

4695a

4695a

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

....., Director

State: New Jersey

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic

Sheet No. ⁵ 4695a

LOCALITY

Cape May

Cape May Harbor

1928

CHIEF OF PARTY

R.L Schoppe

GOVERNMENT PRINTING OFFICE

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY
L. & A.
MAR 29 1929
Acc. No.

REG. NO. 46952

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.

4695 a
46952

State New Jersey

General locality Cape May

Locality Cape May Harbor

Scale ^{5,000} 1-10,000 Date of survey Oct., 1928

Vessel RANGER

Chief of Party R.L.Schoppe

Surveyed by R.C.Overton

Protracted by G.E.Morris

Soundings penciled by G.E.Morris

Soundings in ~~fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by

Inked by F.G.Erskine

Verified by F.G.E.

Instructions dated May 25 Aug. 30, 1928

Remarks: Supplemental to #4695

DEPARTMENT OF COMMERCE

U.S. COAST AND GEODETIC SURVEY

E. LESTER JONES, DIRECTOR.

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET #4695a

Field No.

4695a

CAPE MAY HARBOR, N.J.

S.S. RANGER

Ray L. Schoppe,
Chief of Party.

1928

DEPARTMENT OF COMMERCE
U.S.COAST AND GEODETIC SURVEY
E. LESTER JONES, DIRECTOR.

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SHEET #4695a,
CAPE MAY HARBOR, N.J.

S.S. RANGER

Ray L.Schoppe,
Chief of Party.

1928

DESCRIPTIVE REPORT

to accompany

SHEET # 4695 - a

CAPE MAY HARBOR NEW JERSEY.

AUTHORITY:

This sheet is surveyed in accordance with orders dated May 23, 1928 and supplemental instructions dated August 30, 1928.

CONTENT:

The sheet covers the same area as sheet #4695 which was surveyed in 1927 by the Steamer RANGER; G.C. Mattison, Commanding. This sheet is not a complete survey. It covers certain areas in Cape May Harbor and is supplemental to sheet #4695.

RESULTS:

Referring to the numbered paragraphs in the supplemental instructions dated August 30th the following is noted:

(2a) Split lines were run as indicated as nearly as possible.

(2b) Through some misunderstanding the cause of which is not known, the hydrographer failed to comply with this paragraph and the omission was not noted until the party had left the working grounds. This failure is regretted and may be due in part to the result of storms.

During the heavy gale of September 19, 1928 the range targets in this area were disturbed and some of the lights were showed for a time from a temporary location. This caused some confusion

at the time when the work on this sheet was laid out. It has since been ascertained that the ranges had all been restored on the date when this work was done.

(2c) The previous sounding of $8\frac{1}{2}$ feet was not found but a depth of 9 feet was found about 20 meters N.W. and 10 feet was found almost at the location of the suspected spot. Three lines were run as close as possible to the position and traces of a lump were found so close to the $8\frac{1}{2}$ foot sounding that it is believed entirely possible that it existed in 1927.

The $9\frac{1}{2}$ foot sounding is on a spot where 10 feet was found this year. It is therefore thought to be correct.

The $10\frac{1}{2}$ foot spot 208 meters WSW from POLE appears to be properly located, as shown by the 9 foot soundings close south of it that were located on a split line. On the 1927 sheet it appears that the sounding of 15 feet close by the $10\frac{1}{2}$ foot spot, is probably in error.

The deep water in the channel leading from the inland passage to the sea is all to the eastward of these soundings and it appears that some of the deeper soundings shown in the 1927 work are the ones that are incorrectly located.

The hydrographer reports that the bottom in this locality is sticky clay and undoubtedly the softer parts are swept put by the strong currents that flow in this channel. This leaves hard lumps with

with steep sides and is the cause of irregular soundings.

(2a) Between the two piers at the Coast Guard Base, is located an unused marine railway. The blue prints on file at the Commandant's office show the track for this railway extending northward and ending at a line joining the extreme ends of the two piers, as noted on this sheet. The sounding of $16\frac{1}{2}$ feet is found close to the north end of this railway and is correct, although the lead line failed to pick it up this year. Close inshore a sounding of $5\frac{1}{2}$ feet is located on this track. It is recommended that if possible, the locations of this railway be shown on the chart. The $8\frac{1}{2}$ foot sounding west of the pier was found the same as in 1927.

