Signed

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Form 504
Ed. June, 1928

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

State: New Jersey

DESCRIPTIVE REPORT

Topographic / *Hydrographic* } *Sheet No.* 5300 1

LOCALITY

~~Shark River~~

Avon by the Sea,

New Jersey

19 33

CHIEF OF PARTY

Philip C. Doran

U. S. GOVERNMENT PRINTING OFFICE: 1931

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET "1"

SHARK RIVER, NEW JERSEY

AUTHORITY

This work was done under Director's orders and instructions dated Feb. 10,1933.

SURVEY METHODS

Triangulation control was established. A topographic survey of this area was made and signals for hydrography located. Standard sextant fixes were used for position finding. Soundings were with hand lead. The lead line, which was received from the office,was not very satisfactory as the metal core broke in many places and protruded through the outer covering. Lead line was tested before and after work each day and the correction noted and applied .

DANGERS

A number of piles, awash at low water, are under the south span of the highway bridge at the mouth of the river and extend both sides of the bridge as shown on the topographic and hydrographic sheets. The southerly span should not be used for entering or leaving Shark River.

A shoal just west of the entrance to the propeller shaped boat basin has very little water on it- one half foot in various places - and covers a good sized area.

In the large bay west of the bridges there is very little water. A patch 200 meters south of the south end of Shark River Hills Inc. development bares ½ foot at M.L.W.. Another small patch 100 meters east of the bend in bulkhead east of hotel building bares at M.L.W.. The west end of the fill which divides the river into two bulkheaded channels is not bulkheaded and extends about 250 meters to the west of the high water line.

Depths of up to 17 feet are next to depths of 1½ and 2 feet in this inner bay due to the fact that a lot of the land has been filled in by dredging the bottom of this bay. As no definite system was used for dredging, no connected channel has been made but a spotted uneven bottom has resulted. Further dredging is to be done in this area.

CHANNELS

The first half mile of Shark River west from its entrance to the sea is,more or less, a bulkheaded channel varying in width from 70 meters at the seaward bridge to about 260 meters at the new bridge being built between the main streets of Belmar and Avon.

The bar at the mouth of the jetties has a least depth of 8 feet 150 meters east of the center of the entrance, but a course of 306 true,heading for the center of the draw span in the bridge will just carry 10 feet. As this course is flanked on either side with 8½ and 9 foot spots and as the tidal currents are very strong at the entrance it is not advisable to attempt to enter with any greater draft than 7 feet. As 7 feet is the controlling depth beyond the bridge there would be little value of bringing in anything over 7 feet.

The seaward bridge has a bascule lift at the north end.

This gives 50 foot width clear. There is 9 foot clearance under the spans at high water.

A depth of 7 feet can be carried from the seaward bridge to the small docks the the N.E.. edge of the big highway bridge now under construction, due attention being given to the shoal on the south side just west of the old boat basin.

Six (6) feet can be taken beyond this point up the north arm of the river but at present this way is blocked by a section of old highway bridge which has a clearance of 3 feet at high water. This section of bridge will be removed after the new bridge is completed. A 6 foot clearance is available at the R.R. trestle bridge and 10 feet at the Neptune Highway bridge. Deep water extends to the end of the bulkhead on the north arm.

A very small channel to carry 4 feet runs from the larger dock at the N.E. side of highway bridge to the westerly of two docks on the south side of the river. In the south arm of the river 3 feet can be carried west to the R.R. bridge with 6 feet clearance. Deep water extends to the end of the bulkhead on the south arm of the river.

Very strong tidal currents were noticed and must be watched when moving in the river. The entrance is choppy when wind and tide are in opposition.

PREVIOUS SURVEYS

A satisfactory junction was made with old surveys in deep water. No previous survey had been made of the river.

LANDMARKS FOR CHARTS

A list of landmarks for chart is made part of the report. Form 567 ~~is attached hereto.~~ filed with Descrip Report T. 4747

HYDROGRAPHIC STATIONS

A description of natural objects located by topography and may be recoverable for future work is given on sheet attached hereto. These objects are not marked in any way but look as if they would remain in place for some time.

