DESCRIPTIVE REPORT

Photo

Topographic Sheet No. T - 5418

State: CALIFORNIA

Locality: Gulf of Santa Catalina

LAGUNA BEACH

TO

NEWPORT BAY

1934-35

Chief of Party

Robert W. Knox, H. & G. E.
Applied to Chart 5101 - May 11, 1936 - R.M.Z.

17462 1950 L.A.M.
DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

PHOTO

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field Letter

REGISTER NO. 5418  5418

State... CALIFORNIA
General locality... SOUTHERN CALIFORNIA
Locality... Laguna Beach to Newport Bay, photographs January 17, 1934
Scale... Date of survey... 19
Vessel... Launch and Shore Party, California, Project No. 102
Chief of Party... R. T. Knox
Surveyed by... see data sheet of descriptive report
Inked by... W. J. Mignola
Heights in feet above... to ground to tops of trees
Contour Approximate contour Form line interval... feet
Instructions dated... April 14, 1932 & August 6, 1934
Remarks: Compiled from aerial photographs at a scale of 1:10,500 for reproduction by the photo-lithographic process at a scale of 1:10,000.
DATA SHEET
NO T 5418

PORTION OF WORK

DONE BY

DATE COMPLETED

• PROJECTION BY:

W. J. Mignola

October 23, 1934

W. J. Mignola

• PROJECTION CHECKED BY:

D. L. Ackland

October 23, 1934

D. L. Ackland

• CONTROL PLOTTED BY:

D. L. Thompson

October 26, 1934

D. L. Thompson

• CONTROL CHECKED BY:

W. J. Mignola

October 26, 1934

W. J. Mignola

• RADIAL PLOT BY:

J. C. Mathisson

October 31, 1934

J. C. Mathisson

• RADIAL PLOT CHECKED BY:

W. J. Mignola

December 8, 1934

W. J. Mignola

• COMPILED AND INKED BY:

W. J. Mignola

February 8, 1935

W. J. Mignola

• TOPOGRAPHY TRANSFERRED BY:

D. L. Thompson

January 10, 1935

D. L. Thompson

• TOPOGRAPHY CHECKED BY:

W. J. Mignola

February 5, 1935

W. J. Mignola

AREA OF SHEET: 14.28 square statute miles

LENGTH OF SHORE LINE: 7.95 statute miles

LENGTH OF RIVERS AND SLOUGHS: none.
DESCRIPTIVE REPORT

To Accompany

PHOTO-TOPOGRAPHIC SHEET, REGISTER NO. 5418

LAGUNA BEACH TO NEWPORT BAY
CALIFORNIA
1934-35
ROBERT W. KNOX, CHIEF OF PARTY
Scale 1:10,500

PROJECT INFORMATION

For information which applies to the entire project see descriptive report accompanying report for Register No. 5410.

DESCRIPTION OF AREA

This sheet includes that part of the coast of Southern California between the east end of Laguna Beach and the southerly end of the city of Newport Bay. This includes a revision of Register No. 5030 necessary to effect a satisfactory junction.

Earth and rock bluffs line the shore from Laguna Beach to Newport Bay with the exception of the mouth of Laguna Canyon, where there is a wide sand beach. The bluff line is ragged, and is broken with
sand beaches from Laguna Beach to Abalone Point.

The San Joaquin Hills lie to the north and east of the shore. The slope of the terrain north of Laguna Beach is gradual for a distance inshore of a little less than half a mile, and then rises steeply into the hills which reach an altitude of more than a thousand feet at a distance of about three miles inshore.

North of Laguna Beach the steep slope comes practically to the shore line; in some places the spurs of these hills reach elevations of more than 500 feet less than a mile inshore.

From a point about a mile north of Reef Point to the north limits of this sheet the slope back of the bluff line becomes gradually less steep.

The entire area included in this compilation north and west of the middle of Laguna Canyon was included in the Spanish Grant, San Joaquin.