(2c) The area covered by both the $18\frac{1}{2}$ foot sounding and the 30 foot sounding were well covered by soundings and the deep holes were not found. The results in 1927 must have been due to faulty reading of the lead line or misplaced positions. Near station (Hydrographic) BUL the soundings fail to show the $3\frac{1}{2}$ foot spot but it has been noted that a few meters west of station BUL the bulkhead is broken through and the surface run off has scoured out a small gully. The zero soundings noted on the 1927 sheet are correct and it is probable that the $3\frac{1}{2}$ foot sounding is correct but it is so small an area that no further work was done this year in searching for it. The $3\frac{1}{2}$ foot sounding is too unimportant to be put on a chart.

This $3\frac{1}{2}$ foot sdg. was erroneously plotted on the smooth sheet as a plus sounding when it should have been a minus sdg. There is no conflict between the 2 sheets.
A.L.S.

(2f) The $3\frac{1}{2}$ foot spot was found as previously located. The $11\frac{1}{2}$ foot spot was not found but a sounding of 12 feet was found 20 meters W x N from it and it is probable that a small spit makes out close to that location. The $8\frac{1}{2}$ foot spot was not found and it is not known whether or not this old $8\frac{1}{2}$ foot spot has any connection with $9\frac{1}{2}$ feet that was found 20 meters NNW from it. This area has been dredged to obtain material for filling the old swamp south of Cape May Harbor (where the Coast Guard Base is now located). Irregular bottom is expected where the dredges worked and strong currents make it almost impossible to obtain closely located soundings at this entrance to Skunk Sound. It may be added that no boats except shallow skiffs were ever seen to use this channel into Skunk Sound. ✓

As noted above, this whole area has been dredged for the purpose of obtaining material for filling adjacent marsh lands. The contractors frequently dug to considerable depth in soft places and in spite of inspection, they failed to dig to a uniform depth, the hard lumps. Any system of depth curves will be irregular for that reason. There is a further tendency to change of depth due to strong currents near the entrance to the inside Waterway. These changes are noticeable after severe storms and it is not known whether the same conditions exist now, that were present in 1927. ✓

The sounding launch was in charge of R.C.Overton, Mate.

A table of statistics follows.

Ray L. Schoppe

Ray L. Schoppe,
Chief of Party.

STATISTICS SHEET #4695a

CAPE MAY HARBOR, N. J.

Date	Letter	Vol.	Miles.	Sdgs.	Posi.	Boat.
10-25-28	a	1	1.5	208	39	Motor Dinghy
10-27-28	b	1	3.7	323	75	" "
10-29-28	c	1	3.5	460	87	" "
			<u>8.7</u>	<u>991</u>	<u>201</u>	

April 10, 1929

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
One volume of sounding records for

HYDROGRAPHIC SHEET 4695a

Locality: Cape May Harbor, New Jersey

Chief of Party: R. L. Schoppe in 1928

Plane of reference is Mean low water, reading

2.3 ft. on tide staff at Cold Spring Inlet (C. G. Sta.), N. J.
~~ft. below B. M.~~

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.

Paul C. Whitney

Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4695a

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet 201 . .
Number of positions checked 155 . .
Number of positions revised 8 . .
Number of soundings recorded 991 . .
Number of soundings revised 178 . .
Number of signals erroneously
plotted or transferred . . . 0 . .

Date: May 29 1929
Cartographer: Frank G. Perkins

SECTION OF FIELD RECORDS

Report on ship # 4695^a
 Chief of Party - R. L. Schoppe
 Protected by - H. E. Morris
 Temporarily aided by - F. H. Eskins

Surveyed in 1928
 Surveyed by R. C. Overton
 Soundings plotted by H. E. Morris

1. With a few exceptions the sounding records were clear. On two occasions (at positions 20-30 and 22c-23c) the note "line under" was recorded but the soundings continued to "line begins". On another place, 34^b, soundings were taken at regular intervals beyond the position. (No soundings were taken between 33 + 34.) These soundings cannot continue to 35 due to distance and other things. Apparently they were taken ~~to~~ in an attempt to locate the shoaler spot, but on the boat sheet no sounding was plotted on the line between 33 + 34, running from 34 to 33. There is a buoy about 300 meters southwest of A Pole. The type of this buoy was not recorded in the sounding volume. Over two thirds the work was done with very irregular time intervals.

2. The plotting was good. A little more than 75% of the positions were checked, due to the character of the survey and only 4% of the total had to be changed.

