7824

Diag. Cht. No. 1222-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PBS-H-1448 *Office No.* H-7824

LOCALITY

State VIRGINIA

General locality CHESAPEAKE BAY

Locality OLD POINT COMFORT

194 8 thru 50

CHIEF OF PARTY

A. C. Thorson, R. H. Tryon, Jr., G. R. Fish

LIBRARY & ARCHIVES

DATE MAY 16, 1951.

8-1870-1 (1)

7824

Form 537
(Ed. June 1946)

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.

REGISTER No. H-7824

Field No. PBS-H-1448

State VIRGINIA

General locality ~~LOWER~~ CHESAPEAKE BAY

Locality ~~FORT WOOL TO BUCKROE BEACH~~ Old Point Comfort

Scale 1:10,000 Date of survey 20 Oct. 1948 - 3 May 1950

Instructions dated 26 July 1948

Vessel PARKER, BOWEN, STIRNI, Launches #82 and #116

Chief of party A. C. Thorson, R. H. Tryon, Jr. and G. R. Fish

Surveyed by A. C. Thorson, J. E. Waugh, A. L. Powell, H. J. Seaborg, W. E. Randall and E. H. Sheridan

Soundings taken by ~~fathometer~~, graphic recorder, ~~handlead,wire~~

Fathograms scaled by Ships personnel

Fathograms checked by " "

Protracted by Wade Hitchcock

Soundings penciled by W. W. Feazel

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~

REMARKS: This survey was smooth plotted by the Hydrographic Section of the Norfolk Processing Office.

U. S. GOVERNMENT PRINTING OFFICE 693019

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC SURVEY H- 7824
(Field No. PBS-H-1448)

Chiefs of Party:

A. C. Thorson
G. R. Fish
R. H. Tryon, Jr.

Ships PARKER, BOWEN, STIRNI

Surveyed in 1948, 1949 and 1950

Scale 1:10,000

A. PROJECT:

This survey was executed under Supplemental Instructions from the Director for Project CS-326, dated 26 July 1948.

B. SURVEY LIMITS AND DATES:

This survey covers the inshore hydrography on the west side of Lower Chesapeake Bay from Latitude 36°-58'-30" to 37°-03'-00".

Survey work was begun on 20 October 1948 and was completed on 9 May 1950. On the east side it joins contemporary surveys H-7750 (1948-50) (PBS-~~H~~-4148) and H-7783 (1949) (PBS-~~H~~-1348). Survey H-7750 (1948-50) (PBS-~~H~~-4148), scale 1:40,000, begun in ~~July~~ June 1948 was completed on ~~25 October 1949.~~ 17 April, 1950. Survey H-7783 (1949) (PBS-~~H~~-1348), scale 1:10,000, begun 27 April was completed 26 May 1949. At the north, junction is made with contemporary survey H-7823 (1949-50) (PBS-~~H~~-1149), scale 1:10,000, begun on 13 October 1949 and completed on 9 May 1950. South and west of Old Point Comfort junction is made with survey Register No. H-7171, scale 1:10,000 dated 1947. A detached portion of survey H-7171 lies about one mile S of Thimble Shoal where the present survey joins along its north, west and south limits.

South and east of Fort Wool this survey joins survey H-6930, scale 1:5000, dated February - March 1944.

About one mile WSW of Thimble Shoal junction was made with a survey (Bp 46282, 1950) furnished by the U. S. ~~Navy~~ Corps of Engineers in connection with the grounding

of the USS MISSOURI in the early spring of 1950.

C. VESSEL AND EQUIPMENT:

The USC&GS Ships PARKER, BOWEN and STIRNI accomplished the major part of the hydrography. Launches #82 and #116 completed the work along the western shore and over Willoughby Bank and development about Fort Wool. The ships were operated from 400 to 1000 RPM and the launches were operated from 400 to 600 RPM while doing hydrography. All vessels and launches operated from the Little Creek Ship Base. Portable depth recorders No. 65 (type 808A) was used on the STIRNI and launches #82 and #116. Recorder Nos. 116-S and 120-S (type 808J) were used on the PARKER, BOWEN and launches #82 and #116. A sounding pole was used during the launch work in very shoal water.

