U. S. COAST AND GEODETIC SURVEY.

Henry S. Critchett, Superintendent

State: Cal.

DESCRIPTIVE REPORT.

Topographic Sheet No. 2370

Locality:
Part of San Diego Bay

1898-99

Chief of Party:
Frederick Meesdahl
Description Report to accompany topographic chart entitled:

Treasury Department

U.S. Coast and Geodetic Survey

Henry S. Butcher, Superintendent

Topographic Survey of part of
San Diego Bay
California

Exercised in November 1898 and February 1899
by Ferdinand Mendeble Ass't

Scale 70,000

This is a survey 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 none 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-ridge 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 found over the brush covering the island, so that the only point available was the "Coronado Hotel. No. 2. 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 hydrographic survey, practicable, all permanent aids to navigation, and certain points on the East and Southeast tangents of Point Loma and the highest tans 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 Ensenada. The field work of the triangulation was finished on the 7th February and the triangle sides computed as soon as possible. Where I began position computations I discovered that the geographical data put 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, whence 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 feet in some places, between the signals as determined by triangulation and with the plane-table along the Coronado Brach. For this reason, and because there had been large sections of the shoreline from the Entrance towards Coronado Hotel by storms, waves combined with extraordinary high tides during the months of December and January, during which the walls frequently washed over the boulevard into the bay, I concluded to proceed, if 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 Brach there was 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 lighthouse keeper. The others are barns, warehouses, and more or less temporary structures. The houses shown on Point Loma are east of Ballast Point are all temporary structures, used by the Military authorities for barracks and housing of laborers on the fortifications under construction. The laborers 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 Rosicille, 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 where 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 steamers about Loma Ridge, but coming from the northward about six brilliant electric lights on tall masts can be seen when breezing S.E. (mag.) and distant thirty-five miles, remaining in sight until hidden one by one by the gradually rising Loma Ridge, and again appearing to the southward of it. The majority of these light-marks were determined in the triangulation of 1887. Since that time the city has spread to the southward so that travel of hours, built on city lots with street-car lines running out to and beyond them, exist on the latitude of "Old Town" and reaching eastward to the valley of the San Diego river.

\underline{Compass-tangents.}

In the beginning of January, 1899, I was directed to determine certain objects, to be used as tangents for adjusting compasses marked on a published chart accompanying this letter. They had been previously selected by some officer presumably of the U.S. Navy detailed on Coast Survey duties. I have carried out these instructions and determined by triangulation the following points indicated on the above mentioned chart, viz. "Loma S.E. tangents," "Loma East tangents," "Ballast Pt. Light," "Quarantine Hg. Staff," "La Playa Light," "Coronado Hotel Light."
tours," Electric Power No. Smoke-stack," and "Court House Dome," the two latter near the city waterfront, San Diego. There was another point near their marked with a quarry on the chart and evidently intended for the town of the R. C. Depot, called by Capt. Rodgers, who determined it in the triangulation of 1887 "San Diego C. & R. C. Depot." Owing to press of other duties I did not have an opportunity to come 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 House," "Electric Power House Smoke-stack," 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 on the point 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 southwest 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 saws potted, but I believe the topographical determination taken from the sheet is close enough for this purpose; and this is but our point in the city of San Diego conspicuous enough for a back range, namely "New School House town Fig. 91", which was determined by Capt. Rodgers in 1887, and which may also be given with sufficient accuracy where in range with "Rotunda", the highest tower of Colorado Hotel, and the next highest on Central tower, which is nearly a topographical determination. These are, however, other ranges available for compass adjustment, especially on a ship where two obstructions in addition to the Pilot can give their attention to them, one to observe the ship's head and the other the bracing of the range in crossing it. Beginning at the anchorage in front of San Diego and proceeding to the bay air as follows, the front range being first named:

Beacon 7 Stand Pipe
Beacon 5½ Stand Pipe
Diamond Beacon Tank
Beacon 6½ Electric Pumphouse, Smoke Stack
Beacon 5 Stand Pipe
Beacon 6 Electric Pumphouse, Smoke Stack
Diamond Beacon
Beacon 4
Beacon 2 Diamond Beacon
Beacon 2 __________ Beacon 6
Beacon 2 __________ Beacon 4
Beacon 2 __________ Grand Pk.
Chimney ___________ Grand Pk.
Ballast Pt. Lt. Ho. ______ Quarantine Flg. Staff
Loma East tangent ______ Quarantine Flg. Staff
Loma East tangent ______ Ballast Pt. Lt. Ho.
Chimney ___________ Tangent of H. Loma*
Loma SouthWest tangent ______ Russ School House.
Ph. Loma Lt. House (92) ______ Rotunda Cor. Htts. (highest hts.)

If far enough to the Southward
Any point of Coronado Htts. ______ 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 sea from San Diego:

Diamond Beacon __________ Beacon 6
Diamond Beacon __________ La Playa Light
Beacon 6 ___________ La Playa Light
Beacon 6 ___________ Beacon 2
Beacon 6 ___________ Diamond Beacon

* The range Chimney ______ Tang. of H. Loma is the extension of the direction
* Old Town Delta to Chimney. When I was observing at Old Town Delta on Chimney
I found she lay to be exactly in line with a not-defined tangent of H. Loma
at a point between "Loma East tangent" and "Loma West 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 St. Lomand Ho._
Rotunda, Coronado Hotel, or, if bound to the southwards,
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 W. 76° E. (true) from "Rotunda;"
and it is possible as yet to see "Electric A" in range with
it. I do not recommend any other point 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 to high an
elevation and to mark 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 now 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 nearer
objective of superabundance obtains in their care also.

All of the points, except Coronado Point and Chimney
Beach, recommended for ranges have been determined,
mostly in the triangulation of 1899. It is true that the
majority of these are beacons, liable to be changed in position
where 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 it that the difference can not be detected
with the Plane table. They are constructed of posts, 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 included on the sheet. On the
immediate waterfront of San Diego are marked many
points such as Flag Stacks or wharves, etc. which do not
now exist and some fall where sheer is now water,
I did not have time to identify the majority of their.
points. A few are here noted which I searched for and could not find.

Madr Point Δ has washed away. The Electric Light masts in the town of Coronado Beach have been removed.
Blackfish Point Δ is lost. It is doubtful if any of the bases in the daily triangulation will ever be found.
Glorietta Bay Light Δ is probably destroyed. Entrance Δ is destroyed.

Respectfully submitted,

Ferdinand Kretschel
Capt. C. & G. Survey