Drainage from the San Joaquin Hills consists mainly of arroyos eroded in the soft ground. Laguna Canyon is the only important stream bed on this sheet. Like the smaller arroyos, it is normally dry, a flow occurring there only at rare intervals when there is a heavy rainfall in the hills. All other arroyos drain very limited areas, but are subject to sudden and brief flow.
The mouth of Laguna Canyon widens into a valley with gently sloping sides, but it does not have the tidal stream beds or marshy areas so characteristic of the stream beds between San Diego and San Juan Creek.

Nigger Canyon reaches the shore at Emerald Bay. At this place the bluffs are broken and ragged. The bottom of the canyon is very close to the level of high water, but there is no wide flat mouth. Similar conditions are found at the mouths of Moro, Muddy, Los Trancos and Boat Canyons, and at Buck Gulch. The bottoms of the smaller arroyos, however, are usually at a considerable height above the high water line when they reach the tops of the bluffs.

Cultivation is limited to those places near the shore and toward the northern end of the sheet where the slope is not so steep. Land under cultivation at the time of the photographs, verified by field inspection, has been shown with the conventional symbol.

All settlements on this sheet from Laguna Beach on the south to Corona Del Mar on the north are resort towns. At Emerald Bay and Corona Del Mar the streets have been graded and paved far beyond the requirements of the population at this time.
The State Highway (No. 3) between San Diego and Los Angeles follows the bluff line very closely for the entire length of this sheet. This is a wide concrete paved highway with easy curves and grades. There is no railway within the limits of the sheet.

PHOTOGRAPHS

This sheet is covered by photographs Nos. 326 to 340 inclusive. These photographs were secured January 17, 1934 between the hours of 11:10 and 11:20 A.M.

For further information regarding photographs refer to the general descriptive report accompanying the report for Register No. 5410.

BRIDGES

The only bridges on this sheet are minor highway structures built only to provide for intermittent flow in the drainage systems. None of these bridges are built over navigable waters.

CONTROL

The control for this sheet was plotted from the field computations of the triangulation executed by
Charles Pierce in 1933.

A proportional adjustment was made by the compilation party to compensate for a discrepancy of several meters which occurred where two parts of the triangulation came together.

For further information regarding this field adjustment refer to the general report accompanying descriptive report for Register No. 5410. Pages 10 and 13.

A table of control is appended to this report. The positions used to plot the control on this sheet; including the DMS and DPs converted to the scale of the compilation, i.e. 1:10,500, appear on this list. The field adjusted positions given records in meters but must records for the positions used for the vector normal are not given in the oblique units. Fig.

Abundance of control in the vicinity of Laguna Beach afforded strong intersections and determinations. The radial plot was made to Newport Bay without adjustment.

- INTERPRETATION OF PHOTOGRAPHS -

All detail of importance for charting purposes was clear enough on the photographs; with the exception of the high and low water lines and offshore
detail. In most cases the high water line was obscured by the tops of the bluffs along the shore.

INFORMATION FROM OTHER SOURCES

Since the high and low water lines could not be taken from the photographs; and since most offshore reefs, rocks, and obstructions were not clearly defined in the photographs: these details were run in by plane table methods and their positions transferred to this sheet from photostatic copies of Topographic Sheets, Field Letters, 'X' and 'Y', 1934. See supplement for differences.

For a comparison of these details with previous surveys see descriptive reports transmitted with those Topographic Sheets.

The spelling and location of street names was taken from real estate plats supplied by realtors for the area. This data was checked by field inspection.

Maps supplied by the state highway department were used with which to check the position and alignment of the main highway.

No changes in the highway had occurred since the time of the photographs.
COMPARISON WITH OTHER SURVEYS

In the comparison with Register 1908, dated 1889, two islands which are shown on the older chart appear in the present compilation as reefs. These are located just off Reef Point. It is believed that wind and water erosion during the time intervening since the older survey may have changed the character of what were probably low lying small islands to that of reefs at the present time.

The photostatic copy of Register 1908 was not quite clear enough in the vicinity of Pelican Point to enable the compilation party to recognize two or three apparent islands off that point. These could not be found by the topographic party of 1934.
INFORMATION FROM OTHER SOURCES

It is believed that the highwater line could probably be determined more accurately from the photographs after a thorough field inspection than by plain table surveys. It was found, in parts of this area, that the highwater line as shown on the topographic sheets did not check with the evident position of the highwater line on the photographs. In general there was fair agreement; but the discrepancies were due, apparently, to the long distances between rodded points on the plane table work, with the consequent inaccurate sketching in between.