D. TIDE AND CURRENT STATIONS:

The tides as furnished by the Washington Office were based on the hourly heights as observed at the primary tide station located at the Naval Operating Base, Hampton Roads, Va. All of the hydrography came within zone "Z" where a time difference of minus 30 minutes and a 0.0 high water height difference applies. (See Tide Note attached to this report).

No current stations were occupied.

E. BOAT SHEET:

The boat sheet was constructed and shoreline applied from T-8314 (1944) and T-8303 (1944) by the ~~Washington Office~~ Norfolk Processing Office.

Signals were plotted and verified in the field in the usual manner from contemporary graphic control sheets.

F. CONTROL STATIONS:

Hydrography was controlled by fourteen triangulation stations supplemented by twenty-four topographic stations located on graphic control surveys PBS-A-1950, (Not registered) T-7077 b (1950) PBS-E-1949 (Not registered) T-7077 a (1949) and surveys of 1948. ~~Below~~ see list of signals. ~~is~~ A list of signals used on this sheet ~~is~~ included in this Report.

both are in the Processing Office 8-28-52

G. SHORELINE AND TOPOGRAPHY:

The shoreline and topographic detail were taken from surveys T-8314 (1944) and T-8303 (1944), scale 1:20,000 surveyed by photogrammetric means.

The mean low water line was not defined along the western shore due to the small range of tide and the draft of the sounding launch.

H. SOUNDINGS:

Soundings were obtained with the Submarine Signal Company type 808-J and 808-A depth recorders.

Standard procedure was used in obtaining bar checks in accordance with paragraph 557 of the Hydrographic Manual. ~~Attached to this report~~ Filed with fathograms are lists of "Abstracts of Bar Checks" and "Summary of Echo Corrections" covering this phase of the hydrography.

Refer to section on "Fathometer Corrections" contained in report on Hydrographic Survey Field No. (PBS-~~H~~-4148) H-7750 (1948-50) for detailed account of method of obtaining corrections.

I. CONTROL OF HYDROGRAPHY:

Hydrography was controlled by the standard procedure of obtaining three-point sextant fixes on shore signals and objects and on several permanent type offshore navigational aids.

J. ADEQUACY OF SURVEY:

This survey is complete and adequate to supersede prior surveys for charting. Junction with all ~~previous and~~ adjoining surveys is satisfactory and no trouble was experienced in drawing depths curves ~~into the old work~~.

K. CROSSLINES:

Approximatley ten percent of the lines were crosslines. In

general, agreement was satisfactory. In some instances the soundings as shown on the boat sheet do not agree in crossing but it is believed that the final reduced soundings will eliminate these discrepancies.

L. COMPARISON WITH PRIOR SURVEYS:

Prior survey# register number# H-4040, 1919, scale 1:20,000 ~~and 7171, 1947, scale 1:10,000~~ covers the area of the present survey. No direct comparison can be made with survey H-4040 as a copy is not at hand. Comparison with survey H-7171 shows agreement throughout. (H-7171 is a contemporary junctional survey)

No items as covered by the Preliminary Review dated 14 July 1948 fall within the present survey limits.

M. COMPARISON WITH CHART:

Comparison was made with copies of chart 1222 published in December 1946 and hand corrected under date of 27 March 1950 and chart 400 published in January 1944 and hand corrected under date of 27 March 1950. This survey is in general agreement with these charts.

The 12 foot soundings charted on Thimble Shoal were verified by this survey. Also, the 4 foot shoal at Latitude 36°-58.85', Longitude 76°-15.5' was verified by a 3-ft. sdg. on the present survey. However, the shoal about the 5 foot sounding at Latitude 36°-59.75', Longitude 76°-16.2' has shifted about one tenth mile to the SE.

