

1223

8505

Diag. Cht. No. 78-3.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ECFP-1459 Office No. H-8505

LOCALITY

State Virginia

General locality Chesapeake Bay

Locality Nassawadox Creek Entrance and
Vicinity

1959

CHIEF OF PARTY

H. S. Cole

LIBRARY & ARCHIVES

DATE August 16, 1960

COMM-DC 61300

8505

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-8505

Field No. ECP - 1459

State Virginia

General locality Chesapeake Bay

Locality Nassawadox Creek ^{Entrance & Vicinity} & Offshore

Scale 1:10,000 Date of survey 9/22/59 - 12/4/59
~~7 Oct. to 1 Dec., 1959~~

Instructions dated 222/MEK, ECP 19 August 1959

Vessel East Coast Field Party

Chief of party Howard S. Cole, CDR.

Surveyed by ENS A.H. Goldberg & ENS J.D. Wingfield

Soundings taken by ~~HYDROGAP~~, graphic recorder, ~~HYDROGAP~~ SOUNDING POLE

Fathograms scaled by Party Personnel

Fathograms checked by Party Personnel

Protracted by M.E. JONES

Soundings penciled by M.E. JONES

Soundings in ~~SIKOTIK~~ feet at MLW ~~MLW~~ are true depths

REMARKS:

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Handwritten initials

DESCRIPTIVE REPORT
TO ACCOMPANY

Hydrographic Survey H-8505, Field No. ECFP-1459
Nassawadox Creek, Church Creek, and Offshore
Vicinity of Exmore, on Virginia's Eastern Shore

PROJECT: CS-287 SCALE: 1:10,000
EAST COAST FIELD PARTY HOWARD S. COLE, CHIEF OF
SURVEYED BY: ENS. J.D. WINGFIELD PARTY.
ENS. A.H. GOLDBERG

A. PROJECT

Project CS-287 was assigned to the East Coast Field Party for completion via Supplemental Instructions 222/MEK, ECFP, dated 19 August 1959. Prior instructions and supplements in effect were so stated in the aforementioned Supplemental Instructions. Instructions were addressed to LCDR Howard S. Cole, Officer-in-Charge, East Coast Field Party.

B. SURVEY LIMITS AND DATES

Locality of the survey was the Virginia Shore of Chesapeake Bay in the vicinity of the entrance to Nassawadox Creek. Limits of the survey were north $37^{\circ} 29' 15''$, south $37^{\circ} 26' 15''$, west $76^{\circ} 00' 15''$, and east to include Church Creek and Nassawadox Creek to longitude $75^{\circ} 56' 00''$.

Field work on H-8505 began on ^{22 September} ~~7 October~~ 1959 and ended on ~~4~~ December 1959.

Junction is made with prior surveys: Number: 3659, 1914, 1:20,000 and number 3702, 1914, 1:20,000, and contemporary surveys: H-8507 (1958-59) CO-1258, 1:10,000 and H-8506, ECFP-1559, 1:10,000, ~~H-8448 (1958)~~ (1959)

C. VESSELS AND EQUIPMENT

Launch CS-1177 was used to survey offshore of the 6 foot depth curve to the western limits of the survey. A 25 foot Chesapeake Bay Skiff was used to survey Church Creek, Nassawadox Creek to the easterly limits, and offshore to the 6 foot depth curve.

The launch and skiff operated under the command of the East Coast Field Party. The launch was moored at Clarke's Wharf in Hungar Creek and the skiff was moored at a wharf located behind the Bayford Post Office in Nassawadox Creek.

All echo-type depth recording was done with the EDG-255C No. 16 depth recorder. Sounding poles were used by the skiff in shoal waters and leadlines were used in depths over 12 feet. Armed leads were used for bottom samples.

D. TIDE AND CURRENT STATIONS

The tide station used for control of the entire survey was a portable automatic tide gage located at Wilsonia Neck on Hungar Creek (Lat. $37^{\circ}24.19'$ and Long. $75^{\circ}58.40'$) *off sheet*

Data for reduction of the sounding volumes was taken directly from the station records without time or range correction.

There were no current stations within the limits of the survey

E. SMOOTH SHEET

The projection was made in the Washington Office by a projection ruling machine. The shoreline and signals were transferred in the usual manner and were verified in accordance with 757 of the Hydrographic Manual.

