8253

8253

Diag. Cht. No. 1233-2.

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ECFP-1155 *Office No.* H-8253

LOCALITY

State North Carolina

General locality Cape Lookout

Locality Cape Lookout Shoals

19 55

CHIEF OF PARTY

M. T. Paulson

LIBRARY & ARCHIVES

DATE May 1, 1958

USCOMM-DC 5087

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-8253

Field No. ECFP-1155

State NORTH CAROLINA

General locality CAPE LOOKOUT

Locality CAPE LOOKOUT SHOALS

Scale 1:10,000 Date of survey 6 April-27 May 1955

Instructions dated 4 February 1955

Vessel Launch CS-175; EASTCOAST FIELD PARTY

Chief of party Marvin T. Paulson

Surveyed by E.K. McCaffrey and C.W. Tupper

Soundings taken by ~~echometer~~, graphic recorder, ~~hand lead, wire~~ No. 77

Fathograms scaled by Party Personnel

Fathograms checked by E.K. McCaffrey

Protracted by A. Kaupa

Soundings penciled by A.K. Schugeld

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~ and are true depths

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

DESCRIPTIVE REPORT
TO ACCOMPANY

Hydrographic Survey H-8253(FIELD NO. ECFP 1155)
Special Project - Cape Lookout Shoals, North Carolina

EAST COAST FIELD PARTY — MARVIN T. PAULSON, CHIEF OF PARTY

SCALE 1:10,000 — 1955

* * * * * * * * * * * * * * *

PROJECT: This was a special hydrographic survey accomplished under instructions 22/MEK; FP - East Coast dated 4 February 1955, and letter (22/MEK) of 11 May 1955 to Ens. Edwin K. McCaffrey.

SURVEY LIMITS AND DATES: The survey on sheet H-8253 (Field No. ECFP-1155) is of the northern part of Cape Lookout Shoals. The survey limits are as follows, on the north by latitude 34°-34.7'; on the south by latitude 34°-32.0. The east and west limits were the 30 foot curve.

In accordance with the referenced letter of 11 May 1955, the wrecks charted in Cape Lookout Bight were investigated and located on this sheet.

Satisfactory junctions were made with contemporary surveys, field nos. PBS 2255, and PBS 2355 on the west; ~~and~~ with PBS 2255 on the east; and H-8248(1955) on the south.

Work on this project began 6 April, 1955 and terminated 27 May 1955.

VESSELS AND EQUIPMENT: Launch CS-175 was used entirely during this survey. It operated from a mooring, out of the party base at Marshallberg, North Carolina.

Echo soundings were obtained with 808 type fathometer number 77, operated with transducers mounted inboard in the launch bilges. All soundings are in feet. Some shoal soundings and bottom investigation were made by sounding pole and handlead. There was no length correction applied to handlead soundings.

TIDE AND CURRENTS: The tide station was maintained at Cape Lookout Bight. The tide note is appended to this report. No current observations were made on this project.

SMOOTH SHEET: The smooth sheet ~~is to be~~ WGS plotted by the Norfolk Processing Office.

CONTROL STATIONS:

Triangulation Control:

Cape Lookout Lighthouse, 1933
East Radio Tower, Cape Lookout, 1933
West Radio Tower, Cape Lookout, 1933

TOPOGRAPHIC CONTROL: Topographic stations:— Pier, 1947 and chimney 1947 (T-8818) were recovered and used as control stations. The east gable of the house, so designated on acetate print T-8818 N/2 was pricked through direct on the boat sheet and was used as control station HOE.

Hydrographic station MAY was located by the standard three point sextant fix plastic plotting sheet destroyed and check angles. It was plotted on sheet ECFP-3155 and transferred to the boat sheet. This station was marked by this party, and its scaled geographic position is (see HPO Addendum)

included with the descriptions and recovery notes forwarded with this survey.

Hydrographic station CUP was located by distances and angles from marked, adjacent triangulation stations. This information is recorded on page 3, volume 1, of this survey.