The last two shoals mentioned comprise the northern part of Willoughby Bank. Also, on Willoughby Bank at Latitude 36°-59.35', Longitude 76°-17.0' there is a least depth of 5.4 feet. A charted 8 foot sounding is 0.2 mile west.

~~At Latitude 37°-01.65', Longitude 76°-14.65' a least depth of 11.8 feet was obtained. The chart shows 14 feet at this point.~~ Deleted as stray (Field revision) At Latitude 36°-59.25', Longitude 76°-17.9' a least depth of 5.9 feet was obtained. The chart shows a 7 foot sounding 0.2 mile east.

Further chart comparison is covered under the next paragraph, "Dangers and Shoals."

N. DANGERS AND SHOALS:

The grounding of the USS MISSOURI and subsequent dredging operations to free her has changed the bottom configeration in the general area about 1 3/4 miles west of Thimble Shoal Lighthouse. Soundings (from BP 46282 (1950)) in this area ~~furnished~~ by the U. S. (Corps of Engineers) ~~Navy~~ were transferred to the boat sheet and junction made along the outer edges by the present survey. The shoaler soundings within this area were not verified. The hand applied soundings of 12, 29, 16 and 17 appearing on the charts are ~~in agreement with~~ (from) the (Corps of Engineers) ~~Navy~~ survey.

At Latitude 37°-00.5', Longitude 76°-17.1' on 12 October 1949 a fathometer sounding of 15 feet was obtained by the BOWEN (Vol. 4, Pos. 110C). The general depth in this area is about 30 feet. Subsequent development work on 19 April 1950 by launch #116 (Vol. 13, Pos. 99-110g) disproved the existence of this shoal. It is thought that perhaps the shoal was removed during the general dredging operations, or was, more probably, a stray. (The 15-ft. sdg. disproved.)

There are numerous fish traps in place in the general area of Latitude 37°-02.5', Longitude 76°-16.0'.

P. AIDS TO NAVIGATION:

The following listed floating aids to navigation were located during this survey:

Name (1950 Light List)	Location Lat. Long.	Water Depth	Vol. Pos. No.	Location Date 1950
Phoebus Channel Buoy #1 (Not Listed)	37°-00.~~02~~ 16' 76°-~~19.00~~ 18.99'	14.0'	Vol.#16, Pos. #1, e-day, Lch.#82	25 April
Hampton Creek Lighted Buoy #1A	37°-00.08' 76°-19.14'	11.0'	Vol.#16, Pos. #2, e-day, Lch.#82	25 April
Black and White Spar Buoy #23 (Not Listed)	36°-59.~~58~~ 91' 76°-18.~~77~~ 97'	18.0'	Vol.#16, Pos. #3, e-day, Lch.#82	25 April moved L 357 (1950)
Hampton Creek Buoy #1	36°-59.98' 76°-18.~~77~~ 96'	14.0'	Vol.#16, Pos. #4, e-day, Lch.#82	25 April
Hampton Bar East End Buoy	36°-59.93' 76°-18.~~72~~ 89'	12.0'	Vol.#16, Pos. #5, e-day, Lch.#82	25 April
Willoughby Bay Buoy #1	36°-59.08' 76°-18.56'	18.0'	Vol.#17, Pos. #4, f-day, Lch.#82	26 April
Sewall Point Spit Lighted Bell Buoy #2	36°-59.04' 76°-18.~~66~~ 66'	25.0'	Vol.#17, Pos. #5, f-day, Lch.#82	26 April
Sewall Point Spit Buoy #4	36°-58.96' 76°-18.~~68~~ 67'	11.0'	Vol.#17, Pos. #6, f-day, Lch.#82	26 April
Willoughby Bay Buoy #3	36°-58.98' 76°-18.~~58~~ 57'	12.0'	Vol.#17, Pos. #7, f-day, Lch.#82	26 April
Willoughby Bank Lighted Gong Buoy #15	37°-00.~~29~~ 28' 76°-15.72'	50.0'	Vol.#17, Pos.#33, f-day, Lch.#82	26 April
Black and White Spar Buoy 26N (Not Listed)	36°-59.10' 76°-16.~~40~~ 42'	——	Vol.#9, Pos.#1, E-day, STIRNI	9 May
Black and White Spar Buoy #45N (Not Listed)	37°-02.~~10~~ 03' 76°-15.~~70~~ 76'	15.0'	Vol.#9, Pos.#26, E-day, STIRNI	9 May
Black and White Spar Buoy 40N (Not Listed)	37°-00.90' 76°-16.~~35~~ 34'	21.0'	Vol.#6, Pos.#122, F-day, BOWEN	4 May
Black and White Spar Buoy 44N (Not Listed)	37°-00.~~85~~ 85' 76°-16.~~10~~ 06'	24.0'	Vol.#6, Pos.#123, F-day, BOWEN	4 May

