6050

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton *Director*

U. S. COAST & GEODETIC SURVEY
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DESCRIPTIVE REPORT

Topographic
~~*Hydrographic*~~

~~REVISION OF~~ *Sheet No.* ~~T-5010~~ 6050

LOCALITY 6050

San Joaquin Delta

Bouldin Island

19 34.

CHIEF OF PARTY

L. P. Raynor.

U. S. GOVERNMENT PRINTING OFFICE: 1930

6050

Form 537a
Ed. Nov., 1929

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 6050

TOPOGRAPHIC TITLE SHEET

Air Photo Control 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 No.

~~REVISION OF~~ REGISTER NO. ~~5060~~ 6050 6050

State California

General locality San Joaquin Delta

Locality Bouldin Island

Scale 1: 10,000 Date of survey March, April, , 19 34

Vessel Launch Higgins & Higgins No. 1

Chief of party Lieut. L. P. Raynor

Surveyed by R. Emmet McGowan

Inked by R. Emmet McGowan

Heights in feet above to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated 22LE 1930, 3-17-33, 19

SUPPLEMENTAL INSTRUCTIONS 9-2-33

Remarks: Revision of Air Photo Sheet 5010

DESCRIPTIVE REPORT

TO ACCOMPANY REVISION OF PORTIONS OF ~~TOPOGRAPHIC~~ Air Photo SHEET 5010-WEST HALF.

AUTHORITY:

The authority for the work is contained in the Director's letter 22-LE, March 17, 1933, 3rd paragraph, and Supplemental Instructions of Sept.2,1933.

GENERAL:

The planetable revision of the photo-compiled chart was undertaken after several discrepancies in the earlier work were discovered. These discoveries were made when placing hydrographic signals from detail shown on the photo-compiled chart. Trial sextant 3-pt. fixes and sextant angles taken at certain signals in the field would not check the positions of the signals plotted on the chart. The widths of streams were measured by stadia in the troublesome spots. At topographic signals SS2, SS5, LM10, PM17, and others, stadia-measured widths between brush lines or tule lines were found to be 5 to 10 meters greater ~~than charted~~. ~~Stadia widths~~ between the actual mean high water banks at topographic signal SS2 and certain other sections of the South Fork, Mokelumne River were found to be greater than charted widths by as much as 15 meters. Moreover, the bight at topographic signal SS3 seemed to be displaced, the island at topographic signal SM4 seemed to be displaced, the islands between signals SM11 and SS17 did not appear well detailed on the chart, the small but prominent island at topographic signal LW2 had been omitted, some of the detail of the slough islands between topographic signals PW18 and PM10A seemed misdrawn, and the omission of many of the buildings below the levees made it difficult to check or employ the remainder that were shown. (Known discrepancies in the eastern half of 5010 are probably of lesser importance.) The revision was undertaken to correct detail sufficiently well for hydrographic survey purposes and also to determine the possible extent of the noted errors in a photo-compiled chart.

SURVEY METHODS:

For the planetable work in the upper half of the sheet, six control points were plotted as follows:

1. Triangulation station Terminous, W.T., 1931.
2. Topographic Signal SS8, located by tape measure and theodolite direction from unmarked theodolite three-point fix a few hundred feet away, 1934.
3. Topographic signal SS12, located in manner of Signal SS8, from plotted and marked theodolite three-point fix, 1934.
4. Topographic signal SS20, an original photo-control point, 1932.
5. Triangulation station Rut, 1933 (Plotted on"dog-ear" addition to sheet to northward.)
6. Topographic signal Post, a signal 95.0 meters from, and on range to triangulation station Terminous, W.T. from original photo-control point, "End of Wharf, 1932."

The projection on this part of the sheet contained one serious error: At parallel 38° 07', the distance between 121° 31' and 121° 32' scaled 1465.6 meters as compared with tabular value of 1461.6 meters. The errors in other parts of the projection involved were small. A traverse, 1.75 miles in length, was run from topographic signal SS20 to SS12. With respect to a straight line drawn from SS20 to

SS12, the traverse position of signal SS12 was 7.1 meters beyond the plotted position. The original orientation was made on triangulation station Terminous, W.T.