3. The plotting of soundings was fair. About 18% had to be replotted. All of the errors were due to spacing. As noted in "1", very irregular time intervals were used. It was not infrequent to have the following type of spacing: "4, 6, 15, 9, 3, 7, 18, 4, 5". The general interval and variation

- was about "7" to 15". From this it can be readily seen that slips in spacing could be easily made. Also there are numerous interlocking lines. When the sheet was received it was scarcely possible to read the soundings in these shoul areas due to the congestion of the soundings.
5. The sheet was fairly clean and about as legible as could be expected, as explained in "4".
 6. The drafting conformed to the General Instructions.

Respectfully submitted

— Frank G. Perkins

May 29, 1929

* These soundings involved in these portions were omitted. The file is too sensitive to give a good determination. A.L.S.

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

June 28, 1929.

AND REFER TO No. 11-DEM

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4695^a

Cape May Harbor, New Jersey

Surveyed in 1928

Instructions dated August 30, 1928 (RANGER)

Chief of Party, R. L. Schoppe.

Surveyed by R. C. Overton.

Protracted and soundings plotted by G. E. Morris.

Verified and inked by F. G. Brakine.

1. The work covered by this sheet is in the nature of investigation of several doubtful looking soundings on the 1927 survey (H. 4695). Each one will be treated in subsequent paragraphs and final disposition made.

a. The 16 1/2 foot spot (from H. 4695) in lat. 38° 56' 1811.7 m., long. 74° 53' 408.7 m. should be retained. While it was not found on the new survey, the definite statement in the descriptive report by the Chief of Party, that the sounding does ~~not~~ exist, is sufficient argument for its retention. The additional soundings taken in the vicinity of the docks agree in general with the soundings on the 1927 survey. There are some differences of a foot or two, but such errors may be due to a slight displacement of some of the lines on account of the inaccuracies inherent in a large scale survey. The compiler should have no difficulty in coordinating the two surveys. Greater weight should be given the later survey unless otherwise noted in this report. *ams.*

The 8 1/2 foot sounding (from H. 4695) in lat. 38° 56' 1709 m., long. 74° 53' 547 m. was found to be a few meters further inshore. This position should be accepted as correct since it appears that on the 1927 sheet no allowance was made for the turn of the line. Had this been done, the 8 1/2 foot sounding would have been pulled inshore slightly. *ams.*

b. There are 3 soundings on H. 4695 at the entrance to Skunk Sound that were to be investigated. These should be disposed of as follows:

1. The 8 1/2 foot spot should be retained. The existence of a shoal here is substantiated somewhat by a 15 foot sounding close by on the original survey. The new survey does not negative the existence of this shoal as far as the 15 foot sounding is concerned, although immediately over the 8 1/2 foot sounding a 28 1/2 foot sounding was obtained. A slight displacement of the soundings might, however, account for this coincidence. It is thought that inasmuch as dredging operations have been going on here, the existence of such lumps is not improbable and it should therefore be retained.

✓ *ams.*

2. The 3 1/2 foot sounding on the west side of the entrance should be omitted. The 3 1/2 foot spot mentioned in the Descriptive Report (page 4, paragraph 2 f) as found on the new survey, refers to a 3 1/2 foot sounding on the east side of the entrance. This sounding was not questioned on the 1927 survey and the specific instructions, paragraph 2, f refer to the one on the west side.

✓ *ams*

The new survey shows 12 feet over this spot and it is believed that had a proper allowance been made on the original survey for the turn of the line, the 3 1/2 foot spot would have been thrown inshore.

3. The 11 1/2 foot sounding about 20 meters south of the above 3 1/2 foot sounding should be retained. While it is on the same line as the 3 1/2, and following the above reasoning would also be pulled further inshore and close to a 12 foot sounding on the new survey, it should not be given the same treatment, since no soundings were obtained on the new survey in the immediate vicinity and there is some evidence of a spit making out toward it. Otherwise the two surveys in this vicinity can be readily combined.

✓ *ams*

c. The 18 and 30 foot soundings (from H. 4695) in lat. 38° 57' 347 m., long. 74° 53' 21 m. should be omitted in view of the depths found on the new survey. While there is a possibility that these soundings may exist, no great harm is done by omitting them. They have no practical value.

✓ *ams*

d. The 18 1/2 foot sounding (from H. 4695) in lat. 38° 57' 339 m., long. 74° 52' 1078 m. is sufficiently disproved by the new survey and should therefore be omitted.