Signals BOW, RED-1, RED-2, RED-3, and WIG-1, WIG-2, WIG-3 were 55 gallon survey buoys built in accordance with 2824 of the hydrographic manual. They were anchored in general depths of 30 feet and anchored, using 60 feet, of 3/8 chain. Anchor and counter balance weights were automobile engine blocks and concrete blocks respectively. The weights were approximately 100 lbs. for counter balance, and 300 lbs. for anchor. See H.P.O addendum

Visibility conditions at the time of planting these buoys and on subsequent observations, did not permit use of control objects in the Morehead-Beaufort area. . . 10 miles distant. Consequently, buoys RED-1, and WIG-1 were located using a range and one or more cuts to control stations on Cape Lookout. The buoy positions were checked prior to each days hydrography. Shoran positions of the buoys were observed by the PBS, Wire drag boats following a strong south-west storm. These positions were plotted and used as control buoys RED-2, and WIG-2. Observations by this unit following a storm at a later date indicated a third shift in these buoys. This latest position was plotted on the boat sheet and shown as control buoys RED-3, and WIG-3.

As the survey progressed to the southward, the need for a third buoy became apparent. Accordingly, this was constructed by this party and planted by the USC & GSS-BOWEN. This vessel obtained a shoran fix at the buoy station. This position was plotted as control buoy BOW. See HPO addendum.

All the position control data on these buoys is recorded in the sounding volumes (see list of signals appended).

SHORELINE AND TOPOGRAPHY: The shoreline and topographic details were transferred to the boat sheet from an acetate copy of topographic survey T-8818 N/2. (1946-4-9)

A sand islet south of Cape Lookout was located and outlined by means of 3-point sextant fixes. Positions are recorded in the sounding volumes. (See index in volume 1). Local information states that this islet is not a permanent feature, it builds up on south-west storms and erodes away in north-east weather.

SOUNDINGS: Soundings were obtained using Graphic recorder no. 77 and a sounding pole. No specific bottom samples were obtained, however, frequent shoal soundings verified by sounding pole showed a hard bottom of medium-fine white sand. This fact was noted on the boat sheet and with appropriate remarks in the sounding volumes.

CONTROL OF HYDROGRAPHY: The sounding lines on this survey were controlled by means of 3-point sextant fixes to appropriate control stations. No unusual position jumps were observed in changing control stations on a continuous sounding line. Fixes on sounding lines were taken at 1 minute and 1½ minute intervals.

Check angles were taken to verify the location of all detached positions.

ADEQUACY OF SURVEY: This survey is considered adequate to supersede prior surveys. See PS Review

CROSSLINES: Approximately 8% of the total sounding lines were crosslines. Good (boat sheet) agreement was obtained at all crossings. (See P2 Review)

COMPARISON WITH PRIOR SURVEYS: The previous survey of this area was H-4802; June-July 1928 at a scale of 1:10,000. Soundings from a print of this survey were placed on the boat sheet (in red) of the present survey. In general, it may be stated that there is little value in comparing the two surveys. Both had wide sounding line spacing, with extensive development only in the channel areas. Since the channel on the latest survey is not the same one that was developed by the 1928 survey, there is little area for actual comparison. Secondly, it should be noted that the changeable nature of the bottom in this vicinity in most cases, causes a wide disparity in areas where the soundings of the two surveys do coincide. It should be noted, that such a bottom change caused such a change in the channel developed in the 1928 survey, that ~~is~~ it is presently non-existent.

See PS Review

In the following comparison, blanks below the 1928 survey (H-4802) indicate an area not covered by that survey.

