: Hardware	38,000	50,400	.....	9,607	778	.....
Machinery and vehicles:						
Machinery	38,000	22,000	135	9,608	779	1,604
Oil-well supplies	.....	.....	.....	1,500	.....	.....
Total	38,000	22,000	135	11,108	779	1,604
Chemicals:						
Fertilizer	.....	.....	.....	.....	.....	250
Paints and oils	.....	593,113	.....	.....	.....	.....
Unclassified:						
Junk	5,300	6,000	.....	6,500	.....	.....
General merchandise and oils	.....	.....	67,826	.....	.....	.....
Miscellaneous	4,560	800	329,792	851	265	310
Total	9,860	6,800	397,618	7,351	265	310
Total internal receipts and shipments	759,243	2,225,641	841,287	495,583	1,440,937	1,337,708

Summary of water-borne commerce at the port of Houston, Tex., by classes.

[Quantities expressed in short tons.]

	Animals and animal products, except wool and hair.	Vegetable food products, oil, seeds, expressed oils, and beverages.	Other vegetable products, except fibers and wood.	Textiles.	Wood and paper.
FOREIGN.					
Imports:					
1920	7,300	13,775	.....	.....	.....
1921	2,330	10,425	.....	7,752	9
1922	4,835	7,470	.....	690	1,005
Exports:					
1917	2,610	.....	.....	.....	680
1919	.....	.....	.....	11,884	1,096
1920	2,079	.....	.....	70,989	12,232
1921	54,250	.....	.....	119,192	562
1922	893	59,047	.....	203,074	1,440
DOMESTIC.					
Coastwise receipts:					
1917	.....	8,578	.....	2,412	2,375
1918	.....	11,921	.....	.....	.....
1920	59	21,345	108	5,288	10,510
1921	122	6,373	383	2,636	2,636
1922	40	20,282	366	7,834	9,723
Coastwise shipments:					
1917	.....	14,758	.....	23,509	3,639
1920	.....	268	.....	.....	.....
1922	.....	3,394	104	2,819	609
Internal receipts and shipments:					
1917	2,500	106,780	.....	26	241,100
1918	800	526,868	.....	149,623	161,700
1919	.....	6,735	.....	8,899	12,735
1920	.....	60,984	.....	.....	6,730
1921	.....	15,921	.....	.....	16,645
1922	629,255	13,835	.....	3,074	28,565



Summary of water-borne commerce at the port of Houston, Tex., by classes—Contd.

	Non-metallic minerals.	Ores, metals, and manufactures of, except machinery and vehicles.	Machinery and vehicles.	Chemicals.	Unclassified.	Grand total.
FOREIGN.						
Imports:						
1917	3,218					3,218
1918	22,700					22,700
1919	10,517				118,328	128,845
1920	187,587					208,662
1921	206,738					227,254
1922	369,877	7,403			237	391,517
Exports:						
1917	4,143	264		3,053	314	11,064
1919			693			13,673
1920	111,462	10,760	8,054	108	117	215,913
1921	132,531	2,862	5,513	168	489	315,760
1922	271,014	442	995	284	428	537,617
DOMESTIC.						
Coastwise receipts:						
1917	3,752	15,713	696	2,579	9,940	46,045
1918	7,168	10,154			11,227	40,470
1919	75,112				87,122	162,234
1920	39,114	55,769	2,310	4,699	10,173	149,375
1921	139,788	43,505	3,776	2,931	4,776	206,926
1922	104,385	66,713	2,108	10,218	12,462	234,131
Coastwise shipments:						
1917	290,206				9,742	341,854
1918	98,955					98,955
1919	45,932				96,001	141,933
1920	140,403					140,671
1921	637,583					637,583
1922	836,153	14,601		5,894		864,671
Internal receipts and shipments:						
1917	322,977	38,000	38,000		9,860	759,243
1918	714,337	50,400	22,000	593,113	6,800	2,225,641
1919	415,165		135		397,618	841,287
1920	399,803	9,607	11,108		7,351	495,583
1921	1,406,549	778	779		265	1,440,937
1922	660,815		1,604	250	310	1,337,708

Summary of waterborne commerce at the port of Houston, Tex., by years.

[Quantities expressed in short tons.]

Year.	Foreign.			Domestic.				Grand total.
				Coastwise		Internal receipts and shipments.	Total.	
	Imports.	Exports.	Total.	Receipts.	Shipments.			
1912								[1] 1,365,050
1913								[1] 1,860,452
1914								[1] 1,070,700
1915								[1] 1,656,347
1916								[1] 1,295,418
1917	3,218	11,064	14,282	46,045	341,854	759,243	1,147,142	1,161,424
1918	22,700		22,700	40,470	98,955	2,225,641	2,365,066	2,387,766
1919	128,845	13,673	142,518	162,234	141,933	841,287	1,145,454	1,287,972
1920	208,662	215,913	424,575	149,375	140,671	495,583	785,629	1,210,204
1921	227,254	315,760	543,014	206,926	637,583	1,440,937	2,285,446	2,828,460
1922	391,517	537,617	929,134	234,131	864,671	1,337,708	2,436,510	3,365,644

[1] Not segregated into foreign and domestic commerce prior to 1917.

TERRITORY TRIBUTARY TO HOUSTON.

The territory served by the Galveston Bay ports as a whole is explained in the report on Galveston, page 141, and shown on the map accompanying that report.

Territory served for import traffic.—Through the cooperation of the Gulf, Colorado & Santa Fe Railway, Missouri-Kansas-Texas Railroad Co. of Texas, International-Great Northern Railroad Co., San Antonio & Aransas Pass Railway, St. Louis, Brownsville & Mexico Railway (G. C. Lines), and the Southern Pacific (Texas Lines), the board has been able to procure statistics showing the origin of exports and the destination of imports handled by the rail carriers through Houston during the calendar year 1921.

Import commodities shown by railroad figures as moving through the port of Houston during the calendar year 1921 consisted of sisal, bones, bananas, molasses, and coffee.

Sisal, imported from Mexico, was moved by rail to Illinois, Missouri, Ohio, and Washington. Bones were moved to points in Texas and molasses from Cuba went to Illinois and points in Texas. Bananas were forwarded to Arkansas, California, Colorado, Kansas, Missouri, Oklahoma, and points in Texas. The larger share of coffee coming to Houston from Brazil was consumed in the State of Texas while a small amount was moved to Oklahoma.

Territory served for export traffic.—During the calendar year 1921 the rail carriers brought 253,844 tons of cotton to the Port of Houston. This cotton was moved to the port from the States of Arkansas, California, Colorado, Kansas, Louisiana, Mississippi, New Mexico, Oklahoma, and Texas. The last named State alone contributed 216,587 tons. The data prepared by the Shipping Board show that the cotton moving through Houston was destined principally to England, Germany, France, Spain, Belgium, and Italy.

During 1921, 131,854 tons of petroleum and products, received principally from Mexico and points in Texas, were shipped from the port of Houston. The Shipping Board data show the distribution of 87,047 tons of petroleum as destined principally to the United Kingdom, Germany, Holland, Cuba, and Mexico.

Other commodities in the export trade of Houston handled by the rail carriers consisted of cottonseed products, rice, sulphur, and machinery parts received from points in Texas; lumber from Louisiana and Texas; fire clay from Illinois; iron pipe from Indiana, Louisiana, Ohio, and Oklahoma and steel tanks from Illinois.

A map and tables are presented showing by States the origin of the exports and the destination of the imports through Houston during 1921; also another map and tables are presented showing the foreign origin and destination of certain of these movements as reported by the Shipping Board.

Destination of imports through Houston by rail during the calendar year 1921.

[Quantities expressed in short tons.]

Commodities.	Total.	Arkansas.	California.	Colorado.	Illinois.	Kansas.	Missouri.	Ohio.	Oklahoma.	Texas.	Washington.
Animals and animal products, except wool and hair:											
Bones	1,635									1,635	
Vegetable food products, oil seeds, expressed oils, and beverages:											
Bananas	1,316	10	120	80	200	10	120		40	736	
Coffee	347								16	331	
Molasses	570				90					480	
Textiles:											
Sisal	4,514				420		122	3,875			97
Total	8,382	10	120	80	710	10	242	3,875	56	3,182	97

Origin of exports delivered at Houston by rail during the calendar year 1921.

[Quantity expressed in short tons.]

Commodities.	Total.	Arkansas.	California.	Colorado.	Illinois.	Indiana.	Kansas.	Louisiana.	Michigan.	Mississippi.	New Mexico	New York.	Ohio.	Oklahoma.	Pennsylvania.	Texas.
Vegetable food products, oilseeds, expressed oils and beverages:																
Bran	25															25
Cottonseed cake	133															133
Cottonseed meal	962															962
Flour	20															20
Rice	47															47
Textiles:																
Cotton	253,844	3,599	407	68			241	9,893		165	156			22,723		216,587
Oakum	5											5				
Wood and paper:																
Lumber	313							284								29
Nonmetallic minerals:																
Fire brick	34				34											
Fire clay	25															25
Sulphur	90															90
Ores and metals:																
Iron pipe	264					81		124					36	23		
Nails	3															3
Steel tanks	83				83											
Machinery and vehicles:																
Autos	13								13							
Auto trucks	8														8	
Machinery, parts	48															48
Chemicals:																
Acids	25															25
Total	255,942	3,599	407	68	117	81	241	10,306	13	165	156	5	36	22,746	8	217,994

Origin of principal imports through the port of Houston during the calendar year 1921.[1]

[In cargo tons of 2,240 pounds.]

	Sugar.	Molasses.	Coffee.	Fibres, manufactures.	Petroleum, crude.	Iron and steel and manufactures.	Dyeing and tanning materials.	All others.	Total.
IMPORTS.									
West Indies: Cuba	2,829	2,300							5,129
Mexico				6,835	175,405	10		4	182,254
Central America: Costa Rica							1		1
East Coast South America:									
Brazil			647						647
Argentina								2,200	2,200
Total			647					2,200	2,847
Total	2,829	2,300	647	6,835	175,405	10	1	2,204	190,231

Destination of principal exports through the port of Houston during the calendar year 1921.[1]

[In cargo tons of 2,240 pounds.]

	Wheat.	Other grains.	Wheat flour.	Vegetables.	Fruits and nuts.	Cotton, raw.	Cotton manufactures.
EXPORTS							
United Kingdom:							
England		1,798			1	19,606	
Ireland							
Scotland							
Total		1,798			1	19,606	
Havre-Hamburg range:							
Germany	1,280	3,516				58,624	546
Holland		261				722	
Belgium		550				1,384	
France		2,014				15,520	
Total	1,280	6,341				76,250	546
West Mediterranean:							
Spain (Mediterranean)						7,694	
Italy						302	
Total						7,996	
East Mediterranean and Black Sea:							
Russia (Black Sea)		480					
Turkey	2,446						
Total	2,446	480					
West Indies:							
Cuba		918	296	12			
Dominican Republic		20					
Total		938	296	12			
Total	3,726	9,557	296	12	1	103,852	546

[1] Prepared by the Division of Statistics, Bureau of Research, United States Shipping Board.

Origin of principal imports through the port of Houston during the calendar year 1921—Continued.

	Petroleum and products.	Iron and steel and manufactures, n. e. s.	Machinery (including agricultural).	Vehicles.	Lumber.	All others.	Total.
EXPORTS.							
United Kingdom:							
England	12,104			4		1	33,514
Ireland	4,450						4,450
Scotland	7,300						7,300
Total	23,854			4		1	45,264
Havre-Hamburg range:							
Germany	32,435				172	922	97,495
Holland	4,936						5,919
Belgium							1,934
France	33						17,567
Total	37,404				172	922	122,915
West Mediterranean:							
Spain (Mediterranean)	7						7,701
Italy							302
Total	7						8,003
East Mediterranean and Black Sea:							
Russia (Black Sea)						10	490
Turkey							2,446
Total						10	2,936
West Indies:							
Cuba	785				3	1,778	3,792
Dominican Republic							20
Total	785				3	1,778	3,812
Mexico	24,997	144	4		779	8,138	34,062
Total	87,047	144	4	4	954	10,849	216,992

GENERAL.