Black and White Spar Buoys numbers 23, 26, 40, 44 and 45 do not appear in the Light List. Their position and maintenance are regulated by statute in connection with the fishing industry.

Respectfully Submitted:

Harold J. Seaborg

Harold J. Seaborg
LCDR, USC&GS

CONFIDENTIAL SHEET

The following stations were occupied and are shown on the smooth sheet by their hydrographic names:

HYDRO NAME	STATION NAME
ZeB	STATION NO. 30
DOE	STATION NO. 34

DECLASSIFIED BY NOAA
PURSUANT TO DOC SYSTEMATIC REVIEW
GUIDELINES AS DESCRIBED IN SECTION
3.3(a), EXECUTIVE ORDER 12356.

LIST OF SIGNALS
To Accompany

HYDROGRAPHIC SURVEY H-7824 (Field No. PBS-1448)

TRIANGULATION STATIONS

BASE	NAVAL OPERATING BASE, TANK, 1947
CAP	WILLOUGHBY SPIT, YACHT CLUB, CAPPED CHY., 1906
FORT	OLD POINT COMFORT L.H., 1866-1944
HAM	CHAMBERLAIN-VANDERBILT HOTEL, WEST TOWER, 1932
IRE	VIRGINIA BUILDING SPIRE, 1913-32
MOORE	MOORE, 1943-47
OLD	OLD POINT COMFORT, CHAMBERLAIN-VANDERBILT HOTEL, E. CUPOLA, 1929
PHEB	PHOEBUS, WATERWORKS TANK, 1938
ROE	FORT MONROE TANK, 1932
SEA	SEAWALL, 1944
THIM	THIMBLE SHOAL LIGHTHOUSE, 1919-44
USE	N. BUCKROE (U.S.E.), 1939

TOPOGRAPHIC STATIONS

(Source, Graphic Control Sheet T-7077(a) — in Processing Office 8-28-52

Abe Bat Bel Cin Daw Fog Gar Ida Ivy Jig
Las Lax Man Rug Top Van

BUG, 1950 (Marked)

(Source, Graphic Control Sheet T-7077(b) — in Processing office 8-28-52

Bag

(Source, H-7783) (1949)

Ace(d) Eva(d)

(Source, H-7750) (1948-50)

Cat(d) Dog(d) description to be filed in Div. Photogrammetry under H-7750 (1948-50)

(Source, ~~H-6950~~) T-6959 (1944)

Sid

(Source, H-7824 Form 524) (description filed in Div. of Photogrammetry, under H-7824 (1948-50)

Zip (d)

STATISTICS

STATISTICS FOR HYDROGRAPHIC SURVEY H- (PBS-H-1448)