Another traverse 1.6 miles in length was run from topographic signal SS8 to signal SS12. This traverse also plotted too long, also passing three meters to the south of the plotted position of signal SS12. The gross error was 6.3 meters. The beginning orientation was made on topographic signal Post.

A third traverse 1.1 miles in length was run from topographic signal SS8 to triangulation station Terminous, W.T. This traverse also plotted too long and also passed to the south of the tank. The gross error was 4.0 meters. The beginning orientation was made on topographic signal Post.

All three traverses and the signals located therefrom were adjusted according to method in Topographic Manual, p. 53. Since the running of the traverses, the stadia rods in use with the alidade have been tested and found to be reading too long at 300 to 500 meters, accounting for some of the consistent "overrunning" effect in the traverses. The adjusting of the traverses should have correctly eliminated most of this effect.

At the time these traverses were run and adjusted, topographic signals SS12 and SS8 had not been located by theodolite but had been located only by planetable cuts from topographic signals SS20, Post, and Rut. Subsequently, signals SS12 and SS8 were replotted from theodolite observations, tape measure and computations. The new positions (these are the positions shown on the sheet) plotted within 1.8 meters of the planetable-cut positions. Although the old positions have been erased from the sheet to avoid confusion during later field work, and are therefore lost, it was believed at the time, that, if the same traverses had been run when the new positions had been plotted, the directions of the changes in the two plotted signals would not have increased the closing errors. Regardless of this opinion, it must be noted that after the new positions of topographic signals SS12 and SS8 were plotted, the traverse points and hydrographic signals, within 1000 meters of the two, were again adjusted in a manner quite similar to the method of the previous adjustments. These latest adjustments were necessarily smaller than 1.8 meters.

Furthermore, where two traverses joined at signal SS12, all signals within stadia distance were finally located again directly from a setup close to signal SS12, to insure co-ordination east and west. Of these several adjustments, only the final accepted pricked-point will be found in the circle marking each signal, all previous points having been erased from the aluminum sheet. The topography was mapped after the adjustments had been made. In this latter routine, shoreline junction was made at each setup with the shoreline mapped from the previous steup. There were no discrepancies in these junctions over two meters in magnitude.

In the southwestern part of the sheet, the survey was begun at the theodolite three-point fix, an orientation made on triangulation station Terminous, W.T. and check cuts observed on signals SS8 and SS12.

From this point, unchecked traverses were run, not over one-half mile in length. However, one traverse run southwesterly around the large tule island to the vicinity of topographic signal PW21 was checked within 1 meter by a traverse run west to the vicinity of topographic signal PE20. Equal confidence is felt in the work run toward topographic signal PM6 in the east.

In the southeastern part of the sheet, the three-point fix there was occupied with the planetable, an orientation made on triangulation station Terminous, W.T., and a cut taken on a signal near topographic signal "Steel Windmill." A setup was then made at the signal to which the cut had been made and its position determined by resection on topographic signal Post. No other setup was made in this vicinity. (At the three-point fix mentioned above, a setup was made using the eastern sheet of the 5010 compilation on which the three-point fix is also plotted. With this sheet, orientation was made on triangulation station Terminous, W.T. and exact check sets observed on triangulation stations White Slough and Honker Cut, Latticed Steel Poles.)

MAGNETIC MERIDIAN:

Magnetic meridian was taken as indicated on the sheet. Needle seemed to come to rest too quickly and not always at the same point, as determined by repeatedly bringing declinatoire up against the same alidade rule. Magnetic meridian drawn is a mean determination.

LEGEND:

The mean high water line is shown by a heavy black line, except in three spots of marsh, where the heavy black line represents the outer edge of the marshes. The three marsh spots are near topographic signals SN16, SS6, and SS4A. The marsh symbol indicated their extent. The inner edge of the marshes were located and hence are shown by light black lines. These marshed have a vertical outer edge, a flat, sometimes bare, area grown with tules and are overhung at the inner edge by dense willows.

