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50698

U. S. COAST AND GEODETIC SURVEY.

Henry S. Pritchett, Superintendent.

State: *Cal.*

DESCRIPTIVE REPORT.

Topographic Sheet No. **2370**

LOCALITY:

Part of San Diego Bay

1898-99

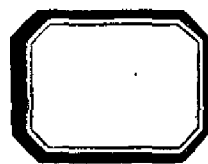
CHIEF OF PARTY:

Ferdinand Westdahl

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Description Report to accompany topographic sheet entitled:
Treasury Department
U. S. Coast and Geodetic Survey
Henry S. Pritchett, Superintendent
Topographic Survey of part of
San Diego Bay
California

50698



Executed in November 1898 and February 1899
 by Ferdinand H. Nordahl, Assistant
 Scale 10,000

This is a resurvey of the shoreline in the vicinity of the Entrance to San Diego Bay, made for the purpose of ascertaining what changes, if any, had taken place in it as an immediate result of the jetty construction outside the mouth of the harbor, and to accurately determine the jetty itself. A hydrographic survey of the Entrance and part of the bay was begun at the same time. There is an abundance of triangulation points shown on the projection but unfortunately those available for hydrographic and topographic determinations on the outside beach had all been destroyed by the building of a so-called boulevard or drive-way constructed on the summit of the narrow sand ridges separating the waters of the bay and ocean and along the outer edges of the Coronado Beach Islands.

Triangulation points within the bay could not be seen
 over the brush covering the island so that the only point
 available was the "Coronado Hotel K.E. corner". This was
 too distant from Point Loma to be exposed simultaneously
 on the Plan-table. In order not to delay the beginning of
 hydrographic work while the weather was fair in November
 signals were erected along the beach in suitable positions
 and determined in the best manner possible with the
 Plan-table while surveying the shore line. When I was
 subsequently instructed to determine trigonometrically
 all signals used in the hydrography when practicable,
 all permanent aids to navigation, and certain points on
 the East and Southeast tangents of Point Loma and the
 highest tower of the Coronado Hotel with other points in
 and near the city of San Diego selected for Compass ranges,
 it became necessary to carry out a regular scheme of
 triangulation in which was included the principal signals
 used in the hydrographic survey then well advanced, in
 fact completed outside the Entrance. The field work of
 the triangulation was finished on the 7th February and
 the triangle sides computed as soon as possible. When I began
 Position computations I discovered that the geographical data
 sent me did not correspond in either latitude or longitude
 with the data used in making the projections in the Office,
 and there was no means of ascertaining the exact difference

except by measuring on the sheet. The new triangulation points were therefore plotted by distances on the hydrographic sheet, thence transferred to the topographic sheet as the latter had become more or less shrunken and distorted from exposure in the field. There was a slight discrepancy, amounting to more than ten meters in some places, between the signals as determined by triangulation and with the plane-table along the Coronado Beach. For this reason, and because there had been large erosions of the shoreline from the Entrance towards Coronado Hotel by storm-waves combined with extraordinary high tides during the months of December and January, during which the waves frequently washed over the boulevard into the bay, I concluded to resurvey it from the Entrance to the new triangulation point "New South," also to carefully delineate the Coronado Hotel and buildings in its immediate vicinity because some of the compass ranges selected had the tangent of the Hotel as a front range, and that could not be conveniently determined by triangulation. Not being able to obtain from the City Engineer or other parties a reliable map of the immediate city front of San Diego and Coronado Beach there were also surveyed within the limits of the hydrographic sheet, where changes had been made since 1887. The railway constructed for the purpose of transporting stone to the jetty was also surveyed to its junction with previously mapped

Railroads. On Point Loma the survey of the shore line, both upper and lower bluff-line, was carried out to, and included the new lighthouse reservation and the buildings connected therewith. The two easternmost houses shown on Ballast Point are dwellings for the lightkeepers. The others are barns, warehouses, and more or less temporary structures. The houses shown on Point Loma abreast of Ballast Point are all temporary structures, used by the Military authorities for barracks and housing of laborers on the fortifications under construction. The latter are for obvious reasons not shown on the sheet. All the buildings of the U. S. Quarantine Station at La Playa are shown, and also some houses at Rosville, further to the northward, apparently built since the last survey.