Vol.	Day Letter	Date 1948	No. Of Pos.	Stat. Mi. Sdg.Line	Vessel
1	A	20 Oct.	92	24.8	PARKER
	B	21 Oct.	199	42.0	"
2	C	22 Oct.	96	12.3	"
		Totals	~~295~~ 307	~~59.1~~	
		1949			
3	A	5 May	194	37.7	BOWEN
	B	27 May	97	20.0	"
4	B	27 May	64	13.5	"
	C	12 Oct.	131	14.8	"
		1950			
5	D	27 Apr.	126	18.6	"
	E	28 Apr.	64	5.0	"
	F	4 May	73	7.0	"
6	F	4 May	71	6.5	"
	G	9 May	225	27.9	
		Totals	1045	151.0	
		1949			
7	A	17 Nov.	184	28.5	STIRNI
	B	18 Nov.	101	14.4	"
	C	23 Nov.	67	9.2	"
8	C	23 Nov.	159	22.5	"
		1950			
9	D	3 May	89	9.6	"
	E	9 May	26	2.8	"
		Totals	626	87.0	
		TOTALS FOR SHEET:	~~3839~~	Positions	3901
			~~489.5~~	Stat. Mi. Sdg. Line	
			13.25	Sq. Stat. Mi.	
		1949			
10	a	31 May	114	9.4	Lch. #116
	b	1 June	127	13.6	" "
	c	13 Oct.	24	2.5	" "
	d	21 Oct.	31	2.9	" "
11	d	21 Oct.	128	11.0	" "
	e	24 Oct.	203	18.5	" "
		1950			
12	f	18 Apr.	202	20.4	" "
	g	19 Apr.	35	4.2	" "
13	g	19 Apr.	171	16.5	
		Totals	1065 3	99.0	
		1949			
14	a	3 May	164	20.3	Lch. #82
	b	4 May	68	9.3	" "
		1950			
15	c	17 Apr.	202	14.7	" "
	d	24 Apr.	26	1.7	" "
16	d	24 Apr.	102	6.6	" "
	e	25 Apr.	126	11.9	" "
17	e	25 Apr.	35	4.0	" "
	f	26 Apr.	49	3.0	" "
	g	28 Apr.	10	0.5	" "
18	h	3 May	26	1.4	" "
		Totals	~~808~~ 778	73.4	

TIDAL NOTE
(PBS-H-1448)

The standard automatic tide gage at the Naval Operating Base, Hampton Roads, Va. was used exclusively to obtain tide reducers.

To simplify the work involved in reducing for tides the area covered under Project CS-326 was divided into four quadrants centered on the intersection of Latitude 37°-10' and Longitude 76°-10'. This survey is covered by area "Z", south of 37°-10' and west of 76°-10'. The time difference for area "Z" is minus 30 minutes and a high water height difference of 0.0 feet.

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
Form 786

L.363(1951) filed in Nautical Charts

ADVANCE REPORT OF DANGERS TO BE CHARTED

Survey (Sheet) No. H-7824 Datum 1927 Locality Thimble Shoal Channel, Va. State Virginia Date 5/14/51

I recommend that the following dangers to navigation be charted. The positions given have been checked after listing; Checked by H. L. P.

Earl O. Heaton
Capt. C&GS, Supvsr. SE Dist. *Chief of Party*

Type of Danger	*Depth (Feet)	Latitude and Longitude		† From Charted Object or Natural Feature			‡ Chart Used		Date of Location	Remarks
		° ′	Seconds in Meters	True Bearing	Distance (Meters)	Object or Feature	No.	Print Date		
Shoal	29′	37° - 00′ 76° - 16′	940.0 582.0	76°	3074	Old Pt. Comfort L. H.	Survey H-7824		10/21/48	Survey H-7824 recently forwarded to Washington Office

* Record least depth over danger reduced to plane of reference of charted soundings, using observed tides, if available.
† Record location both by geographic position and by true bearing with distance from object or natural feature shown on chart.
‡ Use largest scale chart and note print date given in lower left corner of chart.