It would, of course, be impossible to locate the small heads of rocks awash or sunken rocks if the photographs were taken at or near high tide. The submerged rock ledges photographed well when surrounded by grey or white sand, even when covered by as much as 18 feet of water. It is obviously impossible to pick a high point on these ledges for the purpose of charting a rock awash when inspected at low tide.

This evidently refers to where line on T 48 R 6 (9"), which did not check with the compilation and was partially revised on T 6231 A 1935. B.G. G.
COMPARISON WITH OTHER SURVEYS

This compilation was compared with Register No. 1646, dated 1885 and was found to check satisfactorily in regard to details of natural features.

LANDMARKS

Landmarks for this area were selected by field inspection and their positions determined by the usual compilation methods, with the exception of those which were already located by triangulation.

The copy of Form 567, Landmarks for Charts, which is appended to the general descriptive report for the entire project includes the landmarks for this area.

BENCHMARKS

Benchmarks as described by the releveling party of G.R. Fish in 1932-33 were located by field inspection and their positions were determined by the radial intersection method, along with the regular compilation of this sheet.

The benchmarks, as shown on this sheet, are believed to have been located with a probable error of less than two meters in position.

A complete list of these benchmarks, along with their descriptions as given by the releveling party corrected in a few minor details, and the geographic positions of the benchmarks as scaled from this sheet,
Note
The estimated accuracy of location given on the offshore page is rather high for work on this scale though the computation is well controlled and has been carefully compiled. A better estimate is an accuracy of location of 2 to 5 meters for intersected points, and 2 to 8 meters for other detail except in the mountain areas where only stream lines are shown. In these areas due to frequent and erratic change in elevation and consequent change in scale of the photos a better estimate is an accuracy of location of 5 to 10 meters for intersected points, and 5 to 20 meters for other detail.

O. G. Jones
are both included in this list which is appended to this report. These descriptions have been confined and filed on Form 52-Y.

GEOGRAPHIC NAMES

Boat Canyon, Nigger Canyon, More Canyon, Muddy Canyon, Los Trancos Canyon, and Buck Gulch are names found on the maps of the highway department, State of California. They appear to be generally in use in their respective localities and have, therefore, been retained in the present compilation.

RECOMMENDATION FOR FURTHER SURVEYS

This compilation is believed to have a probable error of less than two meters in positions of well defined detail of importance for charting purposes, and of less than four meters for all other data. The location of drainage in the steep slopes to the easterly edge of the sheet may be found to have a slightly greater error.

DAMAGE TO SHEET

During the process of plotting the control a steel straight edge was inadvertently dropped on the sheet, the corner of the instrument inflicted a small tear in the celluloid just offshore from Rocky Bight.

Great care has been exercised in the handling
of the sheet in order to prevent this tear from spreading. This break has been mended with Testers' cement.

LETTERING

All lettering required for the completion of this sheet has been shown in ink on the cover sheet.

All geographic names have been checked for spelling and position and are believed to be correct.

Respectfully submitted:

W.J. Mignola
W.J. Mignola
Compiler

Approved:

John C. Mathisson,
Jr. H. & G. Engineer,
<table>
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<td>Arch Rock, 1884</td>
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<td>Center Signboard</td>
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<td>Support Laguna Beach Hotel, 1933</td>
<td>33 - 32 868.7 (979.8)</td>
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<td>North spire, grey stone</td>
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<td>1611.9 (148.6)</td>
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<td>bldg., Laguna Beach, 1933</td>
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<td>925.8 (548.3)</td>
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<td>(Head Crescent Bay Drive)</td>
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<td>Tract Office Tower Finial</td>
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<tr>
<td>edge highway, south limits</td>
<td>33 - 35 886.7 (961.8)</td>
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<td>Newport Beach, 1933</td>
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M 167 1933 At Laguna Beach, at the southwest corner of cliff Drive and Coast Boulevard, in the front wall of the Laguna Beach Art Gallery, at the northeast corner of the building about 4 feet from the end of the wall and 3 feet above the ground. A standard disk stamped M 167 1933 and set vertically. (Orthometric Elevation 60.891 feet.)