On the ridge of Point Loma, to the northward of the U. S. Military Reservation and beyond the limits of the topographical sheet, are several houses which show from seaward. Some of the most conspicuous of these have been included in the triangulation. Very extensive lemon and olive orchards have been planted here and flourish remarkably well when irrigated. In a few years this will undoubtedly be a marked feature of Point Loma, converting the otherwise bleak and barren looking elevation into a tree-clad ridge and dotted with well built dwellings.

The city of San Diego can not be seen from the ordinary tracks of the Coasting steamer above Loma Ridge, but coming from the Northwestward about six brilliant electric lights on tall masts were seen when bearing E. S. E. (mag.) and distant thirty-five miles, remaining in sight until hidden over by over by the gradually rising Loma ridge, and again appearing to the Southward of it. The majority of these light-masts were determined in the triangulation of 1887. Since that time the city has spread to the Northward so that scattered houses, built on city lots with street-car lines running out to and beyond them, exist on the latitude of "Old Town Δ " and reaching Eastward to the valley of the San Diego river.

Compass-ranges.

In the beginning of January, 1899, I was directed to determine certain objects, to be used as ranges for adjusting compasses, marked on a published chart accompanying the letter. There had been previously selected by some officers presumably of the U. S. Navy detailed on Coast Survey duty. I have carried out these instructions and determined by triangulation the following points indicated on the above mentioned chart, viz. "Loma S. E. tangent", "Loma East tangent", "Ballast Pt. light", "Quarantine Flg. Staff", "La Playa light", "Coronado Hotel Highest

town", "Electric Power Ho. Smokestack", and "Court House Dome", the two latter near the city water front, San Diego. There was another point near there marked with a genny on the chart and evidently intended for the tower of the R.R. Depot, called by Asst. Rodgers, who determined it in the triangulation of 1887 "San Diego C. & P. R. R. Depot". Owing to press of other duties I did not have an opportunity to run outside with the ship to investigate the availability of these ranges before beginning the triangulation, and not until the day I sailed from San Diego, after having waited almost a week for weather favorable for photographing the ranges, did I finally discover the impracticability of some of them. The objects in San Diego, such as "Court Ho.", "Electric Power House Smokestack," etc. cannot be seen readily behind any part of Coronado Hotel on account of the height of the latter structure, the lack of sufficient height in the former, and above all the intervening growth of trees in the town of Coronado Beach, which is a constantly increasing impediment. Nor is the highest tower, any tower or tangent of the Coronado Hotel, the best front-range. The most available point in that vicinity is the moderately tall brick chimney of the power house situated about 120 yards southeast from the Hotel, behind which the point of the back range may be seen approaching on either side. Unfortunately this was not determined by triangulation,

being shut in behind the hotel from the base selected, but I believe the topographical determination taken from the sheet is close enough for the purpose; and there is but one point in the city of San Diego conspicuous enough for a back range, namely "Russ School House tower Flg. Hf." which was determined by Asst. Rodgers in 1887, and which may also be seen with sufficient accuracy when in range with "Rotunda Δ ", the highest tower of Coronado Hotel, and the next highest or Central tower, which is merely a topographical determination. There are, however, other ranges available for compass adjustment, especially on a ship where two observers in addition to the Pilot can give their attention to them, one to observe the ship's head and the other the bearing of the range in crossing it. Beginning at the anchorage in front of San Diego and proceeding to star they are as follows, the front range being first named:

Bacon 7	-----	Stand Pipe
Bacon $5\frac{1}{2}$	-----	Stand Pipe
Diamond Bacon	-----	Tank
Bacon $6\frac{1}{2}$	-----	Electric Power Ho. Smoke stack
Bacon 5	-----	Stand Pipe
Bacon 6	-----	Electric Power Ho. Smoke stack
Diamond Bacon	-----	" " " " "
Bacon 4	-----	" " " " "
Bacon 2	-----	Diamond Bacon