LATITUDE	LONGITUDE	H-4802	1955 SURVEY	REMARKS
34°-34.4~~7~~8'	76°-31.~~14~~20'	--	5	The least depth on this breaker marked shoal was 5.~~2~~8' fathometer recorded between positions 53 and 54 e day. A 5.~~4~~' sounding also occurs 75 m SW on the same shoal, and it is recorded between positions 105 and 106 g. It is recommended that this shoal be charted.
34°-34.~~36~~42'	76°-31.~~02~~10'	18	~~6~~7	This ~~6~~.0' sounding occurs on a continuous sounding line between positions 58-59e. It is verified by another ~~6~~.0' sounding 25m W on the same line. It is recommended for charting.
34°-34.~~28~~30'	76°-31.0~~5~~6'	16	8	The 8' sounding occurs 20m W. of the sounding from the old survey. The least depth on this line is a 5.0' fath sounding, occurring between positions 33~~&~~34 b. Adjacent to this sounding is a 6.4' pole sounding lying between positions 44-45 f day.
34°-34.~~35~~42'	76°-31.~~25~~33'	--	6	The least depth on this shoal was a 5.~~4~~0' pole sounding on position 43f day. A single 5.~~6~~0' fathometer sounding recorded between positions 38-39 c day.
34°-34.20~~'~~25	76°-~~30.93~~31.05'	--	~~6~~5	This appears to be a shoal ridge approximately 120 m long and is well defined by a number of 6.0' fathometer soundings on continuous lines as follows: 40-41f; 33-34f; and 13-14 e days. & 5'
34°-34.~~07~~12'	76°-30.~~88~~98'	--	6	This 6.0' fathometer sounding between positions 48-49 f and the ~~7~~6.0 sounding 75m ~~SW~~ SE between 10-11 d appear to be separate shoals and should be so charted. Also 54-55f - shoal is continuous -
34°-33.~~88~~96'	76°-30.~~85~~97'	11	5	This appears to be a small isolated shoal with a depth of 5.4' fath. between positions 90-91 j. This was verified by a 5.6' sounding in the same vicinity found between positions 8-9 m. It is recommended the shoaler sounding be charted.
~~34°-33.85' 76°-30.79'~~		~~--~~	~~6?~~	~~This is a single 6.2' fathometer sounding~~

LATITUDE	LONGITUDE	H-4805	1955 SURVEY	REMARKS
34°-33.~~85~~93'	76°-30.~~79~~93'	--	6	This is a single 6.2' fathometer sounding found between positions 45-46m.
34°-33.~~81~~88'	76°-30.~~56~~72'	10	~~8.9~~ 8.7	This sounding occurs twice, 100 m SE of the 10' sounding of the old survey. It is an 8.4' fath. sounding between pos. 16-17 m. and also appears as 7ft. between 9-10 ~~8.9~~. This is the controlling depth for the channel developed by this survey, and as such it should be charted.
34°-33.~~10~~65'	76°-30.~~10~~62'	12½	6	This depth occurs as a single pole sounding of 6.0' between positions 60-61 d. It lies 25 m S of the 12½' depth charted by the old survey. shoal is continuous - see pos. 48-49d & 18-19g.
34°-34.0~~1~~8'	76°-31.78'	—	6	This depth occurs as a single 5.8' fathometer sounding between positions 5-6 d. day.

COMPARISON WITH CHART: There is no large scale chart of this area. Soundings from the latest revision of chart 1234 (1:80,000) were reduced to scale and placed on the survey area in green. The charted wreck in the survey area and those in Lookout Bight were placed upon the boat sheet in red ink. A comparison follows:

LATITUDE	LONGITUDE	CHART 1234	1955 SURVEY	REMARKS
34°-33.~~38~~43'	76°-31.65'	sunken wreck	Same	Position of wreck is given in vol. 1, page 54. Wreck is of metal, approximately 5-7m. in length. It lies in a NW by SE direction, with the SE end being the shoalest point with a depth of 4 feet. At last report the red-black nun buoy marking it lay 150 m NE of the wreck.
34°-33.~~24~~34'	76°-31.~~29~~37'	7	~~8~~7	The ~~8~~.0' sounding is on a continuous sounding line 75m S of the charted sounding, and occurs between positions 33-34g. ~~In view of the shoaling indicated, and the distance of the two soundings, it is recommended that the present charted sounding be retained.~~
34°-33.48'	76°-31.04'	4	11	The 11.0' foot soundings refered to occur on continuous sounding lines 49-50d day, 70 m N; and 21-22 g, 60m S. Since there are none of the shoaling indications as shown in the old survey, it is recommended that this sounding be deleted.
34°-33.93'	76°-32.10'	5	11	This charted 5' sounding now lies in general depths of 12-14'. The shoalest sounding in the area is 11'. It is recommended that the charted sounding be deleted.
34°-33.98'	76°-31.88'	4	9	This charted 4' sounding occurs in general depths of ~~9-10~~ 8-9 by the present survey. Since no shoaling is indicated, it is recommended that the 4' sounding be deleted.
34°-34.~~34~~09'	76°-~~32.05~~31.79'	5	~~5.8~~6	The ~~5.8~~6' is a fath. sounding occurring between positions ~~26-27~~ 5-6 day. It is recommended the charted sounding be ~~retained~~. charted
34°-37.~~09~~10'	76°-32.60'	Sunken wreck	Same	This wreck was located as position 94j. The wreck is approximately 60' in length; lies in 4' of water and has a least depth of 3.6' a) pole sounding. Wreck lies NE-SW, is badly deteriorated and nearly sanded over. It is recommended the present charted symbol be retained.

LATITUDE	LONGITUDE	CHART 420	1955 SURVEY	REMARKS
34°-37.05'	76°-32.51'	Wreck awash	Same	This was located as position 95j. It is a barge 60' in length lying NE-SW with the sw end bare 1.6' at LW. It lies in 3 feet of water. It is recommended that the present charted symbol be retained.
34°-36.78'	76°-32.03'	--	Sunken wreck	This wreck was located as position 96j. It is the metal bottom of an old shooner. It has a least depth of 2.2' and lies in 2½ feet of water. At present it is marked by a wooden stake. This wreck has not previously been charted.
34°-36.98'	76°-31.87'	Wreck awash	Sunken wreck	This wreck was located as position 97j. The type of wreck was not identified. It is approximately 3m in size and lies in 1½ feet of water. It is covered by 1.0' and does not bare at MLW.
34°-37.28'	76°-31.93'	Sunken wreck	Same	This wreck was located as position 1 K. It is a small wreck marked by a 5' metal stake. It has a least depth of 0.4' pole sounding and lies atop a sand bar in 1' of water. It is recommended that the present charted symbol be retained.

None of the preceding wrecks are so located as to constitute a hazard to navigation.

DANGERS AND SHOALS:

LATITUDE	LONGITUDE	DEPTH	REMARKS
34°-33.92'	76°-30.83'	6½ 7ft	A depth of 7.0ft. ~~6.6' fath.~~ was recorded between positions 98-99 p day. This shoal borders the north edge of the developed channel and marks its limit in that direction.
34°-33.77'	76°-30.67'	3½ 4	A depth of 4.0' ~~3.6'~~ fath. was recorded between positions 8.9 p. Adjacent were depths of 6.2' and 5.6' found between positions 82-83p and 68-69 p respectively. This shoal borders the south edge of the developed channel and marks its limit in that direction.

Both of the above shoals are well marked by swells or breakers in moderate to rough weather. In calmer weather they are apparent by a difference in water coloration. Neither of the preceding shoals were so located as to constitute a hazard to navigation.

COAST PILOT INFORMATION: For the period of this survey, the launch and party based out of Marshallberg, N. C. Coast pilot notes are considered adequate for this area. A separate Coast Pilot note is submitted for the channel across Cape Lookout Shoals developed by this survey.