F. CONTROL STATIONS

No triangulation stations were used for ^{signals} control in this survey. Appendix A of this report contains a complete list of control used.

G. SHORELINE AND TOPOGRAPHY

The shoreline and topography were transferred from *Advance Manuscript T-11242⁴³ However, a change at Lat. $37^{\circ}26.50'$ N, Long. $75^{\circ}58.70'$ W. is noted in "RED" on the smooth sheet and Advance Manuscript T-11243 (field copy)

* Reviewed photogrammetric surveys were applied during Review (T-11242, 43 of 1953-55)

H. SOUNDINGS

SOUNDINGS were obtained as stated in section C of this report. Methods were in accord with the Hydrographic Manual, Hydrographic Instructions and Technical Circulars.

I. CONTROL OF HYDROGRAPHY

Horizontal control for this survey was by three point sextant fix as outlined in section 333 of the Hydrographic Manual and following applicable sections.

J. ADEQUACY OF SURVEY

The survey is complete and is considered adequate to supercede prior surveys.

Junctions with the adjoining contemporary surveys, H-8506 and H-8507 are satisfactory and the depth curves can be adequately drawn at the junctions.

K. CROSSLINES

Crosslines to the extent of 15% to 20% were run which more than covers the 6% to 8% required by the project instructions. Favorable crossings were found. ✓

L. COMPARISON WITH PRIOR SURVEYS

Comparisons were made with prior surveys number 3659, (1914, 1:20,000) and number 3702 (1914, 1:20,000). There is a general agreement with the prior surveys and the contemporary survey with the following exceptions: * *PP 6 Review*

No. 3659 (1914, 1:20,000)

- * 1. The 11 foot sounding on ~~contemporary~~ ^{present} survey at Lat. $37^{\circ} 26.09' N$, Long. $76^{\circ} 00.00' W$ is not shown on the prior survey. ✓
- * 2. The 24 foot depth curve has changed considerably in the vicinity of $37^{\circ} 27.75' N$, $75^{\circ} 59.90' W$. ✓
- * 3. The shoal enclosed by the 12 foot curve shown on the ~~contemporary~~ ^{present} survey at $37^{\circ} 27.90' N$ and $75^{\circ} 58.65' W$ contains a minimum depth of 11 feet and is not shown on the prior survey. ✓
- * 4. Shoal enclosed by the 0 foot curve at $37^{\circ} 27.85' N$, $75^{\circ} 58.25' W$ shown on ~~contemporary~~ ^{present} survey is not shown on the prior survey. ✓

No. 3702 (1914, 1:20,000)

- 1. Depths shown on the ~~contemporary~~ ^{present} survey indicate that the channel in Nassawadox Creek is deeper now than it was when the prior survey was made. *Review PP 6* ✓

M. COMPARISON WITH CHART

The examination of chart 1223, (1:80,000) shows a good comparison with the following exceptions:

- 1. The 30 foot curve which is shown on the chart to run nearly on the $76^{\circ} 00' 30''$ meridian between $37^{\circ} 27' 00''$ and $37^{\circ} 27' 00''$ parallel has shifted several hundred meters to the east and now parallels the most easterly 30 foot curve shown on the chart. *Area cannot be identified in W.D.*
- 2. Soundings as shoal as 12 foot were found between the 12 foot curve and the 18 foot curve in the vicinity of $37^{\circ} 26' 15'' N$, $76^{\circ} 00' 00'' W$. *Currently charted.*

3. The existance^e of the 6 foot shoal at 37° 26.30'N, 75° 59.60'W was not verified. *Bottom change. 6 removed from chart.*
4. The 0 foot shoal centering about 37° 27.40'N, 75° 58.40'W has shifted to the southeast and now completely blocks the entrance to Westerhouse Creek. *Charted.* ✓
5. The 12 foot curve has shifted approximately 100 meters to the ~~west~~^{east} and the 6 foot curve has shifted approximately 200 meters to the ~~west~~^{east} at the entrance to Westerhouse Creek. *Charted* ✓
6. The 12 foot shoal centering about 37° 27.25'N, 75° 59.15'W has decreased in size and does not encompass such a large area. *Charted* ✓
7. The 16 foot shoal at 37° 27.10'N, 76° 00.15'W now contains a depth as shallow as 15 feet. *Charted* ✓
8. The 17 foot shoal at 37° ~~26~~²⁷.50'N, 75° 59.90'W has shifted 150 meters west and now contains a sounding as shallow as 15 feet. *Charted* ✓
9. The 6 foot shoal at 37° ~~28.50~~⁴⁴'N, 75° 58.~~35~~⁴⁵'W was not verified, however, 6 foot depths were found in this general area and should be considered as dangers to navigation. *See Review P. 7.A.(5)*
10. A shoal at the entrance of Church Creek now nearly blocks the entrance. *See last item this page below.*