NOTE - This form to be used during the season for prompt reports of uncharted dangers. If reports have been sent by wire, fill out this form and mail with confirmations. Enter dates of wires under "Remarks". Copies of reports on this form should be retained and submitted with the descriptive report.

N-1906-1(1)++

APPROVAL SHEET

The records and boat sheet are approved as submitted to the Norfolk Processing Office. The survey is complete and adequate. No additional work is recommended.

If there is doubt about rejecting the 15 foot spot in Lat. 37°-00.5', Long. 76°-17.1', as a stray the spot can be wire dragged at a later date.

The 15-ft sounding is disproved, see p.7 of this report.

G. R. Fish
COMDR, USC&GS
Chief of Party

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-7824 (Field No, PBS-1448)

DREDGED AREA

The limits of the Corps of Engineers after dredging survey (Bp.46282, Jan.-Feb., 1950) of the area of grounding of the Missouri, are shown on the smooth sheet in a dashed pencil line. All soundings and positions falling with-in this area ~~and~~ taken prior to the grounding, have been omitted from the smooth sheet. Soundings shown on the smooth sheet in this area are from lines run April 17, 1950 and May 4, 1950.

A copy of the Engineers after dredging survey is being submitted with the smooth sheet. (Copy filed Mar. 30, 1950 as Bp 46282.)

SOUNDINGS

Lat. 37°-00.5' Long. 76°-16.4' Attention is directed to the 29 ft. sounding falling just inside the thirty-six foot curve. This sounding was taken before the Missouri grounding by Ship Parker, on 21 Oct. 1948 (pos. 137-138B) and was confirmed by Lch. 82 on 17 Apr. 1950 (pos. 85-86c).

Respectfully submitted,
Hugh L. Proffitt
Cartographer.

Norfolk, Va.
5 May 1951

Approved & Forwarded:
Earl O. Heaton
Supervisor, SE District.

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Hydrography and Topography: 23 May 1951

Division of Charts: R. H. Carstens

Plane of reference approved in 18
volumes of sounding records for

HYDROGRAPHIC SHEET 7824

Locality Lower Chesapeake Bay, Virginia

Chief of Party: Thorson, Tryon, Fish in 1948-50
Plane of reference is mean low water, reading
3.6 ft. on tide staff at Hampton Roads (NOB)
13.4 ft. below B. M. 6 (1927)

Height of mean high water above plane of reference is 2.5 feet.

NOTE: Tide reducers were verified by using a time correction of -0 30 minutes at the working grounds.

Condition of records satisfactory except as noted below:

E. C. McKay
Section
Chief, ~~Division~~ of Tides ~~and Currents.~~

U. S. GOVERNMENT PRINTING OFFICE 756675

GEOGRAPHIC NAMES

Survey No. H-7824

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Virginia									USC-B	1
Chesapeake Bay									"	2
Willoughby Spit									"	3
Fort Wool										4
Old Point Comfort										5
Thimble Shoal		X								6
Buckroe Beach										7
										8
Willoughby Bank										9
Thimble Shoal					Names underlined in red are approved. 6-26-51. L. Heck					10
										11
										12
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										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7824....

Records accompanying survey:

Boat sheets ..1..; sounding vols. 18...; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 14 env.;

special reports, etc. 1 Smooth Sheet, 1 Descriptive Report,.....

.....

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

Number of positions on sheet		3901
Number of positions checked		40
Number of positions revised		15
Number of soundings revised (refers to depth only)		20
Number of soundings erroneously spaced		.....
Number of signals erroneously plotted or transferred		.....
Topographic details	Time	4 hr.
Junctions	Time	40 hr.
Verification of soundings from graphic record	Time	18 hr.

