

5647

U. S. COAST & GEODETIC SURVEY
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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. 7
Hydrographic

State NEW JERSEY

LOCALITY

RARITAN RIVER

1934

CHIEF OF PARTY

E. R. MCCARTHY

5647

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. 7 5647

REGISTER NO.

State NEW JERSEY

General locality RARITAN RIVER

Locality _____

Scale 1:10,000 Date of survey October, 19 34

Vessel Field Party No. 14

Chief of Party E. R. McCarthy

Surveyed by R. A. Philleo, T. R. Felts

Protracted by S. M. Green, Jr.

Soundings penciled by S. M. Green, Jr.

Soundings in ~~fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by _____

Inked by Miss H. M. Brinkley

Verified by John W. Parsons, Mr. Bissel

Instructions dated May 10, 19 34

Remarks: _____

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET NO. "7".

AUTHORITY:

Instructions from The Director, dated May 10, 193~~5~~⁴. ✓

LIMITS:

Raritan River with exception of areas sounded by the U. S. Engineers. Includes old South River to Sayreville Highway Bridge and approaches to Raritan River west of New York and New Jersey Channels. ✓

METHODS AND EQUIPMENT:

All soundings were taken with either the standard hand lead line graduated to fathoms and feet or a wooden pole graduated to feet and half-feet. The use of the latter was restricted to depths of less than 2 fathoms maximum and as a rule was not used in depths over 8 feet. Positions were obtained by the customary 3-point sextant fixes on either triangulation or topographic signals, except that in some of the narrow creeks making off from the main rivers, positions were obtained by direction and distance to a single signal or to some topographic feature. (Topographic detail for this sheet was furnished by the air-photo compilation party of Lieut. R. C. Bolstad.) ✓

For work in the river a 22' sea skiff of a type common to the locality and a specially rigged shoal draft sea sled were used. ✓

DISCREPANCIES:

The lines cross quite well except in the cross lines defining the limits of the Raritan River Channel. In this area, however, a slight shift in the line would make the crossing good. The junction with Sheet No. 4 is good. ✓

DANGERS:

There are a number of wrecks and abandoned boats within the limits of the sheet. These are largely concentrated in "graveyards" located in shallow water and are known to local small boat operators. ✓

The location of these graveyards are: (1) south of Perth Amboy, and (2) either side of the Pennsylvania Railroad Docks at South Amboy inside of the six foot curve. The wrecks themselves are usually bare at low water and covered at high water and are in areas where there is little or no small boat traffic. ✓

COMPARASIONS WITH PREVIOUS SURVEYS:

The sheet was compared with Chart No. 375 which shows that shoaling has occurred in the area between the channels east of the mouth of the river and also in the South River. ✓

The sheet was compared with the U. S. Engineer soundings in the junctions of the New York and New Jersey Channels and in the South Amboy Channel to the Railroad Bridge and the surveys seem to check quite well. There is a displacement on the east side of the Cutoff Channel which is probably due to an incorrect location of that channel. ✓

DREDGING ACTIVITIES:

The method used in the disposal of spoil from the Cutoff Channel was to load it on barges and dump it in a basin east of the Memorial Bridge where a sucker dredge picked it up and pumped it on the marshes west of the bridge. The engineers surveyed the basin before and after the disposal of the spoil and this area was not surveyed as the dredge was there at the time of the survey, but had completed its work. ✓

Dredging was being carried on in the proposed anchorage basin south of Wards Point. ✓

CHANNELS:Main Channel, Raritan River:

The principal channel within the limits of the sheet is the dredged channel which is maintained by the U. S. Engineers from Raritan Bay to the east entrance of the Delaware & Raritan Canal. The channel had not been surveyed by the Engineers from the Railroad Bridge to the junction of the main channel with the South Channel to Crossman's Dock since 1912 so was re-surveyed. The controlling depths in the area surveyed are 22' to the Memorial Bridge and 16' to the South Channel. The controlling depths for the area surveyed by the Engineers may be determined from the blueprints. ✓