N. DANGERS AND SHOALS

It is recommended that the following shoals be charted:

LOCATION	REASON FOR CHARTING
37° 27.40'N 75° 58.40'W	Has changed in position and now completely obstructs the entrance to Westerhouse Creek. ✓
37° 27.10'N 76° 00.15'W	Shown on chart having depth of 16 feet, now has minimum depth of 15 feet. (20L day) ✓
37° 26 ²⁷ .50'N 75° 59.90'W 9	Shown on the chart as having a minimum depth of 17 feet. Now has minimum depth of 15 feet. (57e day) ✓
Entrance to Church Creek	Bare at low water. Now nearly blocks entrance. Existence of channel in <u>eastern</u> side of creek is questionable. A narrow channel is currently charted on the <u>west</u> side of the creek from the present survey.

Q. COAST PILOT INFORMATION

None to be reported.

P. AIDS TO NAVIGATION

There is one fixed aid to navigation within the limits of the survey. It is listed on form 567 attached to this report.

One floating aid to navigation is within the limits of the survey. It is the entrance buoy to Nassawadox Creek and was located by launch CS-1177 at position 45d, 16 69' October 1959, in 14 feet of water. (37° 27.97N, 75° 58.7'W)

Three overhead cables exist within the survey, however, none were checked for clearance.

Q. LANDMARKS FOR CHARTS

NONE

1/mb
R. GEOGRAPHIC NAMES

NONE

S. SILTED AREAS

NONE

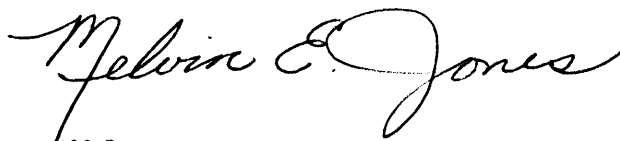
T. BY-PRODUCT INFORMATION

NONE

U-Y. MISCELLANEOUS

NONE.

Respectfully submitted,



Melvin E. Jones,
ENS., C&GS.

*REVISIONS and comments in red made by
REVIEWER P.B. Engle*

APPENDIX ATTACHMENTS

- A. LIST OF CONTROL STATIONS
- B. STATISTICS
- C. ABSTRACT OF FATHOMETER CORRECTIONS
- D. TIDAL NOTES
- E. FATHOMETER REPORT
- F. APPROVAL SHEET

APPENDIX A
LIST OF CONTROL STATIONS
Hydrographic Sheet H-8505, (ECFP-1459)

<u>STATION</u>	<u>ORIGIN</u>	<u>MANUSCRIPT</u>
TRIANGULATION: NONE.		
Ref. Sta TONGUE 3 (1942)	{ d 37° 26' 25.897" 798.4m }	T-11242
TOPOGRAPHIC	{ 2 75° 58' 37.511" 922.2m }	
COD	Cape Cod, 1953	T-11242
FEZ	Oyster shack (1942), 1953	T-11242
IVAN	IVAN 1953	T-11242
JAC	JACK (marked), 1953	T-11242
LEO	GALE 1953 (GABLE)	T-11242
MIT	Mitchell's Wharf (1942), 1953	T-11242
NAS	Nassawadox Creek Light, 1953	T-11242

PHOTO-SIGNALS:

Manuscript T-11242

ABE	DIM	GAL	JAY	NED	RIM	USE
ACT	DOE	GAM	JEF	NEW	RIO	WA D
AGO	DUO	GAS	KED	NIL	ROY	WAN
ANT	EGG	GET	KEY	NIP	SAX	WAS
ARM	EGO	GOL	KID	OFF	SHE	WED
ART	ELL	HAG	LAD	OHM	SIP	WEE
AXE	ELM	HAM	LIP	ORA	SIR	WEN
AZO	FAR	HER	LUX	ORB	SKI	YET
BUM	FAT	HEX	MEL	PIE	SOD	ZAZ
BUS	FEW	HOD	MAG	PIN	SOX	ZIZ
BUT	FIT	HOE	MAX	PIX	TOM	ZOO
CUR	FIX	IVY	NAT	PLY	TOY	
DAW	FOX	JAP	NAY	RED	TRY	
DIF	GAB	LAX				