Houston furnishes a noteworthy example of a successful port at an inland point originally inaccessible to ocean vessels. The construction of a channel 25 feet deep, 150 feet wide in the bay and 100 feet wide thence to Houston, was undertaken by the United States pursuant to the act of March 3, 1899, and in 1905 the plan was modified so as to terminate the channel with a turning basin at the head of Long Reach about 7 miles from Main Street, Houston. One-half the cost of constructing the 25-foot channel was contributed by local interests, who also contributed one-half the cost of two pipe line dredges for maintenance of the channel. The act of March 2, 1919, provided for the present project for deep draft navigation, a 30-foot channel, 250 feet wide across Galveston Bay and 150 feet wide to the head of Long Reach, with a turning basin, at the upper end.

The growth of the port during the last few years has been rapid. It now has regular line service to the United Kingdom, Germany, and the West Indies and irregular service to France, Spain, Italy, Mexico, and South America. One line operates regular service coastwise to Philadelphia and another to New Orleans. There is also regular service to the Pacific coast. The imports have increased from 3,200 tons in 1917 to 391,000 tons in 1922, and the exports from 11,000 tons in 1917 to 537,000 tons in 1922. The exportation of cotton has been a development of the last four years; none was exported in 1917 and less than 12,000 tons in 1919, while the total in 1922 amounted to 294,000 tons. Petroleum exports during the latter year were 271,000 tons. These two commodities, for the five years mentioned, comprised 76 per cent of the total imports and exports. The only other important exports are rice, refined sugar, and cottonseed meal, products of local industries. Houston participates only to a very small extent in the shipment of grain and sulphur, both of which move in important quantities through Galveston and Texas City. During the last year the port has made efforts to develop new lines of import trade and has been successful in attracting a substantial movement of coffee. Of the internal receipts and shipments, sand and shell comprised 46.6 per cent.

The load conditions for vessels are even less favorable than at Galveston. The Shipping Board figures for the calendar year 1921 indicate that all imports came from the West Indies, Mexico, and South America, and that nearly all exports went to the United Kingdom and Europe.

Houston has constructed modern terminal facilities both at the turning basin and at Manchester 2 miles below the turning basin. The facilities at the former place include transit sheds supported by a compress, cotton sheds, a concrete warehouse and a cottonseed-cake grinding and sacking plant, and mechanical facilities for handling cargo directly from shipside to storage. The wharves have loading heads for bunkering ships with fuel oil which is supplied from adjacent tanks. The wharf at Manchester has a grain gallery connecting with a 500,000-bushel elevator and flour mill. The general cargo terminals are now used to the limit of their capacity. Money has been voted and plans have been approved for extending them so as practically to double the present capacity of the port. Included in the extension will be a grain elevator with conveyor galleries leading to all the new berths.

The port is connected with the city of Houston by a light-draft channel which was formerly dredged to 8 feet but now has a controlling depth of 5 feet. There is also an improved highway to Houston, and the Houston Municipal Harbor Belt Railway connects the port facilities with the International Great Northern Railroad and the Galveston, Houston & San Antonio Railway, through which connection is made with all other lines serving the port. The Houston Belt & Terminal Railway connects the several railroads entering the city of Houston, but its tracks do not extend to the port terminals. On through traffic the railroads absorb the switching charge required to make delivery at the piers. Local movements between Houston and the municipal piers, however, must pay the charge assessed by the tariffs for the particular movement or resort to drayage. It is expected that a lighterage service will be established between Houston and the port terminals for local receipt and delivery of freight. The expense of the local movement between Houston and the terminals is, however, considerably less than the cost of shipping goods by rail to Galveston or Texas City, and hence the establishment of the port has resulted in substantial savings on local business.

For practically all traffic the ports of Galveston, Houston, and Texas City form one important national gateway. They serve the same general territory extending from California as far east as Cincinnati and for limited business even as far as Pittsburgh. It is true that the commerce of Houston and Texas City is less extensive than that of Galveston, and that there are certain differences in the traffic which reflect minor differences in the territory served. Houston does not participate materially in the grain trade, though it may do so when plans now under way are completed, nor does it handle such an extensive list of manufactured products as move through Galveston from interior points. Each of the three ports, however, has opportunity for participation in busi-

ness from the same territory, as is more fully explained in the Galveston report.

From the standpoint of railroad communications, Houston is well qualified to serve an extensive territory. While railroad rates from important interior points are the same as to Galveston, Houston enjoys an advantage of ½ cent per hundred pounds on cotton shipped for export from certain points in Texas, Oklahoma, and New Mexico. However, most of the cotton moves to the port on the domestic rate for concentration. Cotton consigned to either Galveston, Houston, or Texas City may be reconsigned for export through any of these ports. Recent statistics show that cotton movements through Houston have increased with a decline in such shipments through Galveston and Texas City. So far as facilities and charges are concerned, these ports are very nearly upon an equal basis in competition for this trade. A large amount of the cotton is controlled by Houston interests and is shipped through their own port. Vessel service to Houston is at present quite limited as compared with Galveston and New Orleans. The fact that so many lines now go to Galveston, however, assures Houston of shipping services to nearly all parts of the world whenever the cargo offerings are sufficient to warrant the call.

List of piers and wharves, port of Houston, Tex.

Reference No. on map.	Names of terminals	No. of page on which described.
1.	City Wharf	186
2.	Channel Fuel Co. Wharf	186
3.	Texas Portland Cement Co. Wharf	186
4.	Magnolia Petroleum Co. Wharf	187
5.	Magnolia Warehouse & Storage Co. Wharf	187
6.	Alex Sprunt & Sons Bulkhead	187
7.	Armour Fertilizer Co. Wharf	188
8.	Municipal Wharf No. 1	188
9.	Municipal Wharf No. 2	188
10.	Municipal Wharf No. 3	189
11.	Municipal Wharf No. 4	189
12.	Municipal Wharf No. 5	189
13.	Municipal Cotton Wharf	190
14.	Pritchard Rice Mill Wharf	190
15.	Texas Company Wharf	190
16.	Baker Street Wharf	191
17.	Texas Sand & Gravel Co	191
18.	Direct Navigation Co. Wharf	191
19.	Buffalo Bayou Co	192
20.	Buffalo Bayou Co	192
21.	Main Street Wharf	192

THE PORT OF TEXAS CITY, TEX.

PORT AND HARBOR CONDITIONS.

GENERAL DESCRIPTION.

Texas City is situated on the mainland of Texas on the west side of Galveston Bay about 7½ miles northwest of the city of Galveston. By rail, it is 15 miles from Galveston, 43 miles from Houston, and 405 miles from New Orleans.

For information relative to navigation see pages 1 and 2.

TIDES.

Under ordinary conditions the mean tidal range in the Texas City Channel is about 1¼ feet, and the extreme range is 1½ feet. The height of the tide is dependent largely on the wind, and during "northers" in the winter season the water surface may be depressed 2 feet below mean low tide. The tides in Galveston Bay are irregular, varying considerably with the wind.

See page 3 for information relative to tides in Galveston Bay.

TIDAL CURRENTS.

The normal tidal currents are weak except in the entrance to the channel, where they are decreased or accelerated greatly by the force and direction of the winds.

ANCHORAGES.

There is anchorage space within the harbor with 30-foot depth at mean low water for five standard ships. This anchorage is protected by dikes on the east, south, and north sides and by land on the west side. Vessels are forbidden to anchor in any part of the channel. There is ample anchorage in Bolivar Roads lying between Bolivar Point on the north and Galveston and Pelican Island on the south.

See page 3 for information relative to anchorage in Bolivar Roads.

WEATHER CONDITIONS.

Open season for navigation.—Texas City Harbor and Channel are navigable throughout the year.

Prevailing winds.—The prevailing wind is from the southeast.

Fogs.—Fog occurs irregularly during the months of November to March. Usually southerly winds bring it in, and northerly winds clear it away.

Precipitation.—The Weather Bureau reports for a period of 36 years show the mean annual precipitation to be 47.06. The rainfall was heaviest during this period in August with 5.01 inches and September with 5.41 inches. The table below gives the mean precipitation for each month.

Temperature.—The annual average temperature is 69° F. Weather Bureau reports for the past 37 years show the annual mean maximum temperature to be 74.8° F. and the annual mean minimum 64.9° F.

Meteorological data.

Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Daily mean maximum temperature for 37 years (°F.).												
59.2	61.2	67.9	74.1	80.3	86.1	88.2	88.0	84.4	77.5	68.6	62.0	74.8
Daily mean minimum temperature for 37 years (°F.).												
48.2	50.4	57.8	64.7	71.1	76.9	78.4	78.4	75.1	67.7	58.1	57.3	64.9
Maximum wind velocities and direction for 51 years.												
64 S	59 N	61 N	72 N	60 NW	62 SE	68 E	93 E	84 NE	62 NW	54 NW	54 N	93 E
Prevailing direction of wind for 20 years.												
SE	SE	SE	SE	SE	SE	S	S	SE	SE	SE	SE	SE
Mean precipitation (inches) for 36 years.												
3.62	3.10	2.90	3.13	3.23	4.75	3.98	5.01	5.41	4.18	4.02	3.73	47.06

HEALTH CONDITIONS.

The health conditions at Texas City are good. There is no special season when unsanitary conditions prevail.

BRIDGES.

There are no bridges across the Texas City Channel.

HARBOR IMPROVEMENTS BY THE UNITED STATES.

The original project, as adopted by the river and harbor act of March 3, 1899, provided for a channel 100 feet wide at bottom and 25 feet deep, extending from the Texas City wharves to 25 feet of water in Galveston Harbor, a distance of about 34,000 feet. This

was completed May 19, 1905. The river and harbor act of June 25, 1910, enlarged the project by providing for the dredging of the channel throughout to a depth of 30 feet and width of 200 feet, with extension 687 feet long of the same dimensions, so as to connect with a new slip excavated by the Texas City Terminal Co. in front of a new wharf. Under this project the extension was made and the channel dredged to full project dimensions for 5,000 feet out from its inner end.

The existing project was adopted by the river and harbor act of March 4, 1913. This project provides for the widening of the 30-foot channel to 300 feet, with a dike on the northerly side. The project was completed in 1916. The ruling depth on June 30, 1922, was 30 feet at mean low tide for a least width of 150 feet.

TERMINAL IMPROVEMENTS.

The terminal facilities at Texas City are all owned by the Texas City Transportation Co., though largely operated by the Texas City Terminal Co. These facilities occupy an improved water frontage, including slips of 5,765 linear feet.

Detailed information regarding these facilities is given under the general heading of piers, wharves, docks, etc., page 241.

OWNERSHIP OF THE WATER FRONT.

The entire length of the improved water front of 6,800 feet is owned or controlled by the Texas City Terminal Railway Co.

PORT CUSTOMS AND REGULATIONS.

FEDERAL ACTS AND REGULATIONS.

General regulations.—The port is open at all hours. Vessels may be cleared by agents between the hours of 9 a. m. and 4.30 p. m.

Public Health Service, Treasury Department.

PUBLIC HEALTH SERVICE, TREASURY DEPARTMENT.

Quarantine.—The procedure with reference to quarantine is the same for the port of Texas City as for the port of Galveston. Information on this matter is given on page 8.

Hospitals.—The hospitals at Galveston are available, 40 minutes by ambulance from Texas City.

See page 8 for list of hospitals and information relative to the regulations of the United States Public Health Service.

CUSTOMS SERVICE.

A branch of the customhouse is located 100 feet west of the main slip bulkhead between warehouses A and B. It is open from 8 a. m. to 5 p. m., except on Saturdays, when it closes at 12 o'clock noon. The working hours of the customs inspectors are from 8 a. m. to 5 p. m., unless special permit is granted by the collector of customs for overtime work.

Cargo is delivered by the Texas City Terminal Railway Co. on permits from the collector of customs.

For a digest of the principal regulations of the customs service affecting vessels and freight in foreign and coastwise commerce, see page 10.

IMMIGRATION SERVICE, DEPARTMENT OF LABOR.

Information relative to the Immigration Service is given on page 14.

FEDERAL DOCUMENTS.

A list of the documents which vessels are required to have is given on page 15.

LOCAL REGULATIONS.

The following are extracts from the revised ordinances of the city of Texas City to October 16, 1922, as ordained by the board of commissioners:

HARBORS, WHARVES, AND TERMINALS.