N 167 1933 About 1.5 miles northwest along the coast highway from Laguna Beach, about 1.1 miles northwest of the Laguna Beach Art Gallery, 45 feet northeast of the center line of the highway and 65 feet southeast of the entrance to Emerald Bay properties, 12 feet northwest of power pole No. 4402592. A standard disk stamped N 167 1933 and set in the top of a concrete post. (Orthometric Elevation 85.370 feet.)

P 167 1933 About 2.7 miles northwest along the coast highway from Laguna Beach, in the southeast corner of highway bridge No. 383 - 72, at Tryon's Camp Grounds, in the top of the wing wall and about 3 feet below the surface of the highway. A standard disk stamped P 167 1933. (Orthometric elevation 17.646 feet.)

R 167 1933 About 1.8 miles S.E. of the south city limits of Newport Beach, about 4.2 miles N.W. along the coast highway from Laguna Beach, at the N.W. corner of the intersection of the highway and the road leading to the Crystal Cove Auto Camp, about 60 feet S.W. of the center line of the highway, and 45 feet N.W. of the Crystal Cove road, at the end of a fence and about 3 feet inside the fence line. A standard disk stamped P 167 1933 and set in the top of a concrete post. (Orthometric elevation 69.964 feet.)
S 167 1933

About 1.0 mile southeast of the south city limits of Newport Beach, 55 feet northeast of the center line of the coast highway, set 3 feet from the southeast headwall of state highway culvert No. 254 - 33. A standard disk stamped S 167 1933.
(Orthometric elevation 116.977 feet.)
<table>
<thead>
<tr>
<th>BENCHMARK</th>
<th>POSITION</th>
<th>SECONDS IN METERS</th>
</tr>
</thead>
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<tr>
<td>M 167 1933</td>
<td>33° 32' + 1131.1</td>
<td>717.4 / (1185.7)</td>
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<td>117° 47' 364.4</td>
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<td>N 167 1933</td>
<td>33° 33' + 945.5</td>
<td>175.0 / (1165.3)</td>
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<tr>
<td>P 167 1933</td>
<td>33° 33' + 1190.0</td>
<td>658.5 / (1178.5)</td>
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<td>117° 49' 369.3</td>
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<tr>
<td>R 167 1933</td>
<td>33° 34' + 1088.4</td>
<td>760.1 / (949.3)</td>
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<td>S 167 1933</td>
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<td>1636.2 / (1150.1)</td>
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<td>117° 51' 97.7</td>
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Checked by: D.L.T. 2-21-35
REVIEW OF AIR PHOTO COMPILATION NO. T 5418

Chief of Party: Robert W. Knox H. & G.E.  Compiled by: W.J. Mignola

April 14, 1932

Project: 102

Instructions dated: August 6, 1934

1. The charts of this area have been examined and topographic
information necessary to bring the charts up to date is shown
on this compilation. (Par. 16a, b, c, d, e, g and i; 26; and 64)

2. Change in position, or non-existence of wharfs, lights, and
other topographic detail of particular importance to naviga-
tion which affect the chart, is discussed in the descriptive
report. (Par. 26; and 66 g, n)

3. Ground surveys by plane table, sextant, or theodolite have been
used to supplement the photographic plot where necessary to
obtain complete information, and all such surveys are discussed
in the descriptive report. (Par. 65; and 66 d, e)

4. Blueprints and maps from other sources which were transmitted
by the field party contain sufficient control for their applica-
tion to the charts. (Par. 28)

No blueprints or maps transmitted.

5. Differences between this compilation and contemporary plane
table and hydrographic surveys have been examined and rectified
in the field before forwarding the compilations to the office
and are discussed in the descriptive report.

Rectified except as noted in the descriptive report.