Verification by T.L. Janson 80 hrs. W.A. Werline 44 hrs. S.K. Jeffers 263 hrs. Total time 387 hrs Date Feb. 12, 1952

Reviewed by R.E. Elkins Time 52 Date Aug. 13, 1952

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7824 FIELD NO. PBS-1448

Virginia, Chesapeake Bay, Old Point Comfort

Project No. CS-326

Surveyed in October 1948 to May 1950 Scale 1:10,000

Soundings: Control:

808 Fathometers Sextant fixes on shore signals

Chief of Party - A. C. Thorson, R. H. Tryon, Jr., G. R. Fish
Surveyed by - A. C. Thorson, J. E. Waugh, A. L. Powell, H. J. Seaborg, W. E. Randall and E. H. Sheridan
Protracted by - W. Hitchcock
Soundings plotted by - W. W. Feazel
Verified and inked by - S. K. Jeffers and B. Werline
Reviewed by - R. E. Elkins, 13 August 1952
Inspected by - R. H. Carstens

1. Shoreline and Signals

The origin of the shoreline and signals is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated. The low-water line was not determined on the regular system of sounding lines because of the small range of the tide and the draft of the sounding launch.

The bottom is smooth, except for irregularities on Willoughby Bank and in the former dumping area to the south. Irregularities at the north edge of the deep-water channel were formed in the removal of the grounded U.S.S. MISSOURI.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7171 (1947) and H-6930 (1944) on the southwest, with H-7783 (1949) on the

south, and with H-7750 (1948-50) and H-7171 (1947) on the east. The junction with H-7823 (1949-50) on the north, will be considered in the review of that survey. The present survey extends to the shoreline on the northwest.

The 5-ft. sounding charted in lat. 36° 59.82', long. 76° 15.40' and other shoal soundings charted to the east from H-7171 (1947) are in conflict with present survey depths. The shoal has deepened 1 to 2 ft. in this vicinity and a butt junction with H-7171 was therefore made. The 5-ft. sounding charted at the above position and the other shoal soundings charted to the east, should be disregarded.

5. Comparison with Prior Surveys

a.

H-446	(1854)	1:40,000
H-447	(1854)	1:20,000
H-1188	(1873)	1:20,000
H-1876	(1888)	1:20,000
H-2866	(1906-07)	1:20,000
H-2861	(1907)	1:10,000
H-3923	(1916-17)	1:30,000
H-4038	(1918)	1:40,000
H-4040	(1918)	1:40,000
H-4077	(1918-19)	1:5,000
H-4078	(1918)	1:10,000

A comparison between the prior and present surveys reveals differences in depths which result from both natural causes and dredging operations. A channel has been dredged off the southwest side of Old Point Comfort. In the vicinity of lat. 37° 00.70', long. 76° 16.50' bottom changes have resulted from the grounding and removal of the U.S.S. MISSOURI. Dredged spoil dumped in the area south of Willoughby Bank has caused irregularities which are adequately revealed on the present survey. Natural changes have occurred on Willoughby Bank where the least depths have decreased 1 to 3 feet. The middle portion of the bank has shifted 300 meters southeastward from its prior position, and the 5-ft. sounding charted here, from H-4046, in lat. 36° 59.67', long. 76° 16.42', together with other shoal soundings of 5 and 6 ft. to the eastward, is now superseded by present depths of 10 to 12 feet.

Within the deep-water channel present depths differ as much as 10 ft. with depths shown on the earliest surveys. In this channel numerous soundings on H-4040 are out of position because of faulty fixes and insufficient recorded information regarding the time of the soundings. The verifiers report of that survey mentions a lack of recorded time for soundings, improper protracting and irreconcilable discrepancies at crossings. The 54-ft. sounding charted in lat. 37° 00.23', long. 76° 16.85', together with other soundings in this area from H-4040, fall in present depths of 85 to 95 ft. and are considered faulty.

Only minor differences are noted between prior and present depths on Thimble Shoal and in the area northward of the shoal,

With the retention of a few bottom characteristics, the present survey is adequate to supersede these prior surveys within the common area.

b. H-7176 W.D. (1946-47) 1:20,000

This wire-drag survey covers only a small portion of the present survey. No conflicts exist between present depths and the effective drag depths.