Manuscript T-11243

MEL

HYDRO-SIGNALS:

Manuscript T-11242

DU6
PEG
PRO
TAX

APPENDIX B
 STATISTICS TO ACCOMPANY
 Hydrographic Survey H-8505, (ECFP-1459)
 SKIFF

<u>DATE</u>	<u>VOL. NO.</u>	<u>DAY</u> <u>LTR.</u>	<u>NO. D.P.</u>	<u>POSITIONS</u>	<u>NAUT. MI.</u> <u>SDG. LINE</u>
9/22/59	I	a	0	122✓	13.3
9/23/59	I&II	b	1	118✓	9.8
9/24/59	II	c	0	98✓	11.3
9/25/59	II	d	15	19✓	0.2
10/2/59	II	e	0	42✓	4.9
10/5/59	II&III	f	6	83✓	9.2
10/6/59	III	g	0	81✓	8.2
10/12/59	III	h	0	71✓	5.9
10/26/59	III	j	0	3✓	0.2
10/28/59	III&IV	k	22	70✓	3.5
10/29/59	IV	l	6	99✓	7.3
10/30/59	IV	m	0	880	5.6
11/3/59	IV&V	n	7	102✓	5.0
11/5/59	V	p	1	17✓	1.6
			<u>52</u>	<u>1013</u>	<u>786.0</u>

~~8~~
 1005

APPENDIX B
 STATISTICS (CONT.)
 Hydrographic Survey H-8505 (ECTP-1459)
 LAUNCH CS-1177

<u>DATE</u>	<u>VOL. NO.</u>	<u>DAY LTR.</u>	<u>NO. D. P.</u>	<u>POSITIONS</u>	<u>NAUT MI. SDG. LINE</u>
10/6/59	VI	a	0	58✓	7.5
10/8/59	VI	b	0	88✓	13.6
10/13/59	VI & VII	c	0	66 129	10.5 20.1
10/16/59	VII	d	1	91✓	11.6
10/20/59	VII & VIII	e	0	178✓	19.4
10/23/59	VIII	f	0	140✓	15.5
11/13/59	IX	g	0	6✓	1.0
11/19/59	IX	h	0	98✓	10.3
11/20/59	IX	j	0	83✓	11.0
11/23/59	IX	k	0	25✓	2.3
12/1/59	X	l	0	33✓	3.6
			<u>1</u>	866	106.3
				63	9.6
				929	115.9

Totals for launch and skiff 53 1879 292.3
 1934 201.9

Total no. of nautical square miles.....7.37 sq. mi.

APPENDIX C
ABSTRACT OF FATHOMETER CORRECTIONS
Hydrographic Survey H-8505, Field No. ECFP-1459
Project 287 Chesapeake Bay
East Coast Field Party 1959 Field Season

LAUNCH CS-1177
Fathometer EDO 255C Number 16

<u>FATHOMETER DEPTH</u>		<u>FATHOMETER CORRECTION</u>
	"a" day through "f" day	
0.0 to 18.0 ft.		-0.4
18.1 to 33.0 ft.		-0.2
	"g" day through "L" day	
0.0 to 24.0 ft.		-0.4
24.1 to 30.0 ft.		-0.2
30.1 to 33.0 ft.		0.0

CORRECTIONS IN FEET

10'
20'
30'
40'
50'
60'
70'
80'
90'
100'
110'
120'
130'
140'
150'
160'
170'
180'

DEPTHS IN FEET

VELOCITY CORRECTIONS
 U.S. Coast and Geodetic Survey
 Ship EAST COAST FIELD PARTY
HOWARD S. COLE Comdg.
 These corrections are to be used
 between 7 Oct 1959 and 1 Dec 1959
 in the locality Eastern Shore of
Chesapeake Bay, Va. Virginia
 for hydrographic surveys Nos. H-8505, H-8506
(ECFP 1459, ECFP 1559)
LAUNCH CS-1177
EDD DEPTH RECORDER 255C #16