The channel is used but little and then by nothing larger than a tug drawing ten or twelve feet with a tow. It is well lighted and buoyed. ✓

Cutoff Channel:

The channel was dredged recently and has a controlling depth of 20 feet. ✓

South Channel:

This channel has recently been dredged to Crossman's Dock from a junction with the main channel at Keasby. A new plant is being built to the east of Crossman's Dock, which plant also ✓

proposes to use the channel. The old channel west of Crossman's Dock which was formerly maintained at $3\frac{1}{2}$ feet is no longer kept up and as it is not marked should not be attempted without local knowledge. The south channel to Crossman's Dock is used by tugs and tows and is well buoyed.

Washington Canal:

The canal is a cutoff between the Raritan River and Sayreville and was surveyed by the Engineers.

South River:

Above Sayreville Highway Bridge the river has been recently dredged to the dock of the South River Sand Company. Below Sayreville the river has filled in since the Washington Canal and Cutoff Canal have been dredged and has little importance. The Channel is narrow and has shoaled to three feet at the mouth. It is not used.

Delaware & Raritan Canal:

The canal has been closed to navigation and is no longer used. The locks and equipment have been allowed to run down and are in very poor shape.

New Jersey Power & Light Company:

Twenty feet may be carried to the bulkhead of the Jersey Central Power & Light Company east of the Railroad Bridge at South Amboy. It is not marked.

ANCHORAGES:

There are no anchorages within the limits of the sheet except the basin which was at the time of the survey being dredged on the west side of the New York and New Jersey Channels south of Wards Point.

The area north of the entrance to the Delaware & Raritan Canal is used as an anchorage by pleasure boats and small yachts.

COMPLETENESS OF SURVEY:

The survey is considered complete except that due to an inexperienced leadsman and not sufficient supervision on the sheet, there are a number of missed soundings on the lower section of the South River and in the Raritan River in the vicinity of the Victory Bridge, which should have been filled in.

The docks of the Pennsylvania Railroad at South Amboy should have been further developed.

IMPORTANCE OF AREA:

The area covered by the sheet is not used to any great extent by shipping. The Raritan River is not used except for tugs with tows of sand or brick and an occasional shoal draft freight steamer. The Pennsylvania Railroad docks are also used only by tugs and barges. At present there is but little industrial activity at Perth Amboy, South Amboy or New Brunswick.

MISCELLANEOUS:

Landmarks are forwarded with the topographic sheets.
Statistics and tidal notes and computations are attached.

Respectfully submitted,

E. R. McCarthy

E. R. McCarthy,
Lieut.(j.g.) C&GS,
Chief of Party No. 14.

MEMORANDUM BY CHIEF OF PARTY:

The boat sheet and records were examined at infrequent intervals as due to the closing of the season it was not possible to give the sheets the close supervision necessary.

E. R. McCarthy

E. R. McCarthy,
Lieut.(j.g.) C&GS,
Chief of Party.

STATISTICS

PROJECT 174 NEW JERSEY

SHEET #7

DAY	DATE	BOAT	MILES STATUTE	SOUNDINGS	POSITIONS	DAYS RUN
a	10-1-34	sea-skiff	9.6	382	77	16.8
b	10-2-34	sea-skiff	16.8	709	150	21.6
c	10-3-34	sea-skiff	18.3	724	149	26.2
d	10-4-34	sea-skiff	13.2	513	124	21.2
e	10-5-34	sea-skiff	11.9	456	99	23.2
f	10-29-34	sea-skiff	9.9	397	57	25.1
g	10-30-34	sea-skiff	12.8	529	130	22.9
h	10-31-34	sea-skiff	<u>10.8</u>	<u>413</u>	<u>110</u>	<u>38.2</u>
		Totals	103.3	4123	896	195.2