TIDAL DATA

A sheet of TIDAL DATA is attached to this report.

STATISTICS FOR SHEET, FIELD NO.1.

Number of positions..... 461
Number of soundings..... 2581
Statute miles of sounding lines..... 34.2

Respectfully submitted,

Philip C. Doran

Philip C. Doran,
H and G. Eng..

DESCRIPTION OF NATURAL OBJECTS LOCATED BY

TOPOGRAPHY AND MAY BE RECOVERABLE FOR FUTURE WORK.

MAC	Southerly of four large radio towers.
RAD	Second tower from the south end.
NED	Green roofed summer pavilion.
PAR	Small summer pavilion.
COM	N.W. corner of concrete bulkhead with high wire fence on top.
LET	Small flagpole.
WHY	Large white door in side of bank.
HAT	Coast Guard house inside inlet.
GAT	Watch tower at drawbridge at Ocean Ave..
UP	Small summer pavilion.
STA	Similar to UP.
DUB	Cupola with double windows on large house..
MON	End of pier.
HOT	Main entrance to hotel.
EGG	S.E. corner of house on beach.
NEW	Very large flagpole- outlet for septic tank.

This list is made part of the topographic and hydrographic descriptive reports to accompany sheets covering the Shark River, New Jersey, area.

TIDAL DATA

FOR HYDROGRAPHIC SHEET NO. "1"

SHARK RIVER , NEW JERSEY

As instructed by the tides section, an automatic portable tide gage and staff was established just inside the jetties at Shark River Inlet, New Jersey. A 15 day series was compared with Atlantic City. A staff was placed just west of the Neptune Highway bridges in both the north and south channel of the river. Another staff was placed 100 metere east of the southerly bulkheaded point of the Shark River Hills Inc. development. Two (2) days comparisons were made between these inner staffs and the outside gage.

The gage readings were used for tide reducers up to the new highway bridge. The channel staffs were used for soundings in the channels between the highway bridge and the inner bay. The hotel staff was used for soundings in the inner bay. Very little difference was found between all the inner staffs.

The plane of reference was mean low water. The readings on the various staffs for mean low water were:

Hotel - 2.4 to Mar. 27. 3.32 after Mar. 27.
N.Channel - 1.50 to Mar. 27. 2.56 after Mar 27.
S.Channel - 1.44 all the time.
Tide Gage - 2.39 all the time.

Highest tide at gage..... 8.1 ft. (staff)
Lowest tide at gage..... 0.9 ft. (staff)

Proper benchmarks were established as directed in the manuals. These benchmarks were connected to a first order level benchmark -V 5 - New Jersey.

The direction and strength of the wind had a marked effect on the tide in the inner bay.

Philip C. Doran.
H and G. Eng..

Section of Field Records

Report on H-5300
Chief of Party. P.C. Doran
Protracted by. P.C. Doran
Verified and inked by. P.H. Scherr

Surveyed in March 1933
Surveyed by. P.C. Doran
Soundings plotted by. P.C. Doran
Topography inked by Field Party.

1. The records conform to the requirements of the General Instructions. However there are too few bottom characteristics given, not enough for a clear description of the bottom of the entire sheet.

2. The usual depth curves can be drawn.

3. The field plotting was completed to the extent prescribed in the General Instructions.

4. The office draftsman did not do over any part of the Field party drafting.

5. Chief of Party Doran makes note in the report that the junction of the sheet with H 3773 was satisfactory. This was investigated but no overlapping of soundings by the verifier was made.

6. The recorder used half foot reductions throughout the records which were, however discarded except in a few critical places at the mouth of the river.

Mr. Doran calls attention to a shoal spot of 5 feet (P. 21 - Bk 1.) giving his belief that an error had been made, citing a previous survey by New Jersey State as substantiating his claim. This sounding was left in pencil

7. The field drafting was fair with good protracting

Respectfully submitted

Paul H. Ickes

October 24. 1933.

SECTION OF FIELD RECORDS
Review of Hydrographic Sheet No. 5300.
Shark River and Approaches, Coast of New Jersey.
Surveyed in 1933.
Hand lead soundings.
Instructions dated Feb. 10, 1933 (Lieut. P. C. Doran).