Bacon 2	Bacon 6
Bacon 2	Bacon 4
Bacon 2	Stand Pipe
Chimney	Stand Pipe
Ballast Pt. Lt. Ho.	Quarantine Flg. Staff
Loma East tangent	Quarantine Flg. Staff
Loma East tangent	Ballast Pt. Lt. Ho.
Chimney	Tangent of Pt. Loma*
Loma South East tangent	Russ School House
Pt. Loma Lt. House (92)	Rotunda Cor. Hotel (highest tower)

if far enough to the Southward

Any point of Coronado Hotel ----- Russ School House.

At night, if facilities for reading the Azimuth Compass are good, the following ranges are available, proceeding in the same order to be from San Diego:

Diamond Bacon	Bacon 6
Diamond Bacon	La Playa Light
Bacon 6	La Playa Light
Bacon 6	Bacon 2
Bacon 6	Diamond Bacon

* The range Chimney ----- Tang. of Pt. Loma is the extension of the direction "Old Town Δ " to "Chimney". When I was arriving at Old Town Δ on Chimney I found the latter to be exactly in line with a well defined tangent of Pt. Loma at a point between "Loma E. tangent" and "Loma S.E. tangent".

Beacon 2 ----- Ballast Pt. Light -----
 Beacon 2 ----- Beacon 6 -----
 Ballast Pt. Light ----- La Playa Light -----
 Loma East tangent ----- La Playa Light (moment of disappearance)
 Loma East tangent ----- Ballast Pt. Light (" " ")
 Loma East tangent ----- Beacon 2 (" " ")
 31 in all

It may be impracticable to observe all of these ranges when passing out of the harbor but where there are so many to choose from a sufficient number could be obtained in the constantly curving channel to make up a Deviation Card. All omissions could be supplied by crossing and recrossing at different angles the range Pt. Loma Lt. Ho. ----- Rotunda Coronado Hotel, or, if bound to the southward, Coronado Hotel ----- Russ School Ho.

As stated above the preferable point at or near the Coronado Hotel to bring in range with any point in San Diego is the brick chimney of the power house situated approximately 140 meters N. 76° E. (true) from "Rotunda," and it is possible as yet to see "Electric Δ" in range with it. I do not recommend any other points in San Diego for a back range. "Electric" is prominent because it is almost constantly belching out coal-smoke or steam, and "Russ School House" because it is a large, light-colored building with a tall central tower, situated at so high an

elevation and so near the outskirts of the city, as not to lose its identity among neighboring structures. There are a great many points determined in San Diego. Some of them on the city front are undoubtedly lost as I could not identify them even with the Plane-table. Taller and more conspicuous buildings have been erected since 1887 and their very profusion makes them impracticable for ranges. The Electric light masts are not prominent enough in day time and the same objection of superabundance obtains in their case also.

All of the points, except Coronado Power Co. Chimney, herein recommended for ranges have been determined, mostly in the triangulation of 1899. It is true that the majority of them are beacons, liable to be changed in position when re-built; but unless there has been a decided change in the channel-line they are re-built in exactly the same spot or so near to it that the difference can not be detected with the Plane-table. They are constructed of piles protected by a sheathing of copper and are therefore durable.

Triangulation Points. Only such triangulation points as have been in any way used in either the topographic or hydrographic survey are inked on the sheet. On the immediate waterfront of San Diego are marked many points such as Flagstaffs or wharves, etc. which do not now exist and some fall where there is now water. I did not have time to identify the majority of these.

points. A few are here noted which I searched for and could not find.

Madr Point Δ has washed away. The Electric Light marks in the town of Coronado Beach have been removed.

Blackfish Point Δ is lost. It is doubtful if any of the bases in the early triangulation will now be found.

Glorietta Bight Δ is probably destroyed. Entrance Δ is destroyed.

Respectfully submitted

Ferdinand Westdahl

Asst. C. & G. Survey