STATISTICS

PROJECT 174 NEW JERSEY

SHEET #7

DAY	DATE	BOAT	MILES STATUTE	SOUNDINGS	POSITIONS	DAYS RUN
<i>a</i>	10-19-34	skiff	5.5	217	44	6.4
<i>b</i>	10-24-34	skiff	<u>11.9</u>	<u>495</u>	<u>123</u>	<u>14.2</u>
		Totals	17.4	712	167	20.6

200

April 25, 1935

Division of Hydrography and Topography:

FD

✓ Division of Charts: Attention: Mr. E. P. Ellis

Tide Reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 5647

Locality Raritan River, N. J.

Chief of Party: E. R. McCarthy in 1934

Plane of reference is

- 1.5 ft. on tide staff at South Amboy
- 13.0 ft. below B.M. 1
- 1.3 ft. on tide staff at Crossman's Dock
- 8.2 ft. below B.M. 1
- 2.2 ft. on tide staff at Washington Channel
- 10.9 ft. below B.M. 1
- 2.0 ft. on tide staff at New Brunswick
- 9.5 ft. below B.M. 1

Height of mean high water above plane of reference is 5.2 feet at South Amboy; 5.3 feet at Crossman's Dock; 5.5 feet at Washington Channel; 5.8 feet at New Brunswick.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. 5647

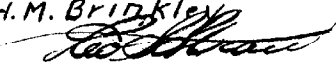
The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	1063
Number of positions checked	129.
Number of positions revised	90.
Number of soundings recorded	4835
Number of soundings revised	11.
Number of signals erroneously plotted or transferred	1.

Date:

Mr. Bissel }
Verification by J.W. Parsons }

Inked by H.M. Brinkley

Review by 

Time: 34 hrs.

Time 11 hrs.

Time:

GEOGRAPHIC NAMES

Date. Feb. 19, 1935

Survey No. 5647

Chart No. 369 & 375

Diagram No. 369-4 & 375

Approved by the Division of Geographic Names, Department of Interior. *

Referred to the Division of Geographic Names, Department of Interior. R

Under investigation. Q

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	<u>Raritan River</u> ✓	same			
✓	<u>Arthur Kill</u> ✓	"			
✓	<u>Raritan Bay</u> ✓	"			
✓	<u>Cheesequake Creek</u>	"			
✓	<u>Arsenal Creek</u>	<u>Red Root Creek</u>			
✓	<u>Washington Canal</u> ✓	same			
✓	<u>South River</u> ✓	"			
✓	<u>Sandy Pt.</u>	<u>Crab Island</u>			
✓	<u>Ferry Pt.</u>				

Report on H-5647

The records are complete and conform to the requirements of the general instructions. -

None of the usual depth curves could be completely drawn on this sheet.

The field plotting was completely to the extent prescribed in the Hydrographic Manual. The revised positions was due to naming the wrong signal. -

The shoreline was transferred from the Air Photo and inked by the verifier. -

The junction with H-5636 is satisfactory. -

The delineation of the depth curves by the field plotter was satisfactory. -

Remarks

Green check marks is the work that Bisset did, and the yellow is Parsons.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5647 (1934) FIELD NO. 7

Raritan River, New Jersey
Surveyed in 1934
Instructions dated May 10, 1934 (E. R. McCarthy).

Hand Lead and Pole Soundings. 3 Point fixes on shore signals.

Chief of Party - E. R. McCarthy.
Surveyed by - R. A. Philleo, T. R. Felts.
Protracted by - S. M. Green, Jr.
Soundings penciled by - S. M. Green, Jr.
Inked by - H. M. Brinkley.
Verified and inked by - Bissel and J. W. Parsons.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual.

The Descriptive Report is clear and comprehensive and adequately covers all matters of importance, except that a statement regarding the existence or non-existence of the wreck in latitude $40^{\circ}30.65'$, longitude $74^{\circ}17.8'$, should have been made. (Par. 10 of the Instructions).