AIDS TO NAVIGATION: See N.P.O. List

Floating Aids:

LIGHT LIST NAME	LATITUDE	LONGITUDE	DEPTH	LOCATION:
Cape Lookout Slough: N.End Lighted Buoy 3	34°-34.55'	76°31.28'	21	Vol. 1 - Pa. 9
Cape Lookout Slough: Approach Lighted Buoy 1	34°-33.18'	76°-32.37'	35	Vol. 1 - Pa. 6
Cape Lookout Slough: South End Buoy	34°-34.23'	76°-31.26'	10	Vol. 1 - Pa. 25
Thistle roy Wreck Buoy	34°-33.29'	76°-31.58'	13	Vol. 2 - Pa. 6
Lookout Bight Wreck Buoy 2	34°-37.23'	76°-32.52'	26'	Vol, 4 - Pa. 32

LANDMARKS FOR CHARTS: Form 567 has been submitted to add the Coast Guard Cupola at the Cape Lookout station as a landmark.

GEOGRAPHIC NAMES: There are no changes in geographic names to report.

Respectfully submitted,

Edwin K. McCaffrey
Ens. USC & GS

Approved & Forwarded

Marvin T. Paulson
LCDR USC & GS
Chief of Party.

TIDE NOTE TO ACCOMPANY

HYDROGRAPHIC SURVEY SHEET H- (FIELD NO. ECFP-1155)

Tide data for the reduction of soundiggs was obtained from a portable automatic tide gage, No. T-645, on U. S. Government Pier, Lookout Bight, Cape Lookout, N. C. The mean low water plane of reference on the tide staff was furnished by the Washington Office. There was no time or range correction to be applied.

STATION	LATITUDE	LONGITUDE	MLW ON STAFF
Cape Lookout Bight, N. C.	34°-36.82'	76°-32.29'	2.6

STATISTICS TO ACCOMPANY HYDROGRAPHIC SHEET H- ECFP-1155

DATE 1955	DAY LETTER	VOL.	POSITIONS	STATUTE MI. SDG. LINES
15 April	a	1	5	1.0
18 "	b	1	34	5.4
19 "	c	1	62	10.4
21 "	d	1	69	15.3
29 "	e	2	61	8.6
4 May	f	2	118	18.8
5 "	g	3	113	22.4
6 "	h	3	72	12.4
10 "	j	4	97	17.0
12 "	k	4	13	1.6
18 "	l	4	48	6.4
19 "	m	4-5	141	24.7
23 "	n	5	33	5.7
26 "	p	5-6	117	23.1
27 "	q	6	24	3.9
TOTALS		6	1007	176.7

Area Surveyed 7.6 sq. st. mi.

VELOCITY CORRECTIONS: The velocity correction abstract is appended in the original of this report. Fathometer number 77 was used exclusively in this survey, from the period 15 April to 27 May 1955. All soundings were on A scale. Bar checks taken in the adjacent Harkers Id. area are included in this abstract. The magnitude of the required corrections did not exceed ±0.1 foot, therefore no velocity corrections need be applied.

LIST OF SIGNALS: Hydrographic Sheet H- (Field No. ECFP-1155)

Vol 2, p 60

BOW-----Vol. 3, pg. 41
CUP-----Vol. 1, pg. 3
HIM-----Chimney, 1947
HOE-----T-8818 N/2
LOOK----Cape Lookout Lighthouse, 1933
MAY-----Vol. 1, pg. 3; plotted on sheet ECFP-3155
PIE-----Pier, 1947
Red-1---Vol. 1, pg. 22
RED-2---Vol. 1, pg. 67
RED-3---Vol. 3, pg. 41
WIG-1---Vol. 1, pg. 3
WIG-2---Vol. 1, pg. 67
WIG-3---Vol. 4, pg. 4
WET-----Vol. 4, pg. 42

See N.P.O. list of signal

NORFOLK PROCESSING OFFICE
LIST OF SIGNALS
H-8253

TRIANGULATION STATIONS

	EAST RADIO TOWER, CAPE LOOKOUT, 1933
	WEST RADIO TOWER, CAPE LOOKOUT, 1933
LOOK	CAPE LOOKOUT LIGHTHOUSE, 1933

TOPOGRAPHIC STATIONS SOURCE T-8818

Him Pie

PLANIMETRIC STATIONS SOURCE T-8818