SEC. 107. *Vessels hauling into wharves to top yards, etc.*—It shall be unlawful for any ship or vessel to haul into the wharves of Texas City without their yards being topped, anchor flukes taken inboard or stoppered at the hause pipes, cables bent and clear with 10 fathoms range of chain overhauled jib and flying jibboom rigged in, stern and quarter davits and bumpkins turned in or unshipped.

SEC. 108. *Speed of vessels.*—It shall be unlawful for any ship or vessel passing in the channel in the harbor of Texas City in front of the wharves to exceed 3 miles an hour with the current, and 5 miles an hour against the current.

SEC. 109. *Vessels to have ship keepers on board.*—It shall be unlawful for any ship or vessel, steamer or barge, not to have a good and proper ship keeper at all times on board while in the harbor of Texas City.

SEC. 110. *Penalty.*—Any master or agent of any ship or vessel violating any or either of the three preceding sections shall, upon conviction thereof, be fined in any sum not less than $10 nor more than $100.

SEC. 111. *Bringing wreck into harbor.*—It shall be unlawful for any person to bring into the harbor of Texas City, or leave there, the wreck of any ship or vessel whereby such portion of the harbor may be occupied, and the entrance or departure of any craft thereby incommoded, under the penalty of $25 for every such offense, and the further penalty of $10 for every day, or part of said day, the wreck of said ship or vessel may continue there, after being duly notified of the same.

SEC. 112. *Loitering about cars.*—All persons loitering about or entering any grain cars or other cars on the wharf or railway tracks, or elevator tracks, in the city of Texas City, for any purpose whatsoever, unless employed or authorized by the person or company owning such property, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than $5 nor more than $25.

SEC. 113. *Carrying away grain, etc.*—It shall be unlawful for any person to take, receive, or carry away any corn, grain, produce, or other commodity from any grain car or other car, loaded or unloaded, standing upon any of the tracks of any railway or terminal company in the city of Texas City, nor shall it be lawful for any person or persons to sell, or dispose of in any manner, any such corn, grain, produce, or other commodities, in any quantities, so taken or received from such cars; and any person so taking, receiving, or carrying away any corn, grain, produce, or other commodity from such cars shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than $5 nor more than $25. But nothing in this section shall be construed as applying to employees of such railway or terminal company in the city of Texas City in the course of the performance of their duties.

SEC. 114. *Receiving grain unlawfully gotten from cars.*—Any person, firm, or corporation buying, receiving, or handling any grain, corn, or other produce from any person or persons who have acquired the same in the manner prohibited in the preceding section, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than twenty-five dollars, nor more than $50.00; and the receiving, handling, buying, or taking of said grain, corn, or other produce, by any person, firm, or corporation, without proof that the same was purchased from some person or corporation authorized and duly licensed to sell the same in the city of Texas City, shall be taken as prima facie evidence of the violation of this section.

SEC. 115. *Exception.*—Where any of the property mentioned in the three preceding sections is obtained in such manner as to come within the meaning of theft or the receiving of stolen property, or some other offense known to the penal laws of this State, or the ordinances of the city of Texas City, the rules

herein prescribed shall not be understood to conflict with or take any such case out of the operation of the law which defines and punishes such offense.

SEC. 116. *Smoking, etc., on vessels carrying inflammables.*—It shall be unlawful for any person to smoke any pipe, cigar or cigarette, or use fire in any form, except in stoves, lanterns, or furnaces on the deck of ship, vessel or barge where cotton bales, hay, sisal, jute, oil, gasoline, naphtha or kerosene or other combustible or explosives are placed or stored, or in any hold or compartment of any ship, vessel or barge where any of the articles or commodities named in this section are placed or being placed or stored within the harbor of the city of Texas City. Any person who shall violate any of the provisions of this section shall, upon conviction thereof, be punished by a fine in any sum not less than ten dollars nor more than fifty dollars.

SEC. 117. *Tanks of vessels carrying inflammable oils, etc.*—It shall be unlawful for any person, firm or corporation, or owner, hirer or custodian of any car, ship, vessel, or other conveyance, or any officer, agent or servant of such person, firm or corporation, owner or hirer, to bring into or carry in or through the corporate limits of the city of Texas City, either by or on land or water, any camphene, illuminating or fuel oil or burning fluid, kerosene, benzine, benzole, naphtha, gasoline, or any other product by distillation of coal, coal oil, petroleum, asphaltum or shale of peat, or any other inflammable oils or fluids of any kind or nature whatsoever, in quantities exceeding eighty gallons, unless same is securely contained in proper tanks or other vessels sufficiently strong and tight to prevent waste or leakage, or the escape of explosive gases in dangerous quantities, or to permit such article, fluid or substance to waste, leak, flow or escape from such tank, ship or vessel out upon any of the waters or land, or any premises within said limits. Any person who shall violate any of the provisions of this section shall be fined not less than five dollars nor more than one hundred dollars for each offense and each day upon which such violation may occur or continue shall be deemed a separate offense.

SEC. 118. *Funnels of vessels to be covered, etc.*—It shall be the duty of every owner, agent, master or captain of any ship, vessel, boat, tug or craft, propelled in whole or in part by steam, and on which any steam engine or steam boiler is, or is used, immediately upon the arrival of such vessel at any wharf, dock or pier within the port of Texas City, to cover all funnels and smokestacks securely with a first-class spark arrester or arresters, and any owner, agent, master or captain failing to comply with the provisions of this section, shall, upon conviction thereof, be fined in any sum not less than ten dollars nor more than fifty dollars.

SEC. 119. *Funnels of land boilers to be covered.*—It shall be the duty of every person owning or operating any steam engine, donkey engine or stationary engine, on or about the wharves, piers or levees of the city of Texas City, to cover the smokestacks of the boilers of each and every such steam engine, donkey engine or stationary engine securely with a first-class spark arrester, and any person owning or operating such steam engine, donkey engine, or stationary engine without so covering such smokestack shall, upon conviction thereof, be fined in any sum not less than ten dollars nor more than fifty dollars.

SEC. 120. *Vessel to couple fire hose.*—It shall be the duty of every owner, agent, master or captain of any ship, vessel, boat, tug or craft immediately upon its arrival in this port, to couple its fire hose and have the same ready for immediate use at all times while in this port, and sufficient steam shall be kept up night and day on the donkey engine, or on one of the main boilers to enable a full stream of water to be turned into any compartment of such ship, vessel, boat, tug or craft at any time; and in the event that such ship, vessel, boat, tug or craft shall not be provided with sufficient hose to reach each and every hatch of said ship, vessel, boat, tug or craft, then it shall be the duty of the owner, agent, master or captain thereof to immediately supply said ship, vessel, boat, tug or craft with sufficient hose so to do, and any failure to comply with either of the provisions of this section shall, upon conviction thereof, be fined in any sum not less than ten dollars nor more than fifty dollars.

SEC. 121. *Hatch combings to be protected.*—It shall be the duty of every agent, owner, master or captain of any ship or vessel while loading or discharging a ship or vessel in this port, to protect or have protected all hatch combings so that the cargo as loaded or unloaded shall not come in contact with the combings. Any failure to comply with this section shall, upon conviction thereof, be fined in any sum not less than $5.00 nor more than $25.00.

SEC. 122. *Vessels loading cotton not to paint.*—It shall not be lawful while any ship or vessel is engaged in loading cotton, or before her load is complete, in this port for any person to paint in or about any part of any hold of said vessel; and any person violating this provision shall, upon conviction thereof, be fined in any sum not less than five dollars nor more than twenty-five dollars.

SEC. 123. *Tarpauline over hatches.*—It shall be the duty of every master of any ship or vessel while in this port and while loading or unloading, to see that, as soon as work is stopped for the day, all hatches are put on and covered with tar pauline; any master violating this provision shall, upon conviction thereof, be fined in any sum not less than five dollars, nor more than twenty-five dollars.

SEC. 124. *Harbors: Unlawful to deposit gravel, etc.*—No person or persons shall within the corporate limits of the city of Texas City, cast or deposit, or suffer to be cast or deposited in the harbor of Texas City, any stone, gravel, earth, ashes, or other like substance, or any filth, logs, or other floating things.

SEC. 125. *Vessels not to be moored within cable length of wharf.*—It shall be unlawful for any person or persons to moor or cause to be moored any vessel in said harbor within a cable length of any wharf.

SEC. 126. *Unlawful to cast overboard from vessel in harbor, stone, etc.*—It shall be unlawful for any person or persons to throw or cause to be thrown overboard from any vessel in said harbor of Texas City any stone or other ballast, except water ballast, below high water mark; but the said stone or other ballast, except water ballast, shall be landed on the shore in the day time and no part thereof shall be dropped overboard in handling.

SEC. 127. *Unlawful to heat tar, etc., on board vessel in harbor.*—It shall be unlawful for any person or persons to heat or cause to be heated on board of any vessel in said harbor any pitch, tar, or other combustible material, but such heating shall be done on stages or boats provided therefor, and being removable in case of accident.

SEC. 128. *Penalty.*—Any person or persons violating any of the provisions of the four preceding sections shall, upon conviction thereof, be fined in any sum not less than five dollars nor more than one hundred dollars.

SEC. 129. *Vessels from ports infected with bubonic plague, etc., not to dock without permission of health officer.*—It shall be unlawful for any persons in charge of any vessel having sailed from or having touched a port infected with bubonic plague, or suspected of infection with bubonic plague, to dock, berth, or moor, or cause to be docked, berthed, or moored, any such vessel at or to any wharf, pier, or bulkhead in the harbor of Texas City, without first having obtained written permission from the city health officer of the city of Texas City so to do; and the person in charge of such vessel shall make written application to the said city health officer for such permission, which application shall set forth the name of the vessel, the name of the master thereof, and the name of the agent or consignee, the character of the cargo contained in said vessel, the name of the port from which said vessel sailed, the names of all the ports at which said

vessel may have touched or called since sailing, the time and place when and where said vessel was last fumigated, and the dock or pier in Texas City at which said vessel proposes to dock.

SEC. 130. *Unlawful to fasten vessel to wharf without rat guards.*—It shall be unlawful for any person in charge of any vessel to lay, fasten, or cause to be laid or fastened, any line, rope, or cable from said vessel to any wharf, pier, or bulkhead, or to any other vessel in the harbor of Texas City, unless such line, rope, or cable is fixed or equipped with what is known with a rat protector or rat guard, the same being not less than thirty-six inches in diameter and of a pattern and design approved by the city health officer.

SEC. 131. *Unlawful to lay gangplank from vessels except when taking on or discharging cargo.*—It shall be unlawful for any person in charge of any vessel to lay, place, or install, or cause to be laid, placed, or installed, any plank, step, gangplank, or gangway from such vessel to any other vessel, or to any wharf, pier, or bulkhead in the harbor of Texas City, save and except during such times as said vessel may be actually receiving or discharging cargo or passengers, and immediately upon such vessel's ceasing to receive or discharge cargo or passengers any and all planks, steps, gangplanks, or gangways leading from said vessels to any wharf, pier, or bulkhead shall be withdrawn and removed.

SEC. 132. *Watchmen must be provided in certain cases.*—Before any such vessel as described in section 129 hereof shall receive or discharge cargo or passengers between the hours of sunset and sunrise, the person in charge of such vessel shall so notify the city health officer of the city of Texas City, and said health officer shall thereupon place a competent guard or watchman upon said vessel, whose duty it shall be to see that all of the provisions of these ordinances are complied with, and said guard or watchman shall be paid for his services by the person in charge of said vessel.

SEC. 133. *Term "person in charge of vessel" defined.*—By the term "any person in charge of any vessel" as used in these ordinances is meant any person who as master or officer is in charge of and has authority over said vessel.

SEC. 134. *Vessels to be fended away from wharves, etc., except when.*—Whenever the deck of any vessel, berthed, moored, or docked at any wharf, pier, or bulkhead in the harbor of Texas City shall get to be less than seven feet above the surface of such wharf, pier, or bulkhead, then in that case said vessel shall be fended away from such wharf, pier, or bulkhead (except during stormy weather) a distance of not less than four feet by short floating spars fastened together, and in such case the rat guard or protector on each line, rope, or hawser of such vessel shall be placed not more than one foot distant from said vessel.

SEC. 135. *Vessels loading and unloading must be guarded.*—It shall be unlawful for any person in charge of any vessel in the harbor at Texas City to discharge or permit to be discharged from such vessel any freight, cargo, or passengers, without maintaining a strict guard on all gangways, planks, or steps leading from said vessel, to prevent the escape of rats from said vessel.

