

5104

Diag. Cht. No. 8502-2

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Pattan, Director

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

APR 6 1931

State: Alaska

Acc. No.

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 5104
Hydrographic } Field # 5

LOCALITY

Entrance to Knik Arm

Anchorage Waterfront and

North of Fire Island

1930

CHIEF OF PARTY

F. B. T. Siems

5104

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5104

HYDROGRAPHIC TITLE SHEET

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

Field No. 5

REGISTER NO. 5104

State ALASKA

General locality Entrance to ~~Cook Inlet~~ Knik Arm

Locality Anchorage Waterfront and North of Fire I. ~~Anchorage, Alaska~~

Scale 1:300
1:5000
1:40,000 Date of survey Sept. 11 to 16, 1930

Vessel Str. DISCOVERER- Port Motor Sailor-Skiff

Chief of Party F.B.T. Siems

Surveyed by F.B.T. Siems- J.A. Bond- R.C. Rowse

Protracted by J. Laskowski

Soundings penciled by J. Laskowski

Soundings in ~~#####~~ feet

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by J.T. Walker

Verified by J.T.W.

Instructions dated Sept. 3, 1930

Remarks:

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 5

Cook Inlet----- Knik Arm

Scales 1:300--1:5000--1:40000

U.S.C.&.G.S.S. Discoverer

F.B.T.Siems
H.&.G.Engr.
Commanding

INSTRUCTIONS:

The surveys were executed under telegraphic instructions from the Director, through the Inspector, Seattle Field Station, dated September 3, 1930. The instructions called for communication with Senator Howell, Chairman of the Senatorial Committee investigating the Alaska Railroad, in reference to his requirements for the surveys. Senator Howell advised that he desired examination of shoals in the main channel of Cook Inlet (Knik Arm) and examination of approaches to the Railroad Dock at Anchorage to determine the length necessary to extend the dock to accommodate a depth of thirty feet at low water.

The Director's instructions further advised that due to the shortage of time, soundings taken in Knik Arm could be plotted on Chart 8557 from control as shown on the chart.

LIMITS:

Part of the area covered by the survey is the channel area north of Fire Island and West of Pt. Woronzof. The surveyed area off the Railroad Dock extends coastwise approximately a mile north and south of the dock and is carried about 350 meters offshore.

CONTROL:

The three point fix was used for position control on the work developed on the 1:5000 and 1:40,000 scales. The control stations for the 1:40,000 sheet were taken from Chart 8557, the following objects being used for sextant fixes: West Pt. Lt., Race Pt. Lt., Beacon south of Pt. Woronzof, Pt. Woronzof triangulation station, Wireless Masts, Hut, and Square. Square has an insufficient number of cuts to locate it properly although the position as shown on the smooth sheet is as accurate as can be obtained. The tangent of the shoreline indicated on the sheet has been used in a few cases. The position of signal Tank is transferred from the boat sheet as located by the hydrographic party. The cut that fixes the position of this signal is not recorded thus making it necessary to transfer the signal from the boat sheet. See page 42 Vol. 1 jrw

Control for the 1:5000 sheet of the approaches to the Railroad Dock was established by topography executed on the same scale. Whenever possible, ranges for running sounding lines were used.

On the 1:300 sheet soundings were taken on ranges of each row of piles, the distance off the face of the dock being measured by graduated line.

SURVEY METHODS:

Soundings on all of the sheets were taken by hand lead. Due to the strong tidal currents no soundings were obtained off the dock and approaches except about an hour at each slack.

Soundings taken on the 1:40,000 sheet were obtained by the ship and motor sailer; those on the 1:5000 sheet by motor sailer; and those on the 1:300 sheet by skiff.

COMPARISONS WITH PREVIOUS SURVEYS:

In comparing the present survey north of Fire Island (1:40000) with Chart 8557 the following changes are noted:

The 30 foot curve just southwest of Pt. Woronzof has approached the shoreline about $\frac{1}{4}$ mile nearer than previously shown.

Soundings at the northwest section of the present development show a marked shoaling of that area.

On the 18 foot shoal, $2\frac{1}{2}$ miles west(true) of Pt. Woronzof, the least depth obtained was 20 feet.

CHANNELS:

Two narrow thirty foot channels in the vicinity of Pt. Woronzof were found to exist as shown on the smooth sheet. The nearer one to Pt. Woronzof is perhaps the better one

CHANNELS (Continued)

for use in approaching Anchorage. The axis of the channel north of Fire Island appears to have shifted its position to the southward.

DOCK:

The Railroad Dock is bare at low water thus practically making the dock useless except at high water. From local information no ships of any size have come alongside for a number of years.

Respectfully submitted,

Approved:
J. Williams

John Laskowski, Aid C.&.G.S.

APPROVAL OF CHIEF OF PARTY

Sheet No. 5 has been inspected and is approved by me for the purpose intended. The field and office work were done under my supervision.