2. Compliance with the Instructions for the Project.

This survey complies with the instructions, except that there should have been better development at the Pennsylvania Railroad docks in latitude $40^{\circ}29.4'$, longitude $74^{\circ}16.45'$. (See last line on page 3 of Descriptive Report).

An examination should have been made for the charted "wreck" in latitude $40^{\circ}30.65'$, longitude $74^{\circ}17.8'$. (Par. 10 of the Instructions).

3. Shoreline and Signals.

The shoreline originates with T-5103 (1932), T-5104 (1932), T-5105 (1932), and T-5109 (1932). Air Photo Compilation Surveys.

The signals for the hydrography are from Graphic Control sheets T-6218a & b (1934), T-6219a & b (1934), and T-6221a (1934).

4. Sounding Line Crossings.

Few cross lines were run, however, the crossings that occurred in the normal development of the work, together with the parallel adjacent lines, are in good agreement.

5. Depth Curves.

Within the limits of the survey the usual depth curves can be satisfactorily drawn.

6. Junctions with Contemporary Surveys.

The junction with H-5636 (1934) on the southeast is satisfactory.

The junctions with the several surveys by the U. S. Army Engineers and surveys by the Arundel Corporation, and the Morris & Cummings dredging concerns are satisfactory, except as follows:

- (1) The differences in depths between the present survey and the Engineers survey of 1935 (blue print 28399) at the northwest side of the Cut off Channel connecting Arthur Kill to the main channel of the Raritan River is due to widening and deepening the channel. Soundings on the present survey within the common area should be used in charting.
- (2) The junction with the Engineers survey of 1934 (blue print 27927) at the confluence of the South Channel and the main channel of the Raritan River (latitude 40°30.25', longitude 74°18.87') is satisfactory, but at the Crossman Dock, the depths are two to three feet shoaler on the present survey than shown on blue print 27927 (1934). The present survey was made about two months after the Engineers survey. The bottom in this section of the river is generally soft mud and subject to rapid shoaling, which is supported by the fact that the Engineers Annual Report of 1935 (Chart Letter 630/4 of 1935) gives a controlling depth of 6 feet for South Channel to Crossman Dock as compared with 10 feet in June 1934.

7. Comparison with Prior Surveys.

a.	H-61 (1836)	H-126 (1841)
	H-62 (1836)	H-495 (1855)
	H-64 (1836)	H-572 (1857)

A comparison between these surveys and the present one shows extensive changes in channel depths, some changes in the location and depth of shoals, as well as appreciable artificial building out of the shoreline. The above mentioned hydrographic changes are due primarily to dredging and maintenance of channels at the west end of Raritan Bay, all subsequent to the above old surveys. A discussion of the changes noted is omitted since it would serve no useful navigational purpose. The old surveys should be superseded by the present survey for charting purposes.

b.	H-1172 (1872)	H-1712 (1886)
	H-1204 (1873)	H-1713 (1886)
	H-1205 (1873)	

These surveys are in fair general agreement with the present survey except for the extensive waterway improvements consisting of dredged channels, dikes, docks, etc., in the lower reaches of the Raritan River. South River and the Washington Canal (H-1205, 1873), also show radical changes, most of which have been brought about by the dredging of the Washington Canal. The cutoff canal and the South River from the Sayreville Highway Bridge to the dock at the South River Sand Company. Although the section of the South River from the Washington Canal to its mouth, as well as the loop opposite the Sayreville Highway bridge, was not intensively developed on the present survey, there is evidence that it has shoaled from 4 to 10 feet in numerous places. Because of the above mentioned changes, together with the fact that this portion of the river is now of little navigational importance, no soundings from H-1205 (1873) are carried forward to the present survey. All of the above mentioned surveys should be superseded by the present survey for charting purposes.