CURVE "A"

<u>Depth Range</u>	<u>Correction</u>
0.0' thru 18.0'	-0.4'
18.1' thru 33.0'	-0.2'

These corrections are to be applied to:
 H-8505 (ECFP 1459)
 "a" day thru "f" day
 (10/17/59, 10/18/59, 10/19/59, 10/16/59, 10/20/59, 10/21/59)
 H-8506 (ECFP 1559)
 "a" day thru "f" day
 (10/18/59, 10/19/59, 10/16/59, 10/22/59, 10/26/59, 10/29/59)

CURVE "B"

<u>Depth Range</u>	<u>Correction</u>
0.0' thru 24.0'	-0.4'
24.1' thru 30.0'	-0.2'
30.1' thru 33.0'	0.0'

These corrections are to be applied to:
 H-8505 (ECFP 1459)
 "g" day thru "h" day
 (11/13/59, 11/19/59, 11/20/59, 11/23/59, 12/1/59)
 H-8506 (ECFP 1559)
 "g" day thru "f" day
 (11/30/59, 11/3/59, 11/3/59, 11/6/59, 11/10/59, 11/11/59, 11/2/59, 11/13/59, 11/20/59, 11/17/59, 11/23/59)

(For deep water - 10 to these figures)

APPENDIX D
TIDAL NOTES FOR
Hydrographic Sheet H-8505, (EDFP-1459)

Gage location: Wilsonia Neck, Hungar Creek
Latitude - $37^{\circ} 24.19' N$
Longitude - $75^{\circ} 58.40' W$

Staff: Mean low water corresponds to 1.0 feet on the staff.

Correction: No time or height correction was applied to the results obtained from the gage in reducing soundings.

APPENDIX E
FATHOMETER REPORT
PROJECT CS-287

Hydrographic Sheet H-8505 (ECFP-1459)

An EDO 255C type fathometer, serial No. 16 was used to obtain soundings in depths deeper than 6 feet. Sounding poles were used in shoal water.

Transducers for the fathometer were mounted through the hull. A Kato Converter was used as a source of power for the fathometer. An input power frequency of 60 cps was used for the entire survey.

Bar checks and vertical casts were taken daily to determine instrumental and velocity corrections.

Difficulty was encountered with the stylus system and considerable time was lost due to breakage of the marking stylus. This problem was solved by making a modification in the method of securing the stylus to the belt and by changing the shape of the stylus. No further difficulty was experienced.

APPENDIX F
APPROVAL SHEET TO ACCOMPANY
Hydrographic Sheet H-8505, (ECFP-1459)
Project CS-287

The record, corrections, and all field and office work was supervised by CDR. Howard S. Cole.

All soundings were taken with an EDO 255C type depth recorder, serial number 16, a 12 foot sounding pole, and a hand lead line.

The descriptive report was written by Melvin E. Jones.

The report and the records for the survey are complete and adequate to the best of my knowledge.

Approved and forwarded,



Howard S. Cole,
CDR., C&GS
Officer in Charge, ECFP

DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED
TO BE DELETED

STRIKE OUT ONE

EAST COAST FIELD PARTY

NOV. 1959

I recommend that the following objects which have *(have not)* been inspected from seaward to determine their value as landmarks be charted on *(deleted from)* the charts indicated.

The positions given have been checked after listing by MELVIN E. JONES

HOWARD S. COLE, CDR. C&GS
Chief of Party.

STATE	CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION			METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
				LATITUDE #	LONGITUDE #	DATUM						
				°	'	°	'					
VIRGINIA,		EASTERN SHORE, CHESAPEAKE										
	Massachusetts	Light (blac, pile, cagework at top) fl. 5 sec. 14' high.	NAS	27° 27.8'	77° 44.7'	75° 05.8' N	480.6	NA1927	Oct. 1959			C&GS 1222

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating aids* to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

GEOGRAPHIC NAMES
Survey No. H-8505

Name on Survey	Source									
	A	B	C	D	E	F	G	H	K	
	On Chart No. 1223									
	On previous survey									
	On U. S. quadrangle Maps									
	From local information									
	On local Maps									
	P. O. Guide or Map									
	Rand McNally Atlas									
	U. S. Light List									
	BGN									
Chesapeake Bay (Title)									X	1
Church Creek	· X									2
Church Point	· X									3
Horse Islands	· X									4
Long Point	· X									5
Nassawadox Creek	· X								X	6
Nassawadox Point	· X								X	7
Silver Beach	· X									8
Shooting Point	· X									9
Westerhouse Creek	· X								X	10
										11
										12
										13
										14
										15
										16
										17
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										24
										25
										26
										27

