

2246

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Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Hydrographic*
Field No. Office No. *2246*

LOCALITY

State *California*
General locality *San Francisco*
Locality *Bay*
1895-1896
194

CHIEF OF PARTY

St. James H. Sears.

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DATE

2246

U. S. COAST AND GEODETIC SURVEY.

Gen. W. W. Duffield, Superintendent.

State: *California.*

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 2246.

LOCALITY:

San Francisco Bay.

1895-6.

CHIEF OF PARTY:

Lieut. James H. Sears, U. S. N.

2246

1001

APR. 13. 1896. 004581

To Capt Meyer

Report transmitting Records
and sheets of work on a
Section of San Francisco Boy
(Office No. of Protection 5.)

Write me at: Sausalito, Cal.

Telegraph me at: do

My Express Office is: do

U. S. Coast and Geodetic Survey, Str. 'McArthur'

Sausalito, Cal.

2-527 Par 209 December April 4, 1896.
Report

Gen. H. H. Safford,

Superintendent, U. S. C. and G. Survey,
Washington, D. C.

Sir:

In accordance with par. 209, "General Instructions for Hydrographic Parties," I have the honor to submit a Report covering the work of this party as set forth in the original records and projections transmitted in to days mail registered.

A list and description of the separate packages is appended.

Projection #5 (Office number), as sent to the party did not represent the changes that have taken place in the artificial shore line for a number of years, and I requested the Asst. in charge of Sub Office to provide me with a plat of the

water front of the City of San Francisco, which request was promptly complied with.

The plat of the Harbor Commissioners I found unsuitable.

The changes have not been made upon the projection, but a separate sheet is forwarded showing the hydrographic work along the water front and wharves. This sheet represents the present water front.

On the Oakland side of the Bay, as well, changes have taken place which were run in by this party and introduced upon the projection. These changes are as follows;

The pier of the Narrow Gauge branch of the S. P. Railroad has been extended. (Pier plotted). The wharf off the Alameda Baths has entirely disappeared with the exception of a few sunken piles inshore.

The wharf off the Oil Works, Alameda, has been torn down in part, and converted into a conduit for oil pipes, leaving only a foot path for other traffic. A small wharf has been built between this conduit and the narrow gauge pier.

A small wharf has been built at the foot of Grand Avenue, Alameda, the Encinal Yacht Club having headquarters at its extremity.

Hydrography was executed in accordance with your instructions, dated Dec., 27, 1894, supplemented by detailed instructions of the Hydrographic Inspector; the effort being made to make the work close and exact.

The deep water immediately south of Island of Yerba Buena, commonly called Goat Island, is not developed upon the

projection, as it more properly falls upon another projection (Office number 4), work upon which is already in hand.

In view of the fact that a new railroad, the "San Joaquin Valley Road," is to have terminal facilities in China Basin, especial pains were taken to develop that locality, and, further, a minute examination was made of the two (2) dangerous rocks in Mission Bay. A separate sheet is forwarded (scale 1/1000,) showing characteristic soundings in their neighborhood, and their development to one (1) foot contours.

In the Pacific Coast Pilot, edition, 1889, p. 188, it is stated. "It is reputed that a third head has been discovered to the Mission Bay Rock, as described from the examination of 1871."

This head is now located - Since

the recent grounding of the ship "Packard" upon one of these heads, a new danger-buoy has been placed and named the "Packard Rock-buoy":

The latest positions and drifts of the three buoys are plotted.

It is the intention of the Lt. Ho. Board, to replace the Iron can buoys with spars, as less liable to be dragged away, and less dangerous to small craft.

A new rock has been located, and to day, specially reported to the Coast Survey Office.

The search for this rock was made upon information acquired from the Captain of the tug "Jes. H. Redmond", to the effect that a rock existed in the neighborhood with a depth of 22 ft, having over it 4 ft, of mud. The rock is not

covered with mud, but seems to be a smooth Boulder lying about 65 metres, N. E. May. from S. E. corner of Spreckel's sugar refinery wharf, with dimensions about 6 metres by 7 metres, with a least reduced depth of 15'-6.

A mud spot is located about 30 metres N. E. from Stewart St. Wharf and $\frac{1}{3}$ the length of the wharf from the extremity, having a least reduced depth of 15'-3.

Dredging is constantly going on along the wharves.

The boulder off Rincon Pt. (depth upon chart $4\frac{3}{4}$ fms.) has been found to have a reduced depth of $4\frac{1}{2}$ fms.