SEC. 136. *Crated cargo inspected before removal from ships.*—It shall be unlawful for any person to unload or remove or permit to be unloaded or removed any crated cargo from any vessel in the harbor at Texas City until said crated cargo shall have been carefully inspected to insure against rats being brought ashore in such cargo.

SEC. 137. *Penalty.*—Any person or persons violating any of the eight preceding sections shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by fine not less than ten dollars nor more than two hundred dollars.

SEC. 138. *Unlawful to carry lamps, etc., on pier, wharf, or warehouse; exceptions.*—Hereafter it shall be unlawful for any person to light, use, or carry any lantern, lamp, or light that burns kerosene or other oil, except watchmen's lantern of the type approved by the chief of the fire department of the city of Texas City, in or upon any wharf or pier, warehouse, car or cars, or any other place in the city of Texas City, or in the hold of any vessel lying at any wharf or pier in the city of Texas City, and having on board or loading any cotton.

SEC. 139. *Unlawful to drive automobile on wharf for loading cotton.*—It shall be unlawful for any person or persons to drive or operate an automobile, or any vehicle propelled by the use of oil, gasoline, or naphtha in or upon any wharf or pier in the city of Texas City, which wharf or pier is used for the handling or storing of cotton, or upon which wharf or pier cotton is stored or being handled; provided that men and equipment of the fire department of the city of Texas City, and the ambulance service, in the discharge of their respective duties, are exempt from the provisions of this section.

SEC. 140. *Penalty.*—Any person or persons violating any of the provisions of the two preceding sections shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by fine in any sum not less than one dollar nor more than two hundred dollars.

SEC. 141. *Matches: Unlawful to carry on wharf.*—It shall be unlawful for any person to carry on or about his person any matches on or into any wharf, pier, warehouse, compress yard, or other place within the corporate limits of the city of Texas City, where cotton is being handled or stored, unless the same be contained in a closed metal or other noncombustible case; provided that nothing in this section shall be so construed as to prevent the carrying of safety matches.

SEC. 142. *Unlawful to strike matches within fifteen feet of wharf, etc.*—It shall be unlawful for any person to strike any match of whatever kind on, in, or within fifteen feet of any wharf, pier, warehouse, compress, cars, yards, or other place within the corporate limits of the city, where cotton is being handled, stored, or shipped.

SEC. 143. *Penalty.*—Any person or persons violating any of the provisions of the two preceding sections shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined in any sum not less than one dollar nor more than twenty-five dollars.

SEC. 144. *Unlawful to smoke on wharf, etc.*—It shall be unlawful for any person to smoke any pipe, cigar, or cigarette, or to use fire in any form on any wharf, levee, or in any warehouse, depot, or cotton compress in, on, or near any freight cars, float, wagon, truck, or other vehicle loaded with cotton bales, or to smoke a pipe, cigar, or cigarettes, or use fire in any form within the docks or terminal yards of the Texas City Terminal Railway Company and the Texas City Terminal Company or their successors.

SEC. 145. *Penalty.*—The intention of the preceding section being to prohibit smoking at what is commonly called the "docks" and the warehouses used in connection with the "docks", and any person violating any of the provisions of said above section, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined in any sum not less than twenty-five dollars nor more than one hundred dollars.

PORT ADMINISTRATION.

1. State or municipal officials and bodies having jurisdiction over the port and over various phases of its administration.—Port control is vested in the city commission, consisting of the mayor and three commissioners. There is also a port commission of Texas City which acts in an advisory capacity.

2. **Organization of port administrative bodies.**—The city commission consists of a mayor and two commissioners elected by popular vote. The port commission of Texas City was organized in 1918 at the suggestion of the United States Shipping Board Emergency Fleet Corporation. It consists of a chairman, three commissioners, and a secretary. The three commissioners are appointed by the chairman for terms of office from year to year.

3. **Duties and powers of port officials and bodies.**—City ordinances cover the movement of vessels and conduct of persons on the wharves and on the vessels in port, particularly with respect to the protection of health and against fire hazards; also consistent with regulations of the United States concerning deposit of material and foreign matter in the waterways of the harbor or United States channel. The port commission of Texas City acts only in an advisory capacity.

PORT SURVEYORS.

There are no port surveyors located at the port. A list of those available at Galveston will be found on page 21.

PORT SERVICES AND CHARGES.

FIRE PROTECTION.

There is a high-pressure system, with storage tank serving all piers and warehouses. An 8-inch service main provides 95 hydrants with a water pressure of 60 pounds.

PILOTAGE.

With a few exceptions, as specified in the regulations on page , pilotage is compulsory for all vessels entering or clearing from a Texas port.

Pilots will be found between sunrise and sunset outside the bar at Galveston Harbor at anchor near the end of the jetties. During thick or foggy weather the pilot boat, when in open water, blows four blasts of the whistle; steamers approaching the bar and hearing the whistle reply with similar blasts. This is repeated at intervals until the pilot boat arrives alongside the steamer.

The rates for pilotage inward or outward at Texas City are as follows:

Net registered tonnage:	Rate per foot draft
Not over 500	$3.00
500 to 1,000, inclusive	3.50
1,000 to 1,500, inclusive	3.75
Over 1,500	4.00

DOCKAGE.

The following dockage charges are assessed at Texas City:

For each vessel over 1,000 gross registered tons on each trip, including in and out voyage	$50.00
For each vessel under 1,000 gross registered tons on each trip, including in and out voyage	25.00
For barges and small craft, per day	5.00

These charges apply on all steamers, sailing vessels, or other craft.

TOWAGE.

The following charges for towage are assessed at Texas City:

Between sea and dock, including docking of vessel, assisting steamer from Bolivar Roads to Texas City, or vice versa	$80.00
Schooner, from outside bar, per gross ton	.35
Schooner, from inside bar, per gross ton	.20
Barges light, Galveston to Texas City and vice versa	50.00
Barges, Texas City to Galveston	50.00

Shifting vessels, pier to pier, steamer	$55.00
Shifting vessels, pier to pier, barges	25.00
Holding steamer off wharf while rat guards are placed	20.00
Holding steamer off wharf when lines are let go	40.00

WHARFAGE.

For information relative to wharfage charges at Texas City see railroads.

LIGHTERAGE.

No lighters or car floats are operated in the harbor at Texas City.

STORAGE.

This subject is covered under railroads and storage warehouses.

LOADING AND DISCHARGING VESSELS.

Freight-handling machinery.—The Texas City Terminal Railway Co. owns the piers at the port where all freight, in and out bound, is handled. Serving piers B, C, D, and E is a 6-ton movable bridge crane electrically operated with a capacity of 150 tons per hour. There are also two traveling steam locomotive cranes of 10 tons capacity available at any point. Coal and sulphur are handled by these cranes.

Cotton is handled by means of an overhead monorail system, carrying one bale of cotton every 10 feet. This electric monorail system carries cotton from compresses 2 and 3 in compress shed No. 1, west of shed D to Piers A and O, and extends through those sheds.

Methods employed in handling inward and outward cargo.—The methods employed in handling inward and outward cargo at all Gulf ports are practically the same. A description of these methods will be found on page 28.

Speed of loading and unloading.—On inward cargo the average quantity handled under normal conditions is about 500 tons per day, and on outward cargo about 1,000 tons per day. As many hatches as are equipped with hoisting winches and derricks can be worked at one time. The average number of gangs per hatch is two, according to the number of hoisting winches with which hatch is equipped. The average number of men per gang is 10.

Cost of loading and unloading.—The cost of loading and unloading cargo is shown in the tariff of stevedoring rates at Galveston, Texas City, and Houston, Tex., printed on page 32.

Names of stevedoring contractors of the port.

Name.	Address.
Texas City Steamship Co	Texas City, Tex.
Reitan Stevedoring Co	Do.
Gulf Ports Stevedore Co	Galveston, Tex.
Columbia Transport Co	Do.
Suderman & Young	Do.

Transit cargo.—Information relative to the charges and practices affecting the movement of cargo through the port is given in the part of this report devoted to railroads. Discharging of cargo is paid by the vessel; all other charges, such as stowing, reshipping, etc., of cargo are borne by the consignee. All expenses, including reembarking and storage, incurred by cargo landed in error is paid by the party at fault. Undelivered or unclaimed freight is held on the docks by the Texas City Terminal Railway Co. It will be held for 60 days, and then disposed of according to the laws of Texas, usually at auction.

Checking and tallying.—The cargo is checked at the time of loading and unloading by steamship clerks and United States customs inspectors. Railroad freight is checked by the railroad clerks at time of loading and unloading car. On inward cargo a receipt is given by the railroad on delivery of freight. On outward cargo a receipt is given by the steamship's representative to the railroad.

LABOR.

The following holidays are observed: New Year's Day (January 1); Washington's Birthday (February 22); Sam Houston Memorial Day (March 2); Texas Independence Day (April 21); Independence Day (July 4); Labor Day (first Monday in September); Armistice Day (November 11); Thanksgiving Day (fixed by presidential proclamation and generally the last Thursday in November); and Christmas Day (December 25).

The labor supply is entirely union controlled. Nonunion labor is used only when the demand is temporarily greater than the supply; but all such labor is furnished by the International Longshoremen's Association. There is usually an ample supply of labor.

See page 30 for wage scales and working rules of longshoremen.

MISCELLANEOUS CHARGES.

The miscellaneous charges given on page 38 for Galveston also apply at Texas City, so far as applicable to this port.

FUEL AND SUPPLIES.

ELECTRIC CURRENT.

Electric current is furnished by the terminal power plant owned by the Texas City Terminal Railway Co. The plant, located about 400 feet west of the slip between sheds A and B, furnishes electricity for both power and lighting in the city and at the wharves. It also serves the tank farms for loading and unloading oil from steamers and cars. Alternating or direct current of 110, 220, 440, and 2,300 volts, 3-phase, 60-cycle frequency is furnished. The normal power available is 870 kilowatts with a surplus of 536.

Information regarding electric current at the various wharves and piers of the port is given in the table showing data relative to piers, wharves, docks, etc.

WATER SUPPLY.

There is an unlimited supply of fresh water for boiler and drinking purposes supplied by artesian wells. Vessels are supplied through pipe lines with hose connections on the piers and wharves. The rate of delivery is 8,400 gallons per hour. The charge is $3 for the first 100 cubic feet and $1 for each additional 100 cubic feet. The minimum charge for each boat is $3.

Information regarding water supply at the various wharves and piers of the port is given in the table showing data relative to piers, wharves, docks, etc.

BALLAST.

There is no demand for ballast at Texas City. The Texas City Terminal Railway Co. handles any kind of inbound ballast from foreign countries, the equipment consisting of one overhead traveling electric crane of 50 tons capacity per hour and two traveling locomotive cranes. The cost from steamers to cars is $1 per ton of 2,240 pounds.

PROVISIONS.

The city is well supplied with provisions of all kinds in any quantity required by vessels.

OIL BUNKERING.

Texas City is well equipped for fuel oil bunkering with an oil wharf, pipe lines, and pumping stations for discharging tanker boats, and for loading and bunkering purposes. There are two companies furnishing

fuel oil at the port, the Pierce Oil Corporation and Swiftsure Petroleum Co.

The Pierce Oil Corporation, with an oil wharf located at the south end of Texas City above Pier E, has a storage capacity of 450,000 barrels. Bunkering is done at the rate of 3,000 barrels per hour.

The Swiftsure Petroleum Co. has pipe lines on Pier B. The total storage capacity of the company is 330,000 barrels. Bunkering is done at the rate of 2,000 barrels per hour.

The Humble Oil & Refining Co. does not do a commercial bunkering business, but bunkers its own boats.

The location of pipe-line facilities at the wharves for petroleum oil loading and discharging, and for fuel oil bunkering are shown on the port facilities map of the port.