8. Comparison with Chart No. 375 (Corrected to Nov. 19, 1934).

a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in paragraph 7 of this review, and the following U. S. Engineers surveys, except as noted:

No. 27111 (1933)	28371 to 28374 (1932)	
27486 (1934)	28375 to 28377 (1934)	
27487 (1934)	28378 (1933)	
27854 (1933) (Arundel Corp.)	28399 (1935)	
27856 to 27858 (1934) (Arundel Corp)	29018 ---	} Morris and } Cummings
27927 (1934)	29019 ---	
28188 (1934)	29020 ---	

- (1) The wreck charted in latitude $40^{\circ}30.1'$, longitude $74^{\circ}17.31'$, originating with blue print 27858 (1934) was not located on the present survey. Sounding line 31 - 32e runs practically over the charted position with 3 to 4 feet of water, (reduced $1-1/2$ feet for tide), but no mention of the wreck was noted in the remarks column or in the Descriptive Report. This matter has been referred to the field. *Retain as shown on present chart see letter Mar 23, 36 attached. L.S.S.*
- (2) The 5 foot sounding in latitude $40^{\circ}30.23'$, longitude $74^{\circ}17.27'$, from blue print 27858 (1934) falls in depths of 7 to 8 feet, but within 50 meters of a six foot sounding on the present survey. Because the soundings on this blue print in this vicinity are in good agreement with the present survey the 5 foot sounding should be retained on the chart.

- (3) The charted "wreck" and black can buoy in latitude 40°30.65', longitude 74°17.8', was not located on the present survey. It is not shown on blue print 27854 (1933). The 1935 Lighthouse Service Local Light List and Buoy list gives the following: "Wreck Buoy, Black 2d. cl. can (s), north side of wreck near south edge of channel. In 15 feet". Because of the conflicting information the existence of the wreck buoy is uncertain. The matter has been referred to the field.
- Retained as on present chart. see letter Nov 23, 36 attached.*
L.S.S.

b. Aids to Navigation.

The aids to navigation as located on the present survey are in substantial agreement with the chart, except as follows:

- (1) The buoys which mark the south channel of the Raritan River in approximate latitude 40°29.6', longitude 74°19.1' are located on the present survey 20 to 270 meters from their charted positions. These buoys were evidently moved to make way for dredging and were not yet replaced to properly mark the channel at the time the work of the present survey was in progress.
- (2) The charted black can buoy in latitude 40°30.66', longitude 74°17.81', was not located by the present survey. For discussion of this buoy and the charted wreck, see paragraph 8a(3) of this review.
- (3) Buoys N4 and FLR buoy shown on the present survey in the cut off channel through Great Beds shoal, approximate longitude 74°16', have been moved subsequent to this survey because of widening the channel, therefore their positions on the present survey should be disregarded in charting.

c. Controlling Depths.

Within the area covered the controlling depths on the present survey are in agreement with the chart, except that in the South Channel in latitude 40°28.87', longitude 74°20.72'. The present survey shows one foot as the controlling depth whereas the chart gives 3-1/2 feet as of June 1934, which is superseded by 1-1/2 feet as of June 1935, by authority of the Engineers, Chart Letter 630/4 1935.

9. Field Plotting.

The field protracting and plotting were satisfactory. The shoreline was transferred from the Air Photo Compilation sheets to the smooth sheet in the office.

10. Additional Field Work Recommended.

Additional development is necessary at the Pennsylvania Railroad docks at South Amboy. (See page 3 of the Descriptive Report.)

Information regarding can buoy and wreck noted in paragraph 8(3).

11. Superseding Old Surveys.

Within the area covered the present survey supersedes the following for charting purposes:

H-61 (1836)	in part	H-1172 (1872)	in part
H-62 (1836)	" "	H-1204 (1873)	" "
H-64 (1836)	" "	H-1205 (1873)	" "
H-126 (1841)	" "	H-1712 (1886)	" "
H-495 (1855)	" "	H-1713 (1886)	" "
H-572 (1857)	" "		

12. Reviewed by - Leo S. Straw, Oct. 28, 1935.

Inspected by - E. P. Ellis.