✓ *ams*

In other instances in this vicinity where the two surveys cannot be reconciled, preference should be given to the latter one (H. 4695a).

- e. The 3 1/2 foot sounding at \odot Bul (from H. 4695) which was required to be investigated by the specific instructions (paragraph 2,e) was not found. An examination of the original records discloses that the sounding was plotted erroneously on H. 4695 and should have been minus 3 feet instead of plus 3 1/2 feet. ✓
Amos
- f. The 8 1/2 foot sounding (from H. 4695) in lat. 38° 57' 245 m., long. 74° 52' 774 m. and the 9 1/2 foot sounding in lat. 38° 57' 187 m., long. 74° 52' 800 m. were not found on the new survey, although 9 and 10 foot soundings respectively were found 15 to 20 meters away from the above soundings. As a new survey is recommended for this area, for the reasons mentioned below, no final disposition of these soundings will be made at this time.

2. Attention is called to the following important discrepancy existing between the survey of 1927 and the present survey:

In the vicinity of buoy No. 4 (shown on H. 4695a) at the turn of the channel, the new survey shows 11 to 16 feet where the 1927 survey shows 21 to 24 feet. The 18 foot curve has shifted fully 50 meters to the southwest, materially changing the location of the channel. Furthermore, where the 1927 survey shows soundings of -1 foot close to the south shore, the new survey shows depths of 13 to 19 feet. Whether the deep soundings close to shore and the shoal soundings to the westward of the buoy are in error is not known. There is some indication, from an inspection of the trend of the 12 foot curve, that a scouring might have taken place near shore and at the same time causing the shoal near the buoy to build out considerably. On the other hand, it is quite probable that there has been no change here at all, and that the two lines on the new survey (43 b to 46 b, and 47 to 49 b) are out of position. The fix used for these positions (Chim-Tel-Pole) is a weak one, and a slight difference in one of the angles, or a failure to take cognizance of the difficulties that inhere in applying small scale survey methods to large scale surveys, may cause a considerable displacement in the lines. It is the writer's belief that this is the cause of the discrepancy, and that it is not due to any radical changes in the configuration of the bottom. This view is borne out by the survey made in June, 1928 of the area outside of Cape May Harbor (H. 4875) on which two lines were run in the channel near buoy No. 4. These lines were plotted on the 5,000 scale sheet and the soundings agree well with the 1927 survey. It is inconceivable that so radical a shift in the channel could have taken place between June, 1928 and Oct. 1928, the date when H. 4695a was surveyed, unless caused by the heavy storm of Sept. 1928.

Inasmuch as no satisfactory solution is possible by the use of the ordinary office methods, and since other discrepancies exist in this vicinity between the two surveys, that cannot be reconciled, it is recommended that an entire new survey be made of the area covered by this sheet eastward of longitude 74° 53'. The survey, if possible, should be made at slack water to eliminate the effect of currents on the soundings, or if this is not practical, the lines should be run with the current only. In the execution of the survey care should be taken to see that the two observers are close together in the boat and as near to the leadsman as possible and that the recorder note the actual time when the lead reaches bottom even though the difference from the regular interval is but a few seconds. Unless such care is taken inaccuracies are bound to creep in. Weak fixes should be avoided and the fix Chim-Tel-Pole should not be used when sounding in the vicinity of buoy No. 4. If a shoaling near this buoy is found to have taken place, the full extent of such change should be determined. Soundings should be taken on the range leading into the Inland Passage. These were omitted on the 1928 survey for reasons noted on page 1 of the descriptive report.

Q Top should be relocated. There is some question as to its proper position. The 1927 topographic sheet shows the station inked in about 15 meters southwest of a prick point. This inked position was used on the 1927 hydrographic survey. The descriptive report for the topographic sheet, however, gives the D.M. and D.P. of this station corresponding to the prick point and this position was used on the 1928 hydrographic survey. There are thus two positions for apparently the same point. This matter should be cleared up.

3. In conclusion it should be said that many of the difficulties experienced in the office in the handling of field sheets are traceable directly to the failure of field parties to make adequate comparisons with previous or contemporary surveys, and to see that no radical differences occur. Had this been done on the present sheet, the important change around buoy no. 4 would have been noted and sufficient additional work done either to verify or disprove it. The delay and expense of a new survey would have thus been saved.
4. Reviewed by A. L. Shalowitz, July, 1929.

Approved:


 Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. & T.)

File