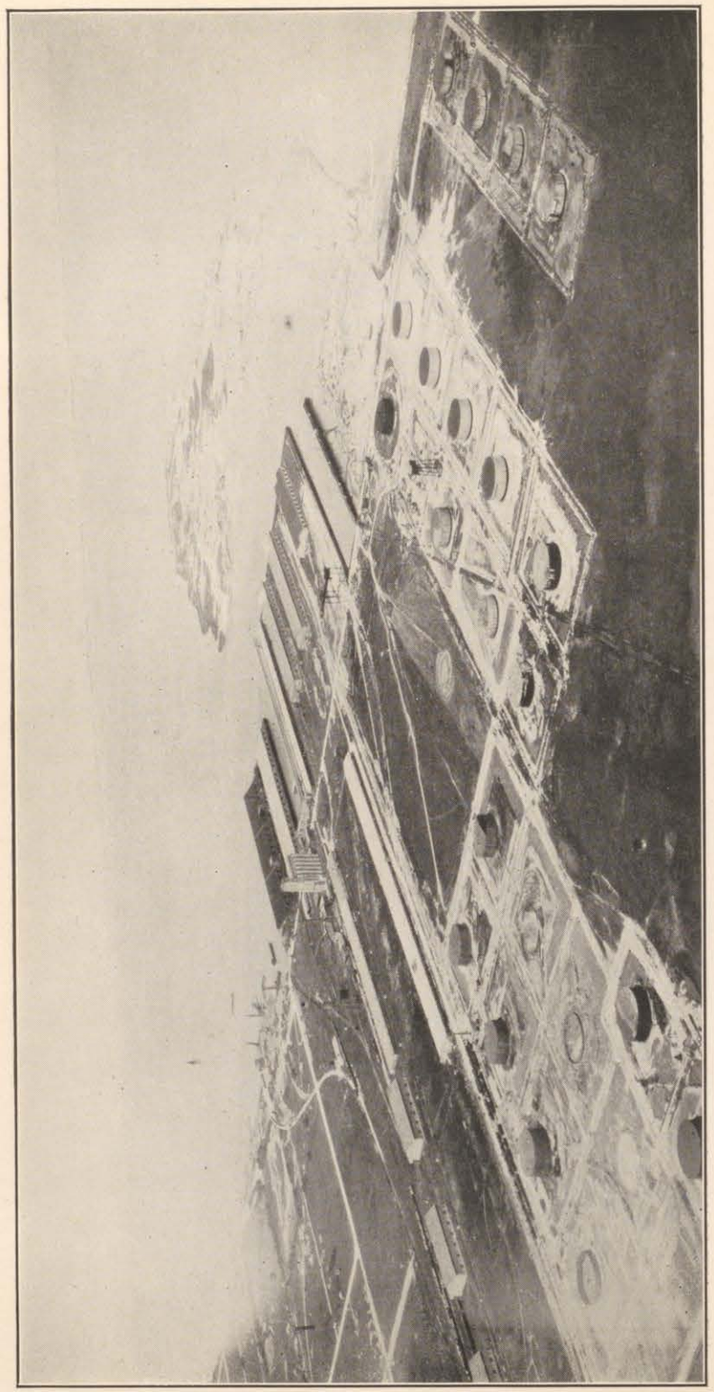
The accompanying table shows additional information regarding each of the above-mentioned oil facilities:

Fuel oil facilities, Texas City, Tex.

	Pierce Oil Corporation.	Swiftsure Petroleum Co.	Humble Oil & Refining Co.
Storage facilities—Tanks:			
Location	Tank farm, Texas City	Tank farm, Texas City	Tank farm, Texas City.
Number of tanks	9	6	1.
Type of construction	Steel above ground	Steel above ground	Steel above ground.
Total storage capacity	450,000 barrels	330,000 barrels	64,000 barrels.
Intake pipe lines (number and size).	2, 6 inch; 2, 8 inch	1, 10 inch; 2, 8 inch	1, 10 inch.
Supply:			
Source of supply	Texas and Mexico	Texas and Mexico	Texas and Mexico.
How received	Bulk tank steamers and tank cars.	Bulk tank steamers and tank cars.	Bulk tank steamers and pipe line.
Grades	Domestic fuel and Mexican crude 12° to 17° (Be.).	Domestic fuel and Mexican crude 12° to 17° (Be.)	Domestic fuel and Mexican crude 12° to 17° (Be.).
Quantity kept in stock—			
Maximum	220,000 barrels	165,000 barrels	50,000 barrels.
Normal	110,000 barrels	110,000 barrels	20,000 barrels.
Bunkering facilities:			
Pipe-line piers, wharves, loading heads, or dolphins.	Pipe line pier	Pipe line on Pier B	See remarks.
Reference number on map.	1	2	
Location	South end of Texas City	South end of Texas City	
Type and construction.	Open pile pier	Plie and bulkhead wharf	
Actual berthing space for bunkering.	950 feet	1,200 feet	
Depth of water, m. l. w.	30 feet	30 feet	
Bunkering capacity (barrels per hour).	3,000	2,000	
Discharge pipe lines (number).	2 and 3	1 and 1	
Size	6 and 8 inch	8 and 10 inch	
Hose (size)	do	do	
Total length	Ample for any bunkering.	Ample for any bunkering.	
Connections (size)	6 and 8 inch standard flanges.	8 and 10 inch standard flanges.	
Number of holes in flanges.	Standard	Standard	
Barges	None	None	
Remarks			The Humble Oil and Refining Co. does not do a commercial bunkering business, but only bunkers its own boats.

COAL BUNKERING.

Bunker coal is furnished by Davison & Co., of Galveston, Tex., from a coal wharf located 200 feet west of the main slip. There is an open storage area with a storage capacity of 600 tons. The equipment consists of a locomotive crane with bucket, loading or discharging at the rate of 50 tons per hour, also a 6-ton bridge crane with a capacity of 150 tons per hour.



AEROPLANE VIEW OF THE PORT OF TEXAS CITY, TEX.
Made expressly for this report by the U. S. Army Air Service.

PORT AND HARBOR FACILITIES.

PIERS, WHARVES AND DOCKS.

There are four main pier structures, one of which is regarded as four separate units and another as two separate units. Three of the main pier structures have a depth of 30 feet at mean low water, and one has a depth of 15 feet. The piers are of creosoted pile contruction, with sheet pile bulkheading and sand and shell fill. The slips are fairly wide and will, if necessary, admit three ships abreast.

The terminal facilities are owned by the Texas City Terminal Railway Co., and are used for handling miscellaneous cargo. There is rail connection with all freight piers. Two of the piers have fireproof sheds. The oil wharf owned by the pierce Oil Corporation has a depth alongside of 30 feet at mean low water with an available berthing space of 950 feet.

There is a passenger pier used as a pleasure resort and berthage for small bay craft.

The water terminals are served by improved highways, some of which are maintained by the city and county and the others by the Texas City Terminal Railway Co. These connect with the city streets and the county highway to Galveston.

The following table shows detailed information regarding each of the above-mentioned structures:

Piers, quays, wharves, moles, and docks (except dry docks).

Reference number on map	1	2			3		
Name	Oil dock.	Piers B, C, D, and E.			Piers A and O.		
Exact location in harbor	South end of Texas City	South end of Texas City			South end of Texas City.		
Owned by	Pierce Oil Corporation	Texas City Terminal Railway Co.			Texas City Terminal Railway Co.		
Operated by	do	do			Do.		
Purpose for which used	Oil handling	Miscellaneous cargo handling			Miscellaneous cargo handling.		
Type of construction	Creosoted piles and timber	Creosoted piles and timber deck with sheet pile bulkheading and sand and shell fill.			Creosoted piles and timber deck with sheet pile bulkheading and sand and shell fill.		
		Lower side.	Upper side.	Face.	Lower side.	Upper side.	Face.
Description:		*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Dimensions	950 feet, upper side	1,200	1,200	1,000	900	900	500
Width of apron	34 by 600 feet; 17 by 350 feet						
Berthing space available	950 feet, upper side	1,200	1,200	1,000	900	900	500
Depth of water at m. l. w.	30 feet, upper side	30	30	30	30	30	30
Deck above m. l. w.	12 feet, upper side	12	12	12	12	12	12
Capacity per square foot	750 pounds	500 pounds			500 pounds.		
Lighted or unlighted	Lighted	Lighted			Lighted.		
		B.	C.	D.	E.	A.	O.
Transit sheds	None						
Length and width		1,170 by 75	750 by 100	750 by 100	523 by 120	880 by 163	880 by 163
Total floor area (sq. ft.)		87,750	75,000	75,000	62,760	143,440	143,440
Height between floors		1 floor	1 floor	1 floor	1 floor	1 floor	1 floor.
Allowable floor load		500 lbs. per sq. ft.	Solid ground.	Solid ground.	Solid ground.	Solid ground	Solid ground.
Lighted or unlighted		Lighted	Lighted	Lighted	Lighted	Lighted	Lighted.
Handling facilities	None	One electrically operated movable 6-ton bridge crane with a capacity of 150 tons per hour. Two traveling steam locomotive cranes of 10 tons capacity are available at any point needed.				Overhead electric monorail system carrying 1 bale of cotton every 10 feet. This system carries cotton from compresses 2 and 3 in compress shed No. 1, west of shed D, to piers A and O and extends through those sheds. Two 10-ton locomotive cranes are available at any point.	
Railway facilities: Name of railway connecting.	None	Texas City Terminal Railway Co.				Texas City Terminal Railway Co.	

	Location.	Number.	Length.	Surface or depressed.	Location.	Number.	Length.	Surface or depressed.
Tracks—			*Feet.*				*Feet.*	
On open wharf		None.						
On string piece or apron.		None.			South side of A.	2	1,800	Surface.
					North side of O.	2	1,800	Surface.
Inside transit shed	South side of B.	1	1,200	Surface				
	South side of C.	3						
	North side of C.	4	7,200	Depressed.				
	South side of E.	1	3,600	Depressed.				
Rear of transit shed	North side of E.	2						
	North side of D.	2	6,400	Depressed.	North side of A.	3	2,700	Depressed.
	South side of D.	4			South side of O.	1	900	Elevated.
Water supply	Water connections available				Water connections available.			

Piers, quays, wharves, moles, and docks (except dry docks)—Continued.

Reference number on map	4		
Name	Passenger pier.		
Exact location in harbor	Between foot of 8th Ave. North and west end of United States pile dike.		
Owned by	Texas City Passenger Pier Co.		
Operated by	Do.		
Purpose for which used	Pleasure resort and berthage for small bay craft.		
Type of construction	Creosoted piles with timber deck, open.		
	Lower side.	Upper side.	End.
Description:			
Dimensions			50 by 133 feet.
Width of apron	None.		150 feet.
Berthing space available			15 feet.
Depth of water at M. L. W		Earth embankment.	10 feet.
Deck above M. L. W			
Capacity per square foot	Unknown.		
Lighted or unlighted	Lighted.		
Transit sheds	None (dancing shed).		
Mechanical handling facilities	None.		
Railway facilities	None.		
Water supply	1½-inch pipe.		
Fire protection	Fire extinguishers.		
Electric current	Lighting only.		

GRAIN ELEVATORS.

There is one grain elevator at Texas City, owned by the Texas City Terminal Railway Co. and operated by the Export Elevator Co. This elevator, located about 300 feet west of the slip between sheds A and B, is of modern reinforced concrete construction. It is electrically operated and has a storage capacity of 500,000 bushels. All the bins have hopper bottoms and no shoveling is required. The elevator has direct rail connections and receives and unloads cars at the rate of 60 cars in 10 hours. The equipment consists of one modern dryer with a capacity of 1,500 bushels per hour, and 2 cleaners of 3,000 bushels capacity per hour, including one monitor oat clipper cleaner. The delivery capacity to ship, discharging through shipping bin to vessels, is 12,000 bushels per hour. An electrically operated delivery leg moves along the apron of the pier from hatch to hatch.

STORAGE WAREHOUSES.

In addition to 6 large transit sheds located on 2 of the piers, there are 5 warehouses on the Terminal Co.'s property back of the piers; these have a total floor area of 202,379 square feet. The land warehouses provide for the accumulation of cargo, which, as soon as one ship enters, can be brought by rail to the shipside without delay. The land and pier warehouses together provide a total storage capacity at the terminal of 734,379 square feet.

The warehouses are adequately equipped with mechanical appliances for the loading, unloading and storing of freight. Pier "C"

warehouse and the 5 land warehouses are all equipped with 2-ton overhead electric cranes for piling, storing and handling freight. The crane in Pier "C" warehouse is also supplied with a magnet for handling iron, steel, and wire articles.

In addition to the storage facilities noted above there is a cold storage plant owned and operated by the Artesian Ice & Cold Storage Co. This plant, located five-eighth mile back of the water front has a storage capacity for 15 carloads.