Another boulder has been located by this party just ^{outside} inside the last one (and about where 7 fms is the sounding upon the chart) with a least depth of.

3'

4 fms. 4'. This boulder lies N.E. x E 1/2 E (mag) about 470 metres from the outer corner of Spear Street Wharf. It extends within the 5 fm. curve about 18 metres N. E and S. W., and about 8 metres N. W. and S. E.

These boulders being in a very busy portion of the Bay would seem likely to become a menace, if vessels are given greater dimensions in the future, as the lowest waters will reduce these depths.

The highest pinnacle of "Mission Bay Rock" has a reduced depth of 12.4' and bears S. mag. from the chimney on the Mission Rock Warehouse, (Hydrographic signal 'Rock') distant 360 metres.

The next ^{pin} pinnacle with a reduced depth of 15.6', bears from the first

S. $\frac{1}{4}$ N mag., distant 40 metres.

The third, with a reduced depth of 17' 6, bears from the first S. S. E. $\frac{1}{4}$ E. (mag), distant 35 metres.

Sonoma Rock bears S. E. + E. $\frac{3}{4}$ E. Mag. from the highest point of Mission Bay Rock distant 240 metres, and has a reduced least depth of 14' 3.

Many lines were run in developing these rocks, and locating others, which cannot appear upon the projection. The method of dragging was resorted to with success.

With the exception of the dangers noted, careful inquiry and close sounding fails to reveal other dangers.

An automatic tide gauge was maintained by the Sub Office for three (3) months at the Union Iron

works, an independent gauge, erected by the Party, being maintained after the discontinuance of the Automatic gauge.

Other gauges were erected for purposes of comparison and reference upon the area covered by the projection, viz: At Powell St. wharf; At the pier of the Southern Pacific Narrow Gauge Branch; near the foot of Broadway Oakland, and at the Encinal Yacht Club House.

The tidal stations are plotted and noted upon the projection.

After careful consideration of the tidal data, it was deemed best to divide the projection into sections, referring each to the several different gauges.

The lines of division upon the projection

are double pencilled & noted.

Concerning the currents within the limits of the sheet I regret to say that little can be offered of value, and, in my opinion, extended observations will be necessary before practical results can be reached. - I consulted with men who are navigating the waters, covered by the sheet, every day, and became impressed with the difficulty of formulating the currents. The important features in the problem are to be found in the narrow entrance to the Bay; the great volume of water, and the dam at the entrance; the fluctuations in the volume and velocity of waters in the tributary streams, especially, the Sacramento & San Joaquin Rivers. With these

rivers high, their streams meeting an incoming low flood, the conditions are very different from those existing when the streams are low, and the flood at its strongest.

In crossing the Bay from side to side, different phases of current will be encountered, and this fact caused great difficulty in running straight lines.

The Ferry boats from Oakland may meet a powerful flood to the eastward of Yerba Buena one day, and later, under the same conditions, as regards stage of tide, may only meet it ^{to the} westward of the same Island, a contest going on between opposing currents.

In the entrance to the Bay the lack of correspondence between stage

of tide and currents is marked; upon both sides, amounting to two hours sometimes on either.

The flood current on one occasion was making off Pt. Lebos after H. N. at Sausalito, and, at the same time the ebb current was ebbing off Fort Point. The same day, in the Mile Rock - Lebos Channel, the boats experienced a strong current setting on shore; further out, a strong ebb, and close in, the flood current, the ebb seeming to split at the Mile Rocks, forming the eddy which causes small sailing vessels entering the harbor to take this channel, by which they gain a fair, or but a small adverse current, at all times, up to Fort Point.

A strong local effort is being made to have the harbor improved by blowing up the dangerous rocks, and in other respects with reference to the rocks upon projection forwarded. I venture the opinion that some should be destroyed as they occupy the busiest parts of the Bay, and where the currents are most unreliable.

In advance of finishing the work upon another projection I would like further to urge another suggested improvement, the establishment of range marks for the running inward of Bonita Channel, the present marks being inadequate, for the reason that no stranger could locate the "Windmill", there being several in the neighborhood,

and the chances are against his locating Blue Mountain as it is most frequently obscured. The buoys in Bonita Channel are the surest guide, but range marks would relieve a stranger of much doubt. This measure is strongly urged by the Chamber of Commerce, and from my experience in the channel I am convinced that it is one of the first improvements that should be undertaken.