A dashed ink line paralleling the heavy HW line represents the extent of tule growth, thinning or fringing out at the outer edge. The outer edge is occasionally vertical, depending on the dredger work done. These areas are almost always covered by tidewater. In some of these areas, tules grow only at the extreme out edge, the remainder of the strip towards HW line being overhung with brush and trees, so low over the water as to prevent growth of tules. It is believed that if the overhanging brush were cleared away, as is done periodically, these strips would fill out solidly with tules.

Sections of the shoreline, without tule growth of any kind, but overhung with large dense willows low over the water line, have the extent of this brush to seaward shown by a pencil line. It is likely that, if this brush were cleared from the levee, as may be expected occasionally, some of the shallower shore waters now overhung with brush would grow into tule fringes.

The extent of the midstream islands is shown everywhere by heavy black lines, although certain tips not differentiated on the sheet, are very thin tule in fairly deep water and probably changeable in thickness and extent from one year to another. Brush growing on the small islands is indicated by a brush symbol. Where brush and tule are intergrown, the brush and marsh

symbols have been combined. Usually, any brush growing on one of these small islands marks higher ground, though not necessarily always above normal HW.

WARPING OF SHEET:

After a few days field service, the sheet developed the form that still persists. It was never clamped tightly to the planetable board and there is no apparent field reason for the form the sheet developed.

The additional bend in the northeast corner of the sheet was made accidently, in the wind, when removing the sheet from the final setup of the work.

CONCLUSIONS ON REVISION WORK:

The even displacement at the northwest corner of the sheet was known to exist before the field work began, when the original photo-control point (now topographic signal SS20) was found to have been misplotted on the original projection.

In the northeast corner of the sheet, the shoreline revision work ran into fair agreement with the original compilation. On the levees and into the land, however, a gross disagreement is found in the positions of all features of the town of Terminous, when only a few hundred meters from the important control station, triangulation station Terminous, W.T., 1931. The discrepancy there is in excess of 10 meters.

In the Potato Slough and Little Potato Slough revisions, the work was not run to agreement. To have continued would have meant the necessity of establishing more control points and probably the re-mapping of all of the remainder of the sheet. Borderline discrepancies with the eastern half of sheet 5010 (a separate aluminum sheet) would then probably require an equally large amount of revision on that sheet.

MISCELLANEOUS:

Siphons are shown near, not at, topographic signal SS4 and signal SS3. The island between LM32 and LM33 has not only been cleared of trees within the last few months, but also appears to have had its eastern shoreline altered by cutting the bank in at some recent time. This has not been verified.

Inkwork rubs from sheet easily. Building corners or ends may be lost.

April 30, 1934.

R. Emmet McGowan.

R. Emmet McGowan.
Surveyor.

L P Raynor

Approved:
L. P. Raynor
Chief of Party
C.& G. S.

This revision was done by the signal building party under R. Emmet McGowan, Observer and Surveyor, March and April, 1934.

GEOGRAPHIC POSITIONS

Geographic Positions of Theodolite Three Point Fixes used in this work:

	Latitude		Longitude	
Three point fix 511 C	38°07′	1056.4	121°33′	997.5
Gable Shed near 511 C SS 20	38°07′	1142.0	121°33′	1012.3
Camp 14 Three Pt. fix	38°07′	36.4	121°32′	566.5
Camp 17 Three Pt. fix	38°07′	501.4	121°31′	505.5
SS 8	38°07′	543.6	121°31′	363.9
End of Wharf	38°04′	1360.1	121°30′	682.4
Three Pt. fix 563 B	38°04′	1367.4	121°30′	665.4
Point SS 12	38°07′	19.1	121°32′	602.6

Review
~~Photo Control~~ Sheet T 6050.

This planetable survey was made by the party of L. P. Raynor, to locate hydrographic signals and to revise the shoreline and adjacent detail on the west half of air photo sheet 5010.

The planetable sheet is a ~~blueprint~~ blue line print on aluminum of the original air photo sheet 5010 and was furnished to Lieutenant Raynor for this revision work. Detail revised by planetable is shown on the sheet in black and red.

The entire air photo sheet 5010 is now being recompiled in this office from the original photographs and from additional control and information furnished by the recent field work of L. P. Raynor.

The work shown on this sheet 6050 in black supersedes that on sheet 5010. The revised sheet will be filed as T 5010 A.

BG. Jones
B. G. Jones.