Storage warehouses.

	Warehouse No. 1.	Warehouse No. 2.	Warehouse No. 3.	Warehouse No. 4.
Name of owner	Texas City Terminal Ry. Co.	Texas City Terminal Ry. Co.	Texas City Terminal Ry. Co.	Texas City Terminal Ry. Co.
Name and address of operator.	Same	Same	Same	Same.
Exact location	Texas City, Tex., in rear of Texas City Terminal Ry.Co.'s wharves.	Texas City, Tex., in rear of Texas City Terminal Ry.Co.'s wharves.	Texas City, Tex., in rear of Texas City Terminal Ry.Co.'s wharves.	Texas City, Tex., in rear of Texas City Terminal Ry.Co.'s wharves.
Kind of storage (dry, cold, etc.).	Dry	Dry	Dry	Dry.
Commodities stored.	Cotton, etc	Cotton, sisal, etc	Cotton, sisal, etc	Cotton, sisal, etc.
Cold-storage facilities.	None	None	None	None.
Construction of warehouse:				
Type of construction.	Open shed	Fireproof, steel and reinforced concrete.	Fireproof, steel and reinforced concrete.	Fireproof, steel and reinforced concrete.
Number of stories.	One	One	One	One.
Height between floors.	15 feet to eaves	15 feet to eaves	15 feet to eaves	15 feet to eaves.
Total floor area.	75,000 square feet	25,000 square feet	25,000 square feet	25,000 square feet.
Total capacity	1,125,000 cubic feet	375,000 cubic feet	375,000 cubic feet	375,000 cubic feet.
Allowable floor load (per square foot).	500 pounds	500 pounds	500 pounds	500 pounds.
Transfer between ship and warehouse.	Railroad cars	Railroad cars	Railroad cars	Railroad cars.
Equipment in warehouse (quantity, kind, capacity, and operation).	Electric overhead traveling crane, 2 tons capacity.	Electric overhead traveling crane, 2 tons capacity.	Electric overhead traveling crane, 2 tons capacity.	Electric overhead traveling crane, 2 tons capacity.

	Warehouse No. 5.	Cotton compress and shed No. 1.	Artesian Ice & Cold Storage Co.
Name of owner	Texas City Terminal Ry. Co.	Texas City Terminal Ry. Co.	Artesian Ice & Cold Storage Co.
Name and address of operator.	Same	Same	Same.
Exact location	Texas City, Tex., in rear of Texas City Terminal Railway Co's wharves.	Texas City, Tex., in rear of Texas City Terminal Railway Co's wharves.	Texas City, Tex., five-eighth mile back of water front.
Kind of storage (dry, cold, etc.).	Dry	Dry	Cold.
Commodities stored	Cotton, sisal, etc	Cotton	Various commodities.
Cold-storage facilities	None	None	Cold storage for 15 cars of commodities.
Construction of Warehouse:			
Type of construction	Fireproof, steel and reinforced concrete.	Wood, open shed	Brick.
Number of stories	1	1	1.
Height between floors.	15 feet	15 feet	
Total floor area	25,000 (square feet)	134,400 (square feet)	
Total capacity	375,000 (cubic feet)	2,016,000 (cubic feet).	
Allowable floor load (per square feet).	500 pounds	500 pounds	300 pounds.

Storage warehouses—Continued.

	Warehouse No. 5.	Cotton compress and shed No. 1.	Artesian Ice & Cold Storage Co.
Transfer between ship and warehouse:			
Method	Railroad cars	Telpher system	Railroad cars.
Mechanical handling facilities (type and operation.)		Electrically operated telpher monorail system connecting with transit sheds O and A to ships side and through compress shed.	
Equipment in warehouse (quantity, kind, capacity, and operation).	Electric overhead traveling crane, 2 tons capacity.	1 bale suspended every 10 feet capacity 350 bales per hour. Three high density compresses in shed.	None.
Remarks			

BULK FREIGHT STORAGE.

Located 40 feet from ship side on south dock in south slip are two uncovered bins for the storage of sulphur. These bins, owned by the Texas City Terminal Railway Co., are 42 by 500 feet and 30 by 400 feet, with a storage capacity of 20,000 tons. Serving these bins are two locomotive steam operated cranes and one electric overhead traveling crane.

DRY DOCKS AND MARINE RAILWAYS.

There are no dry docking facilities at Texas City. For information relative to these facilities see page 64.

MARINE REPAIR PLANTS.

The Texas City Terminal Railway Co. has a railroad machine shop located in shed No. 1, 500 feet west of main slip on the water front docks. This plant is equipped for making repairs to wood and steel vessels, engines and dynamos, but no boiler work is undertaken. It offers vessels service for immediate small and minor repair jobs. A general supply of material is carried in stock. The largest shafts produced are 14 inches.

FLOATING EQUIPMENT.

The Texas City Terminal Railway Co. maintains a 21-foot open gasoline launch of 40 horsepower for surveying, transportation, etc., in the harbor. Other than this there is no available equipment at this port.

WRECKING AND SALVAGE FACILITIES.

There are no facilities for wrecking and salvage at Texas City.

COMMUNICATIONS.

RAILROADS.

The port of Texas City is served by five railroads which reach it through the Texas City Terminal Railway, the only line actually running to the wharves or piers. The five railroads are the Galveston, Houston & Henderson Railroad, the Gulf, Colorado & Santa Fe Railway, the International-Great Northern Railroad, the Missouri-Kansas-Texas Railroad Co. of Texas and Southern Pacific Company, Texas Lines. These five lines are described in the Galveston section of this report.

The Texas City Terminal Railway operates about 6 miles of main line connecting the line haul carriers with the pier or wharves and about 31 miles of yard track and sidings.

FACILITIES FOR INTERCHANGE BETWEEN RAIL AND WATER.

All the piers of wharves on the water front at which vessels regularly berth are served by the Texas City Terminal Railway Co.

SWITCHING.

The Texas City Terminal Railway Co. assesses $6.30 per car for switching between interchange point with any connecting line and any point on its railway, including all industries on or reached by its rails.

Cars placed for loading or unloading and subsequently switched to another point on order of shipper, consignee, owners, or connecting line are charged for the extra service at the rate of $1.80 per car for each additional movement.

For switching cars to and from track scales for weighing, including weighing thereon, at request of owners, shippers, consignees or connecting lines, a charge of $1.80 per car, in addition to all other charges, is assessed.

The charge for switching cotton and cotton linters from concentration warehouses to compresses for compression and reshipment by rail is $2.25 per car, no allowance being made for loading or unloading. The same charge applies for switching in the reverse direction.

Staves for export or coastwise movement are switched between docks and stave yards or warehouses at the rate of $2.25 per car.

DEMURRAGE.

See page —.

WHARFAGE.

Wharfage charges applying at wharves in Texas City are set forth in Texas lines tariff No. 21–E, Agent A. C. Fonda's I. C. C. No. 134. These charges are in general the same as apply at Galveston Wharf Co. in Galveston, and rates on representative commodities will be found by reference to page 74.

The following rules apply at Texas City only:

Goods transshipped within five days without removal from the wharf are subject to wharfage charge on inbound movement only, except cotton, which is subject to outbound charge only.

A vessel berthed at any pier, dock, or warehouse, or made fast to a vessel so berthed, receiving oil from a tanker or other floating craft, is assessed one-third cent per barrel of 42 gallons.

LOADING AND UNLOADING CHARGES.

Charges for loading freight on or into cars and for unloading from cars are in general the same at all the following-named Texas ports: Beaumont, Galveston, Houston, Orange, and Texas City. They are contained in Texas lines tariff No. 21–E, Agent A. C. Fonda's I. C. C. No. 134. For details see page 78.

STORAGE.

All commodities in carloads, except as shown below, are assessed 25 cents per net ton for each 30 days or fraction thereof.

Compressed cotton or cotton linters are assessed, for the first 30 days or fraction, 35 cents per bale, including cost of loading to and unloading from cars, and for each succeeding 30 days or fraction, 30 cents per bale.

Ixtle or sisal is assessed, for the first 30 days or fraction, 2 cents per bale, including cost of handling from point of delivery by ship into storage, and for each succeeding 30 days or fraction, 10 cents per bale.

On imported raw sugar in transit to interior destinations detained on wharves there is no charge for the first 30 days or fraction; for each succeeding 30 days or fraction there is a charge of 25 cents per net ton.

These charges are contained in Texas City Terminal Railway Co. tariff No. 8–A, I. C. C. No. 2.

ABSORPTIONS.

Absorptions by rail carriers at Texas City on import, export, and coastwise traffic are in general similar to those at Galveston, which are shown on page 86. On intrastate carload traffic and on interstate competitive carload traffic the rail carrier having the line haul absorbs the switching charge of connecting line originating or delivering the freight. The limit of $3.15 per car absorbed at Galveston on switching import, export, and coastwise traffic does not apply at Texas City, where the full charge of $6.30 per car is absorbed.

TRANSIT PRIVILEGES.

Rules and regulations governing the diversion and reconsignment of freight and compression and concentration of cotton and cotton linters applying on traffic to and from Texas City are the same as those set forth under this heading in the Galveston section of this report.

MISCELLANEOUS CHARGES AND ALLOWANCES.

These charges and allowances are generally the same as those applying at Galveston, which are shown under this heading in that section of this report.

A few charges and allowances apply at Texas City which differ from those applying at Galveston, some of which follow:

Explosives and inflammables are not handled except by special agreement.

A trackage charge of 50 cents per car is assessed on grain handled through the elevator at Texas City.

Allowance made to owners, buyers, sellers, or agents for loading cotton or cotton linters at Texas City, standard bales, 4 cents each; round bales, 2½ cents each. No allowance is made on cotton compressed at Texas City.

CRANE CHARGES.

Handling sulphur out of open cars into bins	20 cents per net ton.
Handling sulphur from bins to ship	20 cents per net ton.
Handling sulphur from open cars to ship	30 cents per net ton.
Handling other commodities	$15 per hour.

A minimum of $30 is observed in assessing charges for use of the crane.

Steamship lines, Texas City, Tex.

Name of line.	(a) Owner. (b) Operator.	Name and address of agent.	Nationality.	Between what points operated.	Location of terminals.	Schedule.	Class of service.
Lykes Line	(a) U. S. Shipping Board. (b) Lykes Bros.	Lykes Bros., Galveston, Tex.	American	Bremen, Hamburg, and Rotterdam.	Pier O	As required	General freight.
Sgitcovich Lines	(a) U. S. Shipping Board. (b) S. Sgitcovich & Co.	Sgitcovich Steamship Co., Galveston, Tex.	do	Liverpool, Manchester, London, Havre, Antwerp and Ghent.	Pier A	do	do.
Shore Line	(a) U. S. Shipping Board. (b) Tampa Inter-Ocean Steamship Co.	Tampa Inter-Ocean Steamship Co., Galveston, Tex.	do	Barcelona and Japan	Pier B	do	do.
Trosdal, Plant & Lafonta.	(a) U. S. Shipping Board. (b) Trosdal, Plant & Lafonta.	Trosdal, Plant & Lafonta, Galveston, Tex.	do	Genoa and Naples	do	do	do.
Lone Star Steamship Co.	(a) Lone Star Steamship Co. (b) Do.	Lone Star Steamship Co., Galveston, Tex.	do	Cuban ports	Pier O	Weekly	do.
Pierce Navigation Co.	(a) Pierce Navigation Co. (b) Do.	Wm. P. Tarpy, Texas City, Tex.	do	Tampico	Water front, Texas City.	do	do.
Steele Steamship Line	(a) Steele Steamship Line. (b) J. H. W. Steele.	J. H. W. Steele, Galveston, Tex.	Danish	Mexico	Pier B	do	General cargo.

STEAMSHIP RATES.

Steamship rates to and from Gulf ports on important commodities are shown on page 98.

TELEPHONE AND TELEGRAPH LINES.

The telephone system is operated by the Southwestern Bell Telephone Co. Telegraph communication is afforded by the Western Union Telegraph Co.

THE FREIGHT RATE SITUATION.

The freight rate situation covering the Galveston Bay ports is discussed in the report on Galveston, beginning on page 101.

COMMERCE OF TEXAS CITY, TEX.