6. The control and adjustment of the photo plot are discussed in the
descriptive report. Unusual or large adjustments are discussed
in detail and limits of the area affected are stated. (Par.
12b; 44; and 66 c, h, i)

7. High water dates and tides and seasons are marked on the chart
and are shown on the compilation. (Par. 16a, 26; and 66)

NOTE: Strike out paragraphs, words or phrases not applicable and
modify those requiring it. Paragraph numbers refer to those in the
Topographic Manual. Refer also to the pamphlet "Notes on the Compli-
ation of Planimetric Line Maps from Five Lens Air Photographs."
8. The representation of low water lines, reefs, stands and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41)

9. Recoverable objects have been located and described on Form 524 in accordance with circular 30, 1933, circular letter of March 3, 1933, and circular 31, 1934. (Par. 29, 30, and 57) Also first order benchmarks recovered and located, positions are given in appendix to report.

10. A list of landmarks was furnished on Form 587 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, complied with. (Par. 16d, e; and 60)

11. All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c) No bridges over navigable water areas on this sheet.

12. Geographic names are shown on the overlay tracing. The accepted local usage of new names has been determined and they are listed in the report, together with a general statement as to source of information and a specific statement when advisable. Complete discussion of place names differing from the charts and from the U.S.G.S. Quadrangels is given in the descriptive report, together with reasons for recommendations made. (Par. 64, and 66k)

13. The geographic datum of the compilation is N.A.1927 and the reference station is correctly noted. (Field comp. field adj.)

14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)

15. The drafting is satisfactory and particular attention has been given the following:
   1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout except as noted in the report.
   2. The degrees and minutes of Latitude and Longitude are correctly marked.
3. All station points are exactly marked by fine black dots.

4. Closely spaced lines are drawn sharp and clear for printing.

5. Topographic symbols for similar features are of uniform weight.

6. All drawing has been retouched where partially rubbed off.

7. Buildings are drawn with clear straight lines and square corners where such is the case on the ground.

(Par. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48)

16. No additional surveying is recommended at this time.

17. Remarks:

18. Examined and approved;

[Signature]
Robert W. Knox, H. & G.E.
Chief of Party

19. Remarks after review in office:


Examined and approved:

[Signature]
K. T. Adams
Acting Chief, Section of Field Records

[Signature]
Chief, Division of Charts

[Signature]
E. Borden
Chief, Section of Field Work

[Signature]
Chief, Division of Hydrography and Topography.
### GEOGRAPHIC NAMES

**Date:** 5-8-35  
**Survey No.:** T-5418  
**Chart No.:** 5102  
**Diagram No.:**

* Approved by the Division of Geographic Names, Department of Interior.  
♀ Not Approved by the Division of Geographic Names, Department of Interior.  
R, Referred to the Division of Geographic Names, Department of Interior.

<table>
<thead>
<tr>
<th>Status</th>
<th>Name on Survey</th>
<th>Name on Chart</th>
<th>New Names in local use</th>
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<tr>
<td>Bay</td>
<td>Recreation Point</td>
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<td>Crescent Bay</td>
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<td>Two Rock Point</td>
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<td>Emerald Bay</td>
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<tr>
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<td>Emerald Bay</td>
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<td></td>
<td>Boat Canyon</td>
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<td>See Des. Report Pages 8</td>
<td></td>
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<tr>
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<td>Moro Canyon</td>
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<td>Reef Point</td>
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<td>Crystal Cove</td>
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</tr>
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<td></td>
<td>Two Rock</td>
<td></td>
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</tr>
</tbody>
</table>

*Approved Names Underlined in Red*  
M.L. Fleming
REVIEW OF AIR PHOTO COMPILATION T-5418

The compilation has been reviewed and compared with previous surveys in the same locality with the following results:

Comparison with T-4896 (1934).

This is a graphic control survey on a scale of 1:10,000. In addition to the information given on pages 6 and 6a of the Descriptive Report, a comparison of the compilation with T-4896 showed only minor differences with the exception of two errors which were corrected. Off Reef Point, the most westerly rock awash had been transferred from T-4896 to the compilation about 25 meters east of its true position. The most southerly submerged rock in the same locality was likewise incorrectly transferred and, in addition, was noted as a rock awash. Corrections to the compilation have been made and the positions of the rocks and the notes concerning them now agree with T-4896.