Another suggestion by the Chamber of Commerce, that the chart of the Bay should exhibit the legal anchorage grounds, I would also offer for your consideration, and I send the latest circular defining these limits.

It is a rather frequent occurrence that vessels are put to expense to

change their anchorage through ignorance of the location, the charts not furnishing the necessary information.

In conclusion I have to express my thanks to the Assistant in Charge of Sub-Office for his unvarying courtesy and advice; and to all the members of the Party for faithful work without intermission, Ensign Mc Cully having especially distinguished himself by his untiring efforts.

Very respectfully
James H. Sears,

Lieut. U.S.N. Asst. N.S.C. & G.S.



Forwarded
J. F. Moser Lt Com'd'r, U. S. N.,
Hydrographic Inspector C. & G. Survey.

Chief Wharfinger, Board of State Harbor Commissioners,

FOOT OF CLAY STREET.

San Francisco, , 189.....

TO PILOTS, MASTERS OF TUG BOATS, AND MASTERS, OWNERS AND CON-SIGNEES OF VESSELS:

GENTLEMEN:—The undersigned begs to call your attention to the following orders, adopted by the Board of State Harbor Commissioners, concerning the anchoring of vessels in the harbor of San Francisco:

1. Vessels must not be anchored, nor moored, between a line drawn from the outer end of Jackson Street Wharf, to the most southerly point of Goat Island, and a line drawn from the outer end of Mission Street Wharf, to the Ferry Slip of the South Pacific Coast Railroad Company, on the Alameda side of the Bay; nor must they be anchored so as to permit them to swing between said lines.

2. Vessels must not be anchored, nor moored, between a line drawn from the intersection of the north line of Townsend Street, with the easterly line of the Pacific Mail Steamship Company's Wharf, to the extreme westerly end of the north training wall of Oakland Harbor, and a line drawn from the outer end of Berry Street Pier to the extreme westerly end of the south training wall of Oakland Harbor; nor must they be anchored so as to permit them to swing between the said lines, nor within eight hundred feet of the Hay Wharf.

3. Vessels must not be anchored, nor moored, between a line drawn from the most easterly point of Point Blunt, passing over Blossom Rock as marked by buoy, and intersecting the 500-yard limit at a point directly north of the outer end of Lombard Street Pier. This line if projected would touch the outer end of Washington Street Pier, and a line drawn from the northwesterly end of the Grain Shed of Section 1, of the Sea Wall, to the light on Alcatraz Island. Nor must they be anchored so as to permit them to swing between said lines. [Amended Feb. 5, 1895.]

4. Vessels must not be anchored, nor moored, within five hundred yards of a line drawn from the extreme northerly end of the Sea Wall, southerly through the extreme outer ends of the piers, to the outer end of Berry Street Wharf.

5. Vessels propelled by steam, except when going to or leaving the Sea Wall, must not run inside of a line eight hundred feet distant from, and parallel with, the said Sea Wall.

Also to the following sections of the Political Code:

SECTION 2539.—It shall be the duty of the Chief Wharfinger to execute and enforce the rules and regulations which may be established by said Board of State Harbor Commissioners pursuant to the provision of this article. And it shall be the duty of all pilots, masters of tug-boats, masters, owners and consignees of vessels, to obey all lawful orders and directions of the Chief Wharfinger in relation to the stationing, anchoring and removing of vessels under and pursuant to such rules and regulations. The Chief Wharfinger is empowered to determine cases of collision by consent of all parties interested; and where damages do not exceed three hundred dollars the decision is final.

SECTION 2541.—If any master, agent or owner of any water craft shall refuse or neglect to obey the lawful orders or directions of the Chief Wharfinger in any matter pertaining to the regulation of said harbor, or the removal or stationing of any water craft, such master, agent or owner so refusing or neglecting, is guilty of a misdemeanor, and upon conviction thereof before any court of competent jurisdiction, shall be punished by a fine not to exceed three hundred dollars, or by imprisonment not to exceed one hundred days in the jail of the City and County of San Francisco.

Now, in pursuance of the duty imposed on me by Section 2539 of the Political Code, quoted above, I call on you to observe the above orders, in relation to the anchoring of vessels in the Harbor of San Francisco, and forbid you, under the penalties prescribed in Section 2541 of the Political Code, also quoted above, to anchor vessels within the limits prohibited by the said orders, or to so anchor them that they will swing within the s..... s.

Chief Wharfinger.

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