6. Comparison with Chart

Chart 400 1:20,000 (buff drawing corrected to 6/6/52)
Chart 1222 1:80,000 (latest print date 4/14/52)

A. Hydrography

The charted hydrography originates principally with the prior survey, H-4040 (1918), supplemented by soundings from the earlier survey, H-1188 (1873). Critical soundings are charted from advance information of the present survey, and from the following surveys by the Corps of Engineers, Bp. 35993 (1941), Bp. 44583 (1949), and Bp. 46282 (1950).

(1) Shoal soundings charted from the boat sheet (Bp. 47203) of the present survey differ from those shown on the smooth sheet as follows:

Boat Sheet depth ft.	Lat.	Long.	Smooth Sheet depth ft.
7	37° 01.00'	76° 17.05'	9
8	37° 01.05'	76° 16.85'	9
11	37° 01.00'	76° 15.28'	12
4	36° 59.60'	76° 16.20'	5

(2) The 24-ft. sounding charted in lat. 36° 59.90', long. 76° 18.78' and the 29-ft. sounding charted 150 meters eastward from a 1949 survey (Bp. 44583) by the Corps of Engineers are disproved by development on the present survey and should be disregarded.

(3) The charted obstructions marked by lighted buoys are from letter 323 (1952) subsequent to the present survey.

(4) The jetties charted northeast of Old Point Comfort are from a survey (Bp. 48126) made by the Corps of Engineers in April 1951, subsequent to the present survey.

(5) The area in the vicinity of lat. 37° 00.70', long. 76° 16.50' was not developed on the present survey. This area is adequately covered by a contemporary survey by the Corps of Engineers (Bp. 46282) made in 1950.

Except as noted in the preceding items 3, 4 and 5, the present survey is adequate to supersede the charted information.

B. Aids to Navigation

Except as noted below, the charted aids are in substantial agreement with the present survey and adequately mark the features intended:

(1) Buoy S-41N charted in lat. 37° 02.08', long. 76° 16.00' is not shown on the present survey. Evidently this buoy was not on its station at the time of the survey.

(2) The several lighted obstruction buoys maintained by the U. S. Navy are charted from information reported in Notices to Mariners subsequent to the present survey.

7. Condition of Survey

a. The sounding records are complete and the Descriptive Report covers all matters of importance.

b. The smooth sheet plotting was well done.

8. Compliance with Project Instructions

This survey adequately complies with the Project Instructions.

The undeveloped area in lat. 37° 00.60', long. 76° 16.50' on the present survey is covered by the contemporary survey, Bp. 46282 (1950), by the Corps of Engineers.

9. Additional Field Work

This is an excellent basic survey and no additional field work is required.

H. R. Edmonston
Chief, Nautical Chart Branch

L. S. Hubbard
Chief, Section of Hydrography

Examined and approved:

H. Arnold Karo
Chief, Division of Charts

Earl O. Heaton
Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. H-7824

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
24 May 51	Reconstr. 1222	H.E. MacEwen	Partially applied. Before ~~After~~ Verification and Review
June '51	1222 T.O.	Burgoyne	" " " " partial.
July 1, 1952	481	N.W. Burgoyne	~~Before~~ After Verification and Review before fully applied — minor adjustment may be necessary when H-7750 is applied
12-31-52	400	R.K. DeLaunder	~~Fully~~ applied ~~Before~~ After Verification and Review
11/23/54	1222	HEM & JTW	~~Before~~ After Verification and Review Completely
8/16/56	Reconstr. 481	[illegible]	~~Before~~ After Verification and Review
7-22-59	562	R.E. Elkins	~~Before~~ After Verification and Review Completely Appl in part thru Cht 400 printed 7-6-59.
8/24/70	78	J.H.C. Millar	~~Before~~ After Verification and Review Fully Thru Cht 1222 Dwg #57
12001 Prototype	10-2-85	J Graham	~~Before~~ After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.