The geographic names Arch Rock, Two Rock, and Crescent Bay were added to the compilation from T-4896. The elevations of several rocks were in disagreement on the compilation, on T-4896, and on H-5602 (the most recent hydrographic survey) on account of differing uses of fractional heights. It was the opinion of the reviewer of H-5602 that the elevations of the rocks in question as shown on the hydrographic survey were probably the most accurate. The compilation was therefore revised to agree with H-5602. No change was made on T-4896.

One recoverable topographic station was omitted from the compilation. "CAP", lat. 33°33′+1181 meters, long. 117°49′+429 meters, was added to the compilation in the office (plotted by J. A. ; checked by U.S. ). A description for "DUN", a recoverable topographic station, was submitted on Form 524. This was discovered to be identical with triangulation station "Highest Rock: Off Two Rocks Point, 1933". The triangulation station was shown on the compilation; Form 524 was destroyed.

With the additions and corrections mentioned above, the compilation now includes all information on T-4896 not superseded by T-6231a with the exception of the magnetic declination and temporary plane table stations.

Comparison with T-6231a (1935).

This is a graphic control survey on a scale of 1:10,000 and is a resurvey of a portion of T-4896 made where differences had been found between T-4896 and the compilation in order to determine which was correct. The compilation is found to be in perfect agreement with this survey.
Comparison with T-1646 (1885).

This is a topographic survey on a scale of 1:10,000 made fifty years ago. The compilation agrees with it satisfactorily considering the changes to be expected in such an area on account of natural causes during such an interval. The high water line on the compilation is in general found slightly farther westward than on T-1646. The location of the adjacent bluffs, however, remain practically the same. Minor differences are found in the delineation of drainage. An examination of the compilation and the photographs in these areas indicate that a sufficient number of supplemental control points were used in these canyons to determine the proper position of the drainage and the compilation is therefore accepted as correct.

The detail outside the high water line on T-1646 is rather indefinitely shown by the compilation, and the most recent topographic survey included all offshore detail shown on T-1646 with the following two exceptions: the compilation does not show an easterly ledge on the north side of Emerald Bay (lat. 33°33.0', long. 117°48.8'), nor another ledge off Reef Point (lat. 33°33.9', long. 117°50.1'). These two ledges are not shown on the most recent topographic surveys. The photographs of this area have been carefully examined and no such ledges can be found. These have not been shown on the compilation. Their charting should be continued, however, unless their existence is disproved by H-5602. The compilation therefore supersedes T-1646 except for the two ledges mentioned above and contours.

Comparison with H-5602 (1934).

This is a hydrographic survey on a scale of 1:10,000. The topographic information on which was obtained from T-4895 and T-5251a. Except for minor differences the compilation agrees with H-5602.

During the comparison one error on H-5602 was discovered. The ledge off Abalone Point had been transferred fifty meters east of its correct position. Correction has been made to H-5602.

Comparison with H-1908 (1889).

This is a hydrographic survey on a scale of 1:20,000 and a discussion of the comparison of the compilation with it will be found on page 6a of the Descriptive Report. No further comparison was made by the reviewer.

Comparison with Chart 5101.

This chart is on an approximate scale of 1:235,100 and the information thereon has been taken from the surveys already discussed above. The compiler's attention is called to the fact that the town of Laguna on the chart is called Laguna Beach on the compilation. A wreck symbol
See comparison with T-4186 in descriptive report of
T-5030 for explanation of the dashed line delineating foul
area from Arch Rock, northwly to junction with T-5036.
just south of Recreation Point
was noted on the chart, which is south of Recreation Point. This
wreck is shown neither on the compilation nor the latest hydrographic
survey (H-5602). The photographs have been examined and no indica-
tion of this wreck can be seen. Its removal from the chart is recom-
mended.

General.

Instructions for the project have been complied with. The projec-
tion was found satisfactory. The drafting is excellent and the compi-
lation is adequately controlled and carefully made. An unusual adjust-
ment to the control used was necessary. This is referred to on pages
4 and 5 of the Descriptive Report with a complete description of the
adjustment necessary on pages 10 to 13 of the Descriptive Report accom-
panying T-5410.

In the position of the reference station given in the title of
T-5418 the value of seconds has been omitted. This was omitted because
the adjustment to the control mentioned above was made in meters and the
adjusted seconds value was not available. (See page 10 of the Descrip-
tive Report).