Chief of party - P. C. Doran.
Surveyed by - P. C. D.
Protracted and soundings plotted by - P. C. D.
Verified and inked by - P. H. Scherr.

1. The records conform to the requirements of the Hydrographic Manual except that not enough bottom characteristics were entered. A list of prominent objects on form 567 is filed with the descriptive report of T. 4747.

2. The plan and extent of the survey satisfy the specific instructions.

3. The crossings of sounding lines and agreement of adjacent lines is only fair due apparently to the lumpy, uneven character of the bottom. In the bay west of the bridges, where dredging and filling in has been in progress, the bottom is generally shoal with a number of deep holes but no connected channel. Dredging is to be continued in this area.

The entrance channel is also somewhat irregular. A sounding of 5 feet, at pos. 13b, between signals Tel and Hat, has been questioned by the Chief of Party who believes it should be one fathom deeper. As there are depths of 6 and 7 feet very close to this spot and as there is a check mark in the record opposite the sounding, indicating it was O. K'd at the time obtained, it is not believed there is enough evidence for rejecting this sounding in an area so broken. The 5 foot sounding was retained. Another sounding of 5 feet between pos. 17f and 18f about 60 meters S.E. of signal End and a sounding of $\frac{1}{2}$ ft. between pos. 18f and pos. 19f about 100 meters S.W. of signal Nat, appear of enough importance to have warranted further investigation.

4. The usual depth curves can be drawn fairly completely.

5. There is no previous survey in this area. The offshore junction with the old survey of 1915, H. 3773 is satisfactory.

6. Depths which may be carried into the various channels are fully and accurately described in the descriptive report.

The survey is thought to be fairly complete inside the river, but the development of the bar outside the entrance is not close enough to give assurance that there are no shoals on the bar. The area is quite lumpy and there are several blank spaces of approximately 75 meters between lines in depths of $8\frac{1}{2}$ to 12 feet.

7. Additional work.

A re-examination of the entrance bar is recommended.

A further investigation of the three critical soundings, described in par. 3, is also recommended.

8. Reviewed by R.L. Johnston.

An inspection of this sheet shows that the scale is inadequate for the survey required. The scale should be large enough to enable the plotting of lines at 20 meter intervals without confusion in order that the hydrographer may know that he has covered the area. It may be necessary to depart from the usual method of 3 point fix and adopt a different system for control of the sounding lines. It is recommended that the channels and the bar be resurveyed on a scale of at least 1/2,500. L.O.C.

L. O. Colbert.

L. O. Colbert,
Chief, Field Records Section.

* J S Borden

Chief, Field Work Section.

* This bar and entrance Channel change rapidly. Local knowledge is required - A large scale survey such as indicated in the last paragraph would, in my opinion, be an unnecessary refinement to the data and would doubtless be obsolete before it was ever appreciated as a chart. J S B

Examined and approved:

Chief, Division of Charts.

** G T Rude

Chief, Division of H. & T.

** I do not concur in the statements in last paragraph, except that a scale of 1-5000 would have been better at the time. I do not think that the importance of the area warrants a resurvey at the present time. G T R

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 5300

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

Number of positions on sheet	461
Number of positions checked	47
Number of positions revised	.....
Number of soundings recorded	2581
Number of soundings revised	3
Number of signals erroneously plotted or transferred	.....

Date: October 23 1933

Cartographer: Paul H. Scherr

Form 537
Ed. Sept., 1929

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. 1

REGISTER NO. 5300

State New Jersey

General locality Atlantic Coast

Locality Shark River and Approaches

Scale 1 : 10 000 Date of survey March, 1933

Vessel Shore Party with hired launch.

Chief of Party Philip C. Doran

Surveyed by Philip C. Doran

Protracted by Philip C. Doran

Soundings penciled by Philip C. Doran

Soundings in ~~fathoms~~/ feet

Plane of reference Mean Low water

Subdivision of wire dragged areas by

Inked by Paul H. Scherr

Verified by Paul H. Scherr

Instructions dated Feb. 10, 1933, 19

Remarks:

U. S. GOVERNMENT PRINTING OFFICE: 1930