3076

Diag. Cht. 1218-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 3076

LOCALITY

State Delaware

General locality Speed Trial Course

Locality .....

~~1940~~ 1910

CHIEF OF PARTY

P. A. Welker

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DATE .....

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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

O. H. Tittmann
Superintendent.

State: Delaware

DESCRIPTIVE REPORT.

Hydrographic *Sheet No.* 3076.

LOCALITY:

Speed Trial Course of the United States Navy, off Delaware Breakwater, and off Cape Henlopen.

1910.

CHIEF OF PARTY:

P. A. Welker, Assistant.

3076

FORM 65.—Field Letter.

Post-Office Address: Coast and Geodetic Survey, Washington, D. C.

Telegraph Address:

Express Office:

3076

Department of Commerce and Labor

COAST AND GEODETIC SURVEY

11—6-4

Washington, D. C.,

May 21st, 1910.

Mr. O. H. Tittmann,

Superintendent, Coast and Geodetic Survey,

Washington, D. C.,

Sir:

In obedience to "Instructions and Memoranda for Descriptive Reports, 1887", I beg leave to submit the following report on Hydrographic Sheet No. 3076:

1. This sheet is on a scale of 1:20,000. The work represented was executed during portions of the months of March and April, 1910, and comprises a hydrographic survey of the locality about the speed trial course of the United States Navy, off Delaware Breakwater, and a hydrographic examination of the locality about the point at Cape Henlopen.

2. The hydrographic survey of the speed trial course was made at the request of the Secretary of the Navy. According to information received, it was desired that the depth of water should be accurately

known in order that comparative trials might be made over various courses for the purpose of determining the effect of water upon the speed and power developed. It was, therefore, realized that greater care was required than would ordinarily be used for making a survey for navigational purposes only. Considering the depth of water, 25 fathoms and more, and the strength of current, from 1 to 3 Knots per hour, it was decided that it would be best to use a forty (40) pound lead, with trolley system for dropping the same forward and reading the line aft. The effect of the current in bowing the line and sweeping it from the perpendicular would have been very great if a lead much lighter had been used. The currents in the locality are very strong and on account of frequently passing through tide rips, it was rather difficult to run sounding lines close together, but, as each sounding was located by angles of position the work was accurately plotted.

3. All soundings were reduced to mean low water by reference to the tidal bench mark of the U.S. Engineers, 1½ miles northeast from Lewes, Delaware, which was established by a long series of observations. Soundings were obtained at intervals of two (2) minutes and a location of position was made for each sounding by the

observation of simultaneous sextant angles upon objects determined by theodolite and planetable triangulation.

4. The limits of the survey off the point at Cape Henlopen were under ordinary conditions within the lines of breakers and in a locality where the tide rips were very strong. The hydrographic survey, therefore, could be executed only under the most favorable circumstances, which was within one half hour or one hour of the time of slack water and when the sea was smooth. The locality is so dangerous that no vessel, of even low draft, should pass inside of the line between the bell buoy and the black spar buoy.

5. The steamer Endeavor was used while engaged in this work and headquarters were made at Lewes, Delaware. The inner breakwater afforded good shelter during stormy weather. The holding ground in this locality was excellent. Fresh water could be obtained at the railroad wharf at a moderate price and a limited amount of coal could also be obtained, but the quality was not good and the price was high. About 1½ miles northeast of the town was a quarantine station where medical attendance could be obtained. There were no means for machine shop work or repairs of vessels anywhere in the vicinity. The wharves at Lewes are not well sheltered from winds anywhere

from northwest to northeast and when heavy winds are expected from anywhere between these directions it is not advisable to remain there. The currents are very strong and with the wind from the same direction as the current it is rather difficult for a vessel to get away from the wharf.

6. The stretch of land between the Town of Lewes and Cape Henlopen is largely composed of shifting sand dunes.

7. About one mile to the northeast of the Town there are several large factories at which oil and fertilizers are prepared from fish. The odors coming from these factories are very strong and very disagreeable.

8. A report of the character that is usually submitted for hydrographic sheets seems to apply in a very limited manner to the work of the class that is represented upon this sheet and no further descriptive report seems necessary.

Very respectfully,

P. A. Welker,

Assist., C. & G. Survey.

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I respectfully request that the proper title for this sheet be furnished at the Office, as it may require some special form for the use of the Navy Department.

P. A. Walker.

Assistant, Coast and Geodetic Survey,

Commanding C.& G.S.S.ENDEAVOR.

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TABLE OF STATISTICS

SPEED TRIAL COURSE

DELAWARE BAY

DELAWARE

Date 1910.	Letter.	Vol.	Soundings.	Angles.	Miles.	Boat.
Mar. 22	A	1	244	468	23.0	"ENDEAVOR"
" 23	B		82	158	6.0	"
" 25	C		105	202	8.7	"
" 26	D	2	227	450	20.3	"
" 28	E		198	386	19.8	"
" 29	F	3	58	114	6.3	"
" 30	G		110	202	11.0	"
Apr. 2	H		218	436	24.3	"
Totals :-			1242	2416	119.4	

VEC
Oct.16,1911.

HYDROGRAPHIC SHEET 3076.

Vicinity of Harbor of Refuge and Cape Henlopen, Delaware, by Asst. P. A. Welker in 1910.

TIDES.

	Government Pier ft.
Mean low water, or plane of reference on staff	6.6
Lowest tide observed " "	3.6
Highest " " " "	15.1
Mean range of tide	4.4