George M. Bace
GEOGRAPHIC NAMES SECTION
18 AUGUST 1960

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8505

FIELD NO. ECFP-1459

Virginia-Chesapeake Bay-Nassawadox Creek Entrance and Vicinity

SURVEYED: Sept. - Dec. 1959

SCALE: 1:10,000

PROJECT NO. 287

SOUNDINGS: EDO 255c Depth Recorder
Sounding Pole
Hand Lead

CONTROL: Sextant fixes
on shore signals

Chief of Party ----- H. S. Cole
Surveyed by ----- A. H. Goldberg; J. D. Wingfield
Protracted by ----- M. E. Jones
Soundings plotted by ----- M. E. Jones
Verified and inked by ----- J. C. Chambers
Reviewed by ----- D. R. Engle
Inspected by ----- R. H. Carstens

DATE: 11-14-61

1. Description of the Area

The survey covers the area from one mile north to three miles south of Nassawadox Creek entrance extending offshore about two miles, the lower part of Nassawadox Creek and all of Church Creek.

The character of the bottom in the bay area is generally sandy and relatively smooth outside the 18-ft. curve. In shoaler water the bottom is more irregular because of numerous sand waves which rise from 2 to 6 feet from the bottom and generally run parallel to the shoreline.

Nassawadox Creek and Church Creek both have muddy bottoms. Nassawadox Creek has a deep channel but a bar at its entrance is covered by only 2 feet of water at mean low water. The controlling depth of Church Creek is also 2 feet on the bar at its entrance and in the shoal water just inside the entrance.

2. Control and Shoreline

The origin of the control is given in the Descriptive Report.

The shoreline originates with reviewed photogrammetric surveys T-11242 and T-11243 of 1953-55. The shoreline revision at lat. $37^{\circ}26.25'$, long. $75^{\circ}58.75'$ made from hydrographic information is shown in red on the survey.

3. Hydrography

Sounding line crossings are in good agreement.

The usual depth curves are adequately delineated. The 3-foot curve was added to delineate the shoals and the river channels.

The development of the bottom configuration and least depths is generally satisfactory. However, some indications of sand ridges were not given specific development.

4. Condition of Survey

The field plotting, records and reports were adequate and conform to the requirements of the Hydrographic Manual.

5. Junctions

An adequate junction was effected with H-8507 (1958-59) on the north. Junctions with H-8506 (1959) on the south and H-8448 (1958) on the west will be considered in the review of those surveys.

6. Comparison with Prior Surveys

H-285 (1851) 1:40,000
H-976b (1868) 1:20,000
H-3659 (1914) 1:20,000
H-3702 (1914) 1:20,000

These prior surveys cover the area of the present survey. A comparison of the prior and present surveys reveals changes in both topography and hydrography.

The Chesapeake Bay shoreline has eroded as much as 250 meters in the area north of Nassawadox Creek entrance. South of the entrance it has eroded as much as 50 meters and several small islands and low water areas shown on the 1914 survey are now covered by 1 to 5 feet of water.

In the bay area covered by the present survey variable depth changes of as much as 5 to 8 feet are caused by erosion and shifting sand.

Nassawadox Creek has generally shoaled from 1 to 2 feet except in the channel, which is now 1 to 8 feet deeper than indicated on the prior surveys. The channel at the mouth has shifted 200 meters to the south of its position on the prior surveys. This is in the area of greatest shoreline erosion mentioned above. The bar controlling the entrance to this creek has shoaled to a depth of 2 feet at mean low water.

Church Creek generally shoaled 1 to 2 feet between the 1868 and 1914 surveys and deepened 1 to 2 feet between the 1914 survey and the present survey.

With the addition of two soundings from H-3659, the present survey is adequate to supersede the prior surveys in the common area.

7. Comparison with Chart 1223 (Latest print date 10-30-61)

A. Hydrography

Charted hydrography originates almost entirely with the present survey which was completely applied before verification and review.

The following soundings and features from the present survey after review are shoaler than those charted.