Tables showing in detail the commerce of the port of Texas City for the last eleven years, which accompany this report, show the rapid increase in the business of the port. The commerce of the port increased from 464,237 tons in 1912 to 501,842 tons in 1919, 2,363,735 tons in 1920 and 3,268,201 tons in 1921. During the 10-year period from 1912–1921 the imports constituted 13.9 per cent, the exports 24.5 per cent, and the domestic receipts and shipments 61.6 per cent of the business of the port.

The average annual commerce during this 10-year period is shown by a graph which segregates the commerce by important commodities.

Imports.—The imports of petroleum products at the port of Texas City for the 10-year period from 1912 to 1921 constituted 91.6 per cent of the import business, the average annual movement during the period mentioned being 114,196 tons. In 1914 the total imports of petroleum amounted to 31,563 tons as compared with 156,412 tons in 1917, 171,451 tons in 1920, and 425,785 tons in 1921.

The next important commodities in volume among the imports were sisal grass and ixtle, with an average annual movement of 2,705 tons, or 2.2 per cent of the total imports.

Exports.—During the period 1912–1921 the average annual movement of exports through the port amounted to 222,044 tons. The export tonnage gradually declined from 244,884 tons in 1912 to 37,912 tons in 1917, but increased steadily during the next five years to 732,974 tons in 1921.

Cotton was the most important commodity in point of tonnage exported from Texas City during the 10-year period, the average annual amount shipped being 70,966 tons, or 32 per cent of the total exports. There has been a marked decline in cotton exported since 1912, when it amounted to 192,634 tons, as compared with 125,393 tons in 1915, 17,102 tons in 1917, and 3,300 tons in 1921.

This total includes 53,797 tons of wheat exported during the period 1918–1921.

Petroleum products were next in volume with an average movement of 22,727 tons, or 10.3 per cent of the total exports.

Sulphur, another important commodity in the export business of the port, had an average annual movement during the period 1912–1921 of 21,626 tons, or 9.6 per cent of the total exports. This commodity was exported only during the period 1918–1921. Lumber

and logs were next, with an average movement of 13,102 tons, or 5.9 per cent of the total.

Domestic commerce.—Of the domestic receipts and shipments taken as a whole during the period 1912–1921, petroleum products constituted 80.3 per cent of the total receipts and shipments, the average annual movement during the period mentioned being 439,942 tons.

Sulphur ranked second in point of tonnage, the average annual movement being 25,710 tons or 5 per cent of the total. Other important commodities in the domestic business of the port were iron and steel and related manufactures; also coal, sand, and shell.

Water-borne commerce at the port of Texas City, Tex., 1912–1922.

[Quantities expressed in short tons.]

FOREIGN.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
IMPORTS.											
Vegetable food products, oil seeds, expressed oils, and beverages:											
Coffee	832	1,949									
Rice	91	27									
Sugar	55	865									108,533
Total	978	2,841									108,533
Textiles:											
Palm-leaf hats	323	400									
Sisal and ixtle	1,319	865					9,408	7,218	7,331	913	
Total	1,642	1,265					9,408	7,218	7,331	913	
Wood and paper:											
Barrels								112			135
Cooperage							33				
Nonmetallic minerals:											
Asphaltum						2,256	3,966	3,340			
Ballast (sand)								2,888		7,235	
Petroleum products			31,563	4,800	61,609	156,115	155,412	135,229	171,451	425,785	236,140
Total			31,563	4,800	61,609	158,371	159,378	141,457	171,451	433,020	236,140
Ores, metals and manufactures of, except machinery and vehicles:											
Ore					14,147				1,279		
Steel barrels								19			
Steel drums							43				
Zinc							2,444	2,048			
Total					14,147		2,487	2,067	1,279		
Chemicals:											
Glycerine	53	53									18
Soda, caustic										57	
Unclassified: Miscellaneous	68	4,621	20,536	2,842	2,462	2,150					
Total foreign imports	2,741	8,780	52,099	7,642	78,218	160,521	171,306	150,854	180,061	433,990	344,826
EXPORTS.											
Animals and animal products, except wool and hair:											
Cattle								75		297	
Fish							215				
Grease							235	378			
Hides, skins, etc.									24		
Hogs								25			
Lard and lard compounds						400		100			31
Packing-house products	288	925				256					
Tallow									36		
Wax									246		
Total	288	925				656	450	578	306	297	31
Vegetable food products, oil seeds, expressed oils, and beverages:											
Beverages								100			
Beans								927	1,225		
Corn											47,520
Cottonseed products	113	1,119						176		60	
Feed										231	
Flour							49,150	6,459	2,506	25	3
Grains and products	20,269	30,787	3,818	7,010				726	720	1,680	3,840
Hay				17,144						234	
Onions								590			
Rice							33,664	18,801	417	220	
Sugar								2,598			
Wheat							10,350	28,589	77,301	421,736	105,006
All other							6	121		57	32
Total	20,382	31,906	3,818	24,154			93,170	59,087	82,169	457,943	156,401
Other vegetable products, except fibers and wood:											
Broomcorn							99				
Rubber hose											9
Rosin								717			
Textiles:											
Cotton	192,634	120,460	84,608	125,393	78,510	17,102	4,128	35,721	47,812	3,300	25
Sisal grass and ixtle							24		2,184		
Bags							335				
Total	192,634	120,460	84,608	125,393	78,510	17,102	4,487	35,721	49,996	3,300	25

Water-borne commerce at the port of Texas City, Tex., 1912–1922—Continued.

FOREIGN—Continued.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
EXPORTS—continued.											
Wood and paper:											
Box shooks								644	127	316	
Cooperage	171	63									
Lumber, logs, etc	29,431	43,428		5,402	5,601	1,625	2,017	18,086	10,231	15,206	512
Staves and heading							361		793		460
All other							6			167	64
Total	29,602	43,491		5,402	5,601	1,625	2,384	18,730	11,151	15,689	1,036
Nonmetallic minerals:											
Brick, clay, and earth							114	138	614	639	494
Cement								141		97	7
Petroleum products	416			477	4,381	14,544	1,360	1,478	56,806	147,814	277,751
Sulphur								32,459	79,279	104,526	111,909
Wax, oils, and grease		1,408					1,251	2,525		31	1,402
All other								129		87	159
Total	416	1,408		477	4,381	14,544	2,725	36,870	136,699	253,194	391,722
Ores, metals, and manufactures of, except machinery and vehicles:											
Iron and steel, and manufactures of	1,033	4,008		461	29,860		764	1,363	257	854	77
Lead, pigs								234		10	19
Miscellaneous metals				5,307							
Stoves								6,655		22	19
Tank material								600	1,515	40	
Tin							997	1,628	1,175	371	187
Zinc						2,729		1,869	8,348		
Total	1,033	4,008		5,768	29,860	2,729	1,761	12,349	11,295	1,297	302
Machinery and vehicles:											
Automobiles									83	3	
Machinery, miscellaneous						12				126	18
Motor trucks						113					3
Tractors, gasoline									30	30	
All other										76	16
Total						125			113	235	37
Chemicals:											
Acids							441	279		3	
Borates						1,131					
Charcoal, animal							62	201			
Soda, caustic							45	169	171		
All other							10		60	8	29
Total						1,131	558	649	231	11	29
Unclassified: Miscellaneous	529	1,910	53,338	1,463	7,894		327	3,871	3,409	1,008	35
Total foreign exports	244,884	204,108	141,764	162,657	126,246	37,912	105,961	168,572	295,369	732,974	549,627

DOMESTIC.

COASTWISE RECEIPTS AND SHIPMENTS.											
Animals and animal products, except wool and hair: Mudshell							8,087	1,467			
Vegetable food products, oil seeds, expressed oils, and beverages: Groceries	5,151	3,581	2,507	3,984		79					
Other vegetable products, except fibers and wood:											
Broomcorn					47	155					
Electrical goods			716								
Rosin					650						
Total			716		697	155					
Textiles:											
Bagging, cordage, and twine						427					
Clothing, dry goods and notions	6,009	5,258	1,791	12,424		28					
Cotton	3,860	4,075	715	791							
Linoleum, carpets, etc			694	1,740		70					
Sisal										1,313	1,875
Total	9,869	9,333	3,200	14,955		525				1,313	1,875

Water-borne commerce at the port of Texas City, Tex., 1912–1922—Continued.

DOMESTIC—Continued.

Commodities.	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
COASTWISE RECEIPTS AND SHIPMENTS—continued.											
Wood and paper:											
Furniture	4,722	1,992									
Lumber	8,391	12,971	2,212								
Paper, etc						347					
Roofing material						769					
Wood, manufactures of						132				221	4
Total	13,113	14,963	2,212			1,248				221	4
Nonmetallic minerals:											
Asphaltum						3,024					
Brick, clay, etc						112					104
Cement									117		
Coal	57,596	71,995	36,039	42,274			4,106	60			
Construction material			3,423	3,486							
Petroleum products	4,860	6,102	1,709	350		31,004	77,230	135,585	1,767,586	2,375,003	2,104,447
Sand, shells, etc	44,915	21,702	15,457	31,844							
Sulphur							500	45,304	120,592	110,490	261,744
Total	107,371	99,799	56,628	77,954		34,140	81,836	180,949	1,888,295	2,485,493	2,366,295
Ores, metals, and manufactures of, except machinery and vehicles:											
Copper wire	2,146	1,336									
Iron and steel, and manufactures of	23,069	36,936	3,543	4,480	29,560	24,313	9,064		10		
Tin						1,354					
Wire manufactures	25,754	32,999	33,959	33,418							
Total	50,969	71,271	37,502	37,898	29,560	25,667	9,064		10		
Machinery and vehicles:											
Agricultural implements	9,014	1,438	796	250							
Machinery, miscellaneous	8,585	4,215	1,154	646		251					50
Total	17,599	5,653	1,950	896		251					50
Chemicals:											
Acid phosphate		4,542				5					
Ammunition											
Paints and oils	2,575	1,543				56					
Soda, lye, and potash						468					
Sulphuric acid											
Total	2,575	6,085				529					
Unclassified: Miscellaneous	9,965	22,654	2,528	3,803	30,412	2,253	732				
Total coastwise receipts and shipments	216,612	233,339	107,243	139,490	60,669	64,847	99,719	182,416	1,888,305	2,487,027	2,368,224
Internal traffic: Animals and animal products, except wool and hair: Mudshell											5,524

Summary of water-borne commerce at the port of Texas City, Tex., by classes.

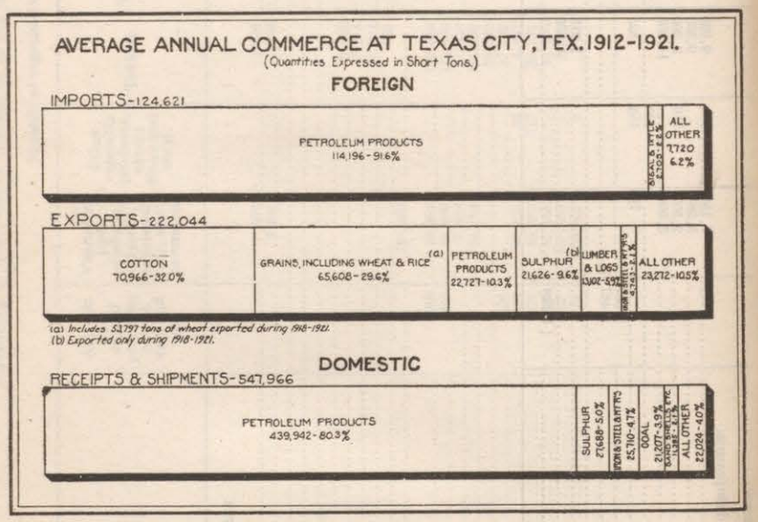
[Quantities expressed in short tons.]