If there is occasion for further surveys in this locality it is recommended that the various signals used in the 1930 survey be located by triangulation. In the main, these signals consist of recoverable objects or points that have been thoroughly marked. With definite locations of these signals, the replotted work may be found useful in a study of the rapid changes that are taking place in this locality. The work as plotted at present is considered sufficiently accurate for charting the marked changes revealed in part by this survey.

As only one triangulation station was recovered in the immediate locality, the desired determinations by triangulations could not be obtained. It was near the end of the season when telegraphic instructions were received and time was not available for carrying a triangulation scheme from a distant locality.


F.B.T. Siems, Chief of Party.

STATISTICS
for
Sheet No. 5.

Date	Day	Vol.	No. of Positions	No. of soundings	Statute mi. of sdg. line	Remarks
1930						
Sept, 11	a	2	72	267	3.9	P.M.S.
11	a	4	77	77	.3	Skiff
12	b	2	85	304	8.3	P.M.S
12	b	4	63	63	.2	Skiff
13	A	1	48	293	16.0	Ship
13	c	2	95	342	15.2	P.M.S
13	c	4	14	14	.1	Skiff
15	B	1	81	392	24.0	Ship
15	d	2	131	473	15.7	P.M.S
16	c	1	71	290	9.2	Ship
16	e	3	32	126	4.0	P.M.S
Totals			769	2641	96.9	

DESCRIPTIVE REPORT

to accompany

~~TOPOGRAPHIC SHEET "H"~~

5104

U.S.C. & G.S.S. DISCOVERER

F.B.T.Siems
H. & G.Engr.
Commanding

Scale---1:5000

AUTHORITY:

This survey was made in accordance with Director's telegraphic orders dated September 3, 1930.

LOCALITY:

The sheet covers the area about the Railroad Dock at Anchorage, Alaska.

METHODS OF SURVEY:

The survey was made for the sole purpose of establishing control for the hydrographic party. No attempt was made to include any coast topography.

Since no triangulation points were recoverable in the vicinity, the position of the North Wireless Mast was scaled from Sheet H-4036 and a 600 meter measured base were used as the data to start the survey. For orientation an accurate azimuth to the sun, taken near sunset, was drawn on the sheet. The true azimuth of this line was

METHOD OF SURVEY (Continued)

computed and from the latitude and longitude of the North Wireless Base a projection was fitted to the survey.

A plane table was used to cut in the signals.

SIGNALS:

The signals TENT, YAP, NIT, TRI, and But were marked by driving a 4 in. pipe packed with concrete into the ground about 3 ft. deep. A hydrographic disc was pressed into the concrete. The bench mark established in 1930 by the same party marks the position of signal STACK.

LIST OF PLANE TABLE POSITIONS
(recoverable)

Signal	Latitude	D.M.	Longitude	D.P.	Remarks
Tent	61-14	1166	149-53	135	Marked with disc.
Yap	61-14	670	149-53	299	ditto
Nit	61-14	311	149-53	438	ditto
Stack	61-14	22	149-53	721	Bench Mark #2. 1930
Tri	61-13	1643	149-53	726	Marked with disc.
But	61-13	1224	149-53	727	ditto
Nor	61-13	1200	149-53	202	North Wireless Base
Sou	61-13	1076	149-53	203	South Wireless Base
West	61-13	923	149-54	108	West gable of tin sheathed bldg. approx. west of radio towers.

The DM's and DP's in the above list depend upon the plane table position of North Wireless Mast as scaled from sheet H 4036.

Respectfully,

John Laskowski, Aid C&G.S.

Approved
Williams
Chief of Party

DEPARTMENT OF COMMERCE

AND REFER TO No. 82-DRM

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

May 26, 1931.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 5104

Surveyed in Sept., 1930

Chief of Party, F. B. T. Siems

Surveyed by F. B. T. S., J. A. Bond, R. C. Rowse

Protracted and soundings plotted by J. Laskowski

Verified and inked by J. T. Walker.

1. Control:

Although the signals had been verified by the field party, due to the nature of the control, their positions were rechecked by the writer at the request of Capt. Sobieralski.

The following signals plot slightly south when transferred from topographic sheet E (boat sheet H. 5104) to the smooth sheet H. 5104: Rick, Stack, But, Nor and Sou. The maximum distance is 4 meters, which is believed to be negligible and the positions of the signals were not changed. Signal Nor was the starting point for the topographic sheet. The original source of \odot Nor (the north wireless mast) is H. 4035. The descriptive report for H. 4035 says, "The signals were determined directly on this smooth sheet, by plane table methods, from the plotted triangulation stations."

The distance from the first to second row of piles of the 1:300 scale railroad dock was found to be incorrect by 1.05 m. and this made all the other rows incorrect by an equal amount. To avoid changing all the rows, the first row was moved 1.05 meters to the left and the south end of the dock was moved accordingly.

On the 1:40,000 scale section, no definite information could be found for the positions of signals Beak, Race, and Fire. They are correctly transferred from chart 8557. The position of Fire is probably better than that of Race or Beak.