(1) The 10-foot sounding in lat. $37^{\circ}27.57'$, long. $75^{\circ}58.9'$ which is the least depth on a shoal.

(2) An isolated 12-ft. sounding in lat. $37^{\circ}27.48'$, long. $75^{\circ}59.25'$.

(3) An isolated 5-ft. shoal from H-8507 (1958-59) in lat. $37^{\circ}29.45'$, long. $75^{\circ}58.15'$ between two charted 6-ft. shoals.

(4) A low water shoal in lat. $37^{\circ}28.45'$, long. $75^{\circ}57.03'$ on the south edge of Nassawadox Creek channel.

(5) A 6-ft. shoal from H-3659 (1914) has been carried forward in lat. $37^{\circ}28.44'$, long. $75^{\circ}58.45'$. This sounding was formerly charted, but was removed when the present survey was applied to the chart before verification and review. The development on the present survey is considered inadequate to disprove the 6-ft. sounding.

(6) A 12-ft. sounding from H-3659 (1914) has been carried forward in lat. $37^{\circ}27.08'$, long. $76^{\circ}00.11'$. This sounding has not been previously charted probably because the verifier neglected to ink the 12-and 18-ft. curves on this feature and the compiler overlooked it. The present development is considered inadequate to disprove the 12-ft. sounding. It is recommended that this 12-ft. sounding be charted.

It should be noted that although the 1-ft. sounding charted in lat. $37^{\circ}28.05'$, long. $75^{\circ}58.24'$ may appear to block the entrance to Nassawadox Creek, a narrow channel exists through the entrance bar. The hydrographer ran the center of this channel and found the controlling depth to be 2 feet at mean low water, as shown on the present survey.

With the above exceptions the information charted from the present survey is in agreement with the reviewed smooth sheet.

B. Aids to Navigation

There are two aids to navigation on the present survey. Nassawadox Creek Light is in substantial agreement with the chart. Nassawadox Entrance Buoy, as located by the hydrographer, falls 200 meters ENE of its charted position.

The aids to navigation as presently charted adequately mark the features intended.

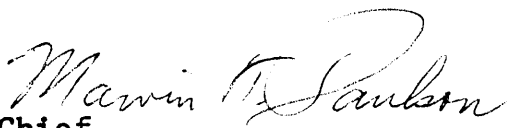
8. Compliance with Project Instructions


The survey adequately complies with the Project Instructions.


9. Additional Field Work

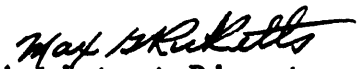
This is a good basic survey and no additional work is recommended.

Examined and Approved:


Chief,
Nautical Chart Division


Assistant Director,
Office of Cartography


Projects Officer,
Operations Division


Assistant Director,
Office of Oceanography

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8505.....

Records accompanying survey: Smooth sheets ..1..;
 boat sheets ..1..; sounding vols. ..10..; wire drag vols.;
 Descriptive Reports ..1..; graphic recorder envelopes ..5..;
 special reports, etc.

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

Number of positions on sheet	.....	<u>1934</u>
Number of positions checked	.....	<u>185</u>
Number of positions revised	.....	<u>0</u>
Number of soundings revised (refers to depth only)	.....	<u>0</u>
Number of soundings erroneously spaced	.....	<u>50</u>
Number of signals erroneously plotted or transferred	.....	<u>8</u>
Topographic details	Time	<u>4</u>
Junctions	Time	<u>8</u>
Verification of soundings from graphic record	Time	<u>4</u>
Special adjustments	Time	<u>0</u>

Verification by J. B. Chambers..... Total time 160..... Date 22 May 61.....

Reviewed by D. R. Engh..... Time 60..... Date 14 Nov 61.....