	Animals and animal products, except wool and hair.	Vegetable food products, oil seeds, expressed oils, and beverages.	Other vegetable products, except fibers and wood.	Textiles.	Wood and paper.	Non-metallic minerals.	Ores, metals, and manufactures of, except machinery and vehicles.	Machinery and vehicles.	Chemicals.	Unclassified.	Grand total.
FOREIGN.											
Imports:											
1912		978		1,642					53	68	2,741
1913		2,841		1,265					53	4,621	8,780
1914						31,563				20,536	52,099
1915						4,800				2,842	7,642
1916						61,609	14,147			2,462	78,218
1917						158,371				2,150	160,521
1918				9,408	33	159,378	2,487				171,306
1919				7,218	112	141,457	2,067				150,854
1920				7,331		171,451	1,279				180,061
1921				913		433,020			57		433,990
1922		108,533			135	236,140			18		344,826
Exports:											
1912	288	20,382		192,634	29,602	416	1,033			529	244,884
1913	925	31,906		120,460	43,491	1,408	4,008			1,910	204,108
1914		3,818		84,608						53,338	141,764
1915		24,154		125,393	5,402	477	5,768			1,463	162,657
1916				78,510	5,601	4,381	29,860			7,894	126,246
1917	656			17,102	1,625	14,544	2,729	125	1,131		37,912
1918	450	93,170	99	4,487	2,384	2,725	1,761		558	327	105,961
1919	578	59,087	717	35,721	18,730	36,870	12,349		649	3,871	168,572
1920	306	82,169		49,996	11,151	136,699	11,295	113	231	3,409	295,369
1921	297	457,943		3,300	15,689	253,194	1,297	235	11	1,008	732,974
1922	31	156,401	9	25	1,036	391,722	302	37	29	35	549,627
DOMESTIC.											
Coastwise receipts and shipments:											
1912		5,151		9,869	13,113	107,371	50,969	17,599	2,575	9,965	216,612
1913		3,581		9,333	14,963	99,799	71,271	5,653	6,085	22,654	233,339
1914		2,507	716	3,200	2,212	56,628	37,502	1,950		2,528	107,243
1915		3,984		14,955		77,954	37,898	896		3,803	139,490
1916			697				29,560			30,412	60,669
1917		79	155	525	1,248	34,140	25,667	251	529	2,253	64,847
1918	8,087					81,836	9,064			732	99,719
1919	1,467					180,949					182,416
1920						1,888,295	10				1,888,305
1921				1,313	221	2,485,493					2,487,027
1922				1,875	4	2,366,295		50			2,368,224
Internal traffic, 1922	5,524										5,524

Summary of water-borne commerce at the port of Texas City, Tex., by years.

[Quantities expressed in short tons.]

Year.	Foreign.			Domestic.		Grand total.
	Imports.	Exports.	Total.	Coastwise receipts and shipments.	Internal traffic.	
1912	2,741	244,884	247,625	216,612	.....	464,237
1913	8,780	204,108	212,888	233,339	.....	446,227
1914	52,099	141,764	193,863	107,243	.....	301,106
1915	7,642	162,657	170,299	139,490	.....	309,789
1916	78,218	126,246	204,464	60,669	.....	265,133
1917	160,521	37,912	198,433	64,847	.....	263,280
1918	171,306	105,961	277,267	99,719	.....	376,986
1919	150,854	168,572	319,426	182,416	.....	501,842
1920	180,061	295,369	475,430	1,888,305	.....	2,363,735
1921	433,990	732,974	1,166,964	2,487,027	.....	3,653,991
1922	344,826	549,627	894,453	2,368,224	5,524	3,268,201



TERRITORY TRIBUTARY TO TEXAS CITY.

The territory served by the Texas ports as a whole is explained in the report on Galveston, page 141, and shown on the map accompanying that report.

Territory served for import traffic.—Through the courtesy of the Texas City Terminal Co. the board is able to present in this report tables showing the origin of exports and the destination of imports handled by rail carriers through Texas City during the calendar year 1921. These figures are in very close agreement with those compiled by the Corps of Engineers, which will be found in the chapter on the commerce of the port. The most important import handled through Texas City during the calendar year 1921 was crude oil, amounting to 425,785 tons, all destined to points in Texas. Imports of sisal totaling 913 tons were forwarded to Illinois and 57 tons of caustic soda were moved to points in Texas. The remainder of the import traffic was destined to Texas points.

Territory served for export traffic.—During the calendar year 1921 a total of 423,415 tons of grain, exclusive of corn and rice, were shipped through the port of Texas City. This grain came from Colorado, Nebraska, Oklahoma, Texas and Kansas, but much the larger share came from the last-named State. The accompanying table prepared by the Shipping Board shows the destination of 126,747 long tons of wheat exported during the calendar year 1921. Of this amount, 40,731 tons went to Italy, 20,414 tons to Holland, and lesser amounts to Belgium, France, Spain, Portugal, and England. The railroad figures show a total exportation of corn through Texas City amounting to 33,700 tons, of which 15,212 came from Kansas, 4,748 from Nebraska, and 13,740 from Oklahoma. The Shipping Board figures show 69 tons of corn exported, all destined to Mexico. Crude oil shipments through Texas City in 1921 are reported as 146,530 tons, all of which originated in Texas. Petroleum and products were shipped to England, Denmark, Germany, Holland, France, Mexico, and Canada. Rail carriers in 1921 brought 104,526 tons of sulphur to this port for export. The Shipping Board figures show the destination of 33,044 tons of sulphur going to France, Germany, Spain, Australia, and Canada. Australia took a larger amount than any other country reported by the Shipping Board.

Raw cotton shipped from Texas City in 1921 as reported by rail carriers amounted to 3,300 tons, all originating in the State of Texas. The Shipping Board figures show that 857 tons of this cotton went to

Belgium. Other important exports shown by railroad figures as moving through Texas City during the year consisted of flour, hay, rice, cottonseed, stock feed, cattle, lumber and products, brick, cement, tin plates, steel, pipe, machinery, tractors, wagons, and miscellaneous commodities in small lots. A map is presented showing by States the origin of the exports and the destination of the imports through Texas City during 1921, and another map is presented showing the foreign origin and destination of certain of these movements as reported by the Shipping Board.

Origin of exports delivered at Texas City by rail during the calendar year 1921.

[Quantities expressed in short tons.]

	Totals.	Colorado.	Kansas.	Nebraska.	Oklahoma.	Texas.	Origin unknown.
Animal and animal products, except wool and hair: Cattle	297					297	
Vegetable food products, oil seeds, expressed oils, and beverages:							
Flour	25					25	
Hay	234					234	
Rice	220					220	
Cotton seed	60					60	
Corn	33,700		15,212	4,748	13,740		
Stock feed	231					231	
Other vegetable products, except fibers and wood: Grain	423,415	32,512	256,200	18,612	109,540	6,551	
Textiles: Cotton	3,300					3,300	
Wood and paper:							
Barrels	54					54	
Shooks	316					316	
Shingles	38					38	
Pine lumber	15,206					15,206	
Nonmetallic minerals:							
Fire brick	639						639
Lime	15					15	
Sulphur	104,526					104,526	
Lubricating oil	1,086					1,086	
Crude oil	146,530					146,530	
Cement	97					97	
Grease	198					198	
Ores, metals and manufactures of, except machinery and vehicles:							
Tin plate	363				363		
Building steel	134						134
Pipe	397					397	
Machinery and vehicles:							
Machinery	126						126
Tractors	30					30	
Knocked down wagons	18						18
Unclassified	1,728					901	827
Total	732,983	32,512	271,412	23,360	123,643	280,312	1,744

Destination of imports handled through Texas City during the calendar year 1921.

[Quantities expressed in short tons.]

	Totals.	Illinois.	Texas.
Textiles: Sisal	913	913	
Nonmetallic minerals: Crude oil	425,785		425,785
Chemicals: Caustic soda	57		57
Unclassified	7,235		7,235
Total	433,990	913	433,077

Origin of principal imports through the port of Texas City during the calendar year 1921.[1]

[In cargo tons of 2,240 pounds.]

IMPORTS.	Petroleum, crude.	Total.
Mexico	72,097	72,097

Destination of principal exports through the port of Texas City during the calendar year 1921.[1]

[In cargo tons of 2,240 pounds.]

EXPORTS.	Wheat.	Corn.	Cotton, raw.	Petroleum and products.	Lumber.	Sulphur.	All others.	Total.
United Kingdom: England	4,276			6,154				10,430
North Atlantic and Baltic Europe:								
Denmark				4,130				4,130
Havre-Hamburg range								
Germany	2,186			18,600		5,005	50	25,841
Holland	20,414			4,565				24,979
Belgium	19,536		857					20,393
France						1,000		1,000
Total	42,136		857	23,165		6,005	50	72,213
South Atlantic Europe:								
France				1,581				1,581
Portugal	7,700							7,700
Total	7,700			1,581				9,281
West Mediterranean:								
Spain (Mediterranean)	14,490					1,500		15,990
France	17,414					9,439		26,853
Italy	40,731							40,731
Total	72,635					10,939		83,574
Mexico		69		7,940	3,787		2	11,798
Australia						12,800		12,800
Pacific Canada						3,300		3,300
Atlantic Canada				74,569				74,569
Total	126,747	69	857	117,539	3,787	33,044	52	282,095

[1] Prepared by the Division of Statistics, Bureau of Research, United States Shipping Board.

GENERAL

The development of a port at Texas City was first undertaken in 1895, when the Texas City Terminal Co. began the dredging of a channel, about 16 feet deep at mean low tide and 100 feet wide, from Galveston Harbor to Texas City. This channel was taken over by the United States in 1899 and was deepened to 25 feet at mean low tide and 100 feet wide. The river and harbor act of March 4, 1913, adopted the present project for a channel 30 feet deep at mean low tide and 300 feet wide on bottom, protected by a pile dike on the north side. The port is only 7½ miles from Galveston and while distinct in its control and administration, the traffic passing through it is similar to that at Galveston and Houston. Except for strictly local business these three ports constitute a single commercial gateway.

There are three steamship lines operating on regular schedule, one to Cuban ports and two to Mexico. Lines operating to the United Kingdom, Europe, and the Orient call at the port as required. Like Houston, Texas City is in a position to take advantage of the service of the many lines operating to Galveston when the cargo offered is sufficient to justify the vessel in shifting berth.

During the 10-year period from 1912 to 1921 the imports have comprised 14 per cent, exports 25 per cent, and the domestic receipts and shipments 61 per cent of the business. The chief imports during this period were petroleum products and sisal, and the chief exports were cotton, grain, including wheat and rice, petroleum products, and sulphur. The movement of wheat began with 10,300 tons in 1918, increasing to 421,700 tons in 1921. On the other hand, there has been a heavy decline during the last few years in the amount of cotton exported as compared with the period between 1912 and 1915. It is worthy of note that cotton exports through both Galveston and Texas City have declined in recent years, while there has been a marked development of this trade at Houston.

The internal traffic consists largely of coastwise receipts and shipments, the larger share of which is outbound. Between the years 1912 and 1915 a large number of commodities were moved in coastwise traffic through this port, but during the last few years traffic of a general character has apparently ceased, and the present coastwise business is confined to petroleum and sulphur, neither of which is dependent upon regular coastwise service.

The facilities provided by the port of Texas City have no doubt influenced the movement of a considerable amount of business through this port. The interest of both the ship and the shipper have been kept in mind in determining the character and layout of the facilities. The mechanical equipment provided for handling bulk materials has no doubt been instrumental in attracting the very important sulphur movements through this port. Cotton placed in storage in the warehouses at Texas City is moved to shipside by a monorail system and charges for drayage are thereby avoided. The facilities are fully adequate for existing commerce. Indeed the commerce during the last few years has been largely confined to bulk materials and the general cargo piers have not been used to their capacity.

Texas City is served by the Texas City Terminal Railway Co., whose tracks extend onto the piers. This line connects at Texas City Junction and at Terminal Junction with the several railroads serving the port of Galveston.

The territory served by the port for through business is in general the same as that served by Galveston and Houston, but the actual movements during the year 1921 were confined to the States of Texas, Colorado, Kansas, Nebraska, Oklahoma, and Illinois. There is a large amount of oil imported for local refineries and a large amount of refined petroleum products of local origin which are shipped in both foreign and domestic trade. Aside from this one commodity, however, the local community does not contribute in any substantial degree to the commerce of the port. Rail rates are the same as to Galveston, not only from interior points but also from the local sulphur mines. There are no rail rates which in themselves exercise any important influence on the movement of traffic through this port in competition with other Texas ports.

In brief, the future development of commerce through Texas City must be based, as it has been in the past, upon the excellent facilities which this port affords for the safe and economical storage and handling of traffic.

List of piers and wharves, port of Texas City, Tex.

Reference No. on map.	Names of terminals.	No. of page on which described.
1.	Oil dock	242
2.	Piers B, C, D, and E	242
3.	Piers A and O	242
4.	Passenger pier	244

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