For the position of signal Tank see the descriptive report, page 2. A cut to signal Tank was found in vol. 1, page 42, which has apparently been overlooked by the writer of the descriptive report. This cut changes the position of Tank in a direction away from the hydrographic work. Its position was not changed as it would not affect the boat positions.

2. Sounding records: The sounding records for this sheet were entirely satisfactory.
3. Protracting: The protracting was excellent. Only three mistakes were found.
4. Soundings: The soundings were penciled in neatly and legibly.

Most of the crossings were good, considering the slope of the bottom. Those crossings which were not in good agreement did not seem to be due to position but to either erroneous tide reducers or, more likely, to erroneous soundings. The current was, no doubt, the cause of some of the discrepancies.

5. Transcript of report written by Capt. Sobieralski with instructions that it be included in this critical report:-

"The survey of the area north of Fire Island shows very radical changes both from the chart and H. 4211. Two lights which were plotted from bearings given in Notices to Mariners were used for signals without any further verification except sun azimuths which do not agree, indicating that either the signals are erroneous or that the sun azimuths are unreliable.

"In view of this uncertainty of position, the small area covered, and the incompleteness of the survey, it is recommended that no corrections be made to the chart, as this change would be covered by the note now appearing on the chart regarding changes in this area.

"The survey of the approaches to the wharf can probably be applied to the charts."

6. Reviewed by J. T. Walker, May 19, 1931.

Inspected: E. P. Ellis

Approved:


Chief, Section of Field Records


Chief, Section of Field Work

Chief, Division of Charts


Chief, Div. of Hyd'y and Top'y

3
16

222

April 10, 1931

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 5104

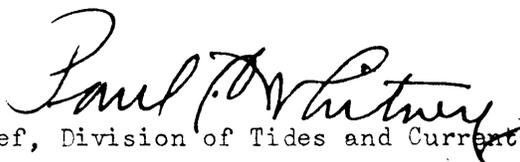
Locality Anchorage Waterfront and North of Fire Id., Alaska

Chief of Party: F. B. T. Siems, in 1930

Plane of reference is mean lower low water, reading
2.4 ft. on tide staff at Anchorage
43.4 ft. below B. M. 9

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.


Chief, Division of Tides and Currents.

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

May 26, 1931.

AND REFER TO NO. 82-DEM

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 5104

Surveyed in Sept., 1930

Chief of Party, F. B. T. Siems

Surveyed by F. B. T. S., J. A. Bond, R. C. Rowse

Protracted and soundings plotted by J. Laskowski

Verified and inked by J. T. Walker.

1. Control:

Although the signals had been verified by the field party, due to the nature of the control, their positions were rechecked by the writer at the request of Capt. Sobieralski.

The following signals plot slightly south when transferred from topographic sheet E (boat sheet H. 5104) to the smooth sheet H. 5104: Rick, Stack, But, Nor and Son. The maximum distance is 4 meters, which is believed to be negligible and the positions of the signals were not changed. Signal Nor was the starting point for the topographic sheet. The original source of \odot Nor (the north wireless mast) is H. 4035. The descriptive report for H. 4035 says, "The signals were determined directly on this smooth sheet, by plane table methods, from the plotted triangulation stations."

The distance from the first to second row of piles of the 1:300 scale railroad dock was found to be incorrect by 1.05 m. and this made all the other rows incorrect by an equal amount. To avoid changing all the rows, the first row was moved 1.05 meters to the left and the south end of the dock was moved accordingly.

On the 1:40,000 scale section, no definite information could be found for the positions of signals Beak, Race, and Fire. They are correctly transferred from chart 8557. The position of Fire is probably better than that of Race or Beak.

For the position of signal Tank see the descriptive report, page 8. A cut to signal Tank was found in vol. 1, page 42, which has apparently been overlooked by the writer of the descriptive report. This cut changes the position of Tank in a direction away from the hydrographic work. Its position was not changed as it would not affect the boat positions.

2. Sounding records: The sounding records for this sheet were entirely satisfactory.
3. Protracting; The protracting was excellent. Only three mistaken were found.
4. Soundings: The soundings were penciled in neatly and legibly.

Most of the crossings were good, considering the slope of the bottom. Those crossings which were not in good agreement did not seem to be due to position but to either erroneous tide reducers or, more likely, to erroneous soundings. The current was, no doubt, the cause of some of the discrepancies.

5. Transcript of report written by Capt. Sobieralski with instructions that it be included in this critical report:-

"The survey of the area north of Fire Island shows very radical changes both from the chart and H. 4211. Two lights which were plotted from bearings given in Notices to Mariners were used for signals without any further verification except sun azimuths which do not agree, indicating that either the signals are erroneous or that the sun azimuths are unreliable.

"In view of this uncertainty of position, the small area covered, and the incompleteness of the survey, it is recommended that no corrections be made to the chart, as this change would be covered by the note now appearing on the chart regarding changes in this area.

"The survey of the approaches to the wharf can probably be applied to the charts."

6. Reviewed by J. T. Walker, May 19, 1931.

Inspected: E. P. Ellis

Approved:

Chief, Section of Field Records

Chief, Section of Field Work