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

24 August 1960

Division of Charts: R. H. Carstens

Plane of reference approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 8505

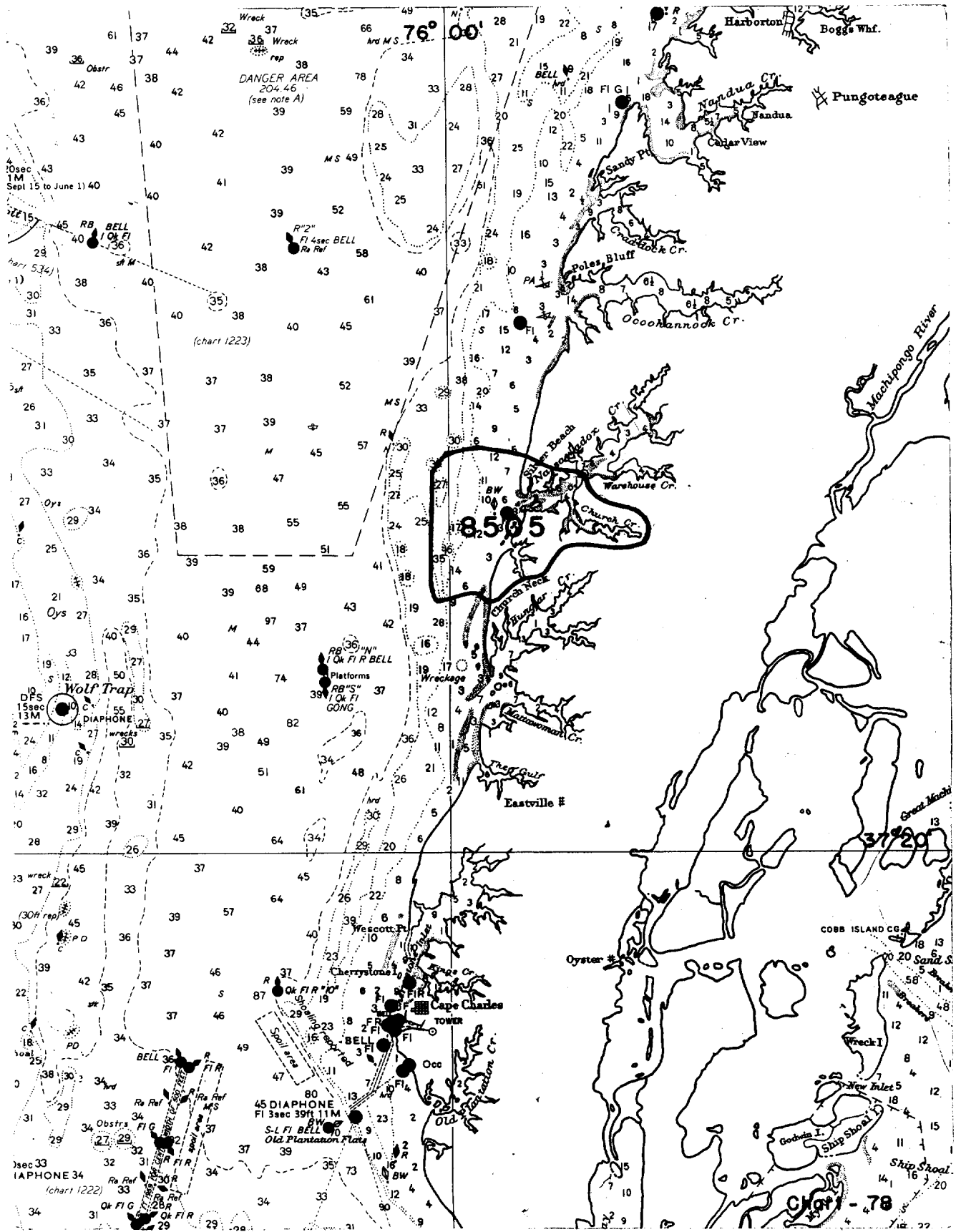
Locality Chesapeake Bay, Virginia

Chief of Party: H. S. Cole in 1959
Plane of reference is mean low water, reading
1.0 ft. on tide staff at Wilsonia Neck
3.6 ft. below B. M. 1 (1958)

Height of mean high water above plane of reference is 1.9 feet.

Condition of records satisfactory except as noted below:

William Shapero
Chief, Tides Branch
~~Chief, Division of Tides and Currents~~



NAUTICAL CHARTS BRANCH

SURVEY NO. H-8505

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
10/4/60	1223	J. Heaton	Before After Verification and Review [*] <i>Completely</i> * See #7 Review
1/4/61	78	J. Heaton	<i>Part Appd.</i> Before After Verification and Review
3/5/62	1223	JHE	Before After Verification and Review
Dec '62	564	J.J.S.	Before After Verification and Review
10-2-67	78	W. H. Hall	Before After Verification and Review <i>off this</i> 1223
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

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.