Examined and approved:

C. K. Green, *C. K. Green.*
Chief, Section of Field Records.

L. O. Lobbat.
Chief, Division of Charts.

Fred. L. Peacock
Chief, Section of Field Work.

G. H. Hulse
Chief, Division of H. & T.

80

POST-OFFICE ADDRESS:

U. S. C. & G. Survey, Box 10 Key West, Fla.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

ERK

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

March 23, 1936.

1936 MAR 25 AM 9:18

To: The Director,
U. S. C. & G. Survey,
Washington, D. C.

From: Lieut.(j.g.) E. R. McCarthy,
U. S. C. & G. Survey,
Key West, Fla.

Subject: Sheet H-5647 - Raritan River, New Jersey.

Reference: Letter of Director dated Feb. 27, 1936,
82 DRM.

There are enclosed the photostat referred to in the above letter and a section of Chart #375.

With reference to the wreck marked by a buoy west of the Memorial Bridge, you are respectfully informed that inquiries were made at the U.S. Engineer Office, 2nd. N.Y. District and at the 3rd. Lighthouse District. The Engineer office had no information, the Lighthouse Bureau advises that the buoy is still maintained but that they have no knowledge of what the wreck is (a copy of the letter is attached). It is recommended that a wreck symbol be shown on the south side of the charted buoy.

Retained as a present chart. A.C.S. 4-11-36.

With reference to the wreck symbol on the mud bank east of the bridge a section of Chart #375 is attached which does not show the symbol.* This area, is, however, used as a graveyard and it is probable that a wreck may be located there. If so, it does not uncover at Low Water as the area was especially investigated for all wrecks baring at low water during a low tide.

Retain with a present chart. A.C.S. 4-11-36.

* The section of Chart 375 attached is of a prior date to the date of B.P. 27858(1934) which is the origin of the wreck in question.

A.C.S.
4-11-36.

E. R. McCarthy
E. R. McCarthy,
Lieut.(j.g.) C&GS,
Chief of Party.

DEPARTMENT OF COMMERCE

LIGHTHOUSE SERVICE

WJL:TM

March 20, 1936.

E. R. McCarthy, Lieut.(j.g.) C&GS,
U. S. Coast & Geodetic Survey,
Box 10, Key West, Fla.,

Subject: Wreck in Raritan River.

Reference: Your letter of March 10, 1936.

Sir:

This buoy has been maintained since about 1897 and there is no record at the present time as to what the wreck consisted of. The only information available is that the buoy is on the north side of the wreck near the south edge of the channel.

Respectfully,

J. T. Yates,
Superintendent.

By:(s) W.J.Lawton,
Chief Clerk.

CKG
5

82-DRM

February 27, 1936.

To: Lieut. (j.g.) E. R. McCarthy,
U. S. Coast and Geodetic Survey,
P. O. Box 10,
Key West, Florida.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: H 5647, Raritan River, N.J. - Sunken wreck and wreck marked
by a buoy.

Inclosed is a photostat of a section of your hydrographic survey
No. 5647, Raritan River, New Jersey, surveyed by R. A. Phillo^o and T. R.
Felts. There are indicated on the photostat a buoy marking a wreck and,
off Sandy Point, a sunken wreck symbol. Both the buoy and the wreck
symbol are from chart No. 375. The records of your survey contain no
information as to the then ~~present~~ status of these symbols.

Please advise whether or not they should be continued on the chart.

RECORDED & INDEXED

Inclosure.

Acting Director.

20 Jan 17, 1936
LAD

Applied to Chart 286 - July 2, 1936 - R.M.Z.

Applied to compilation drawing of new chart 375 - Sept. 4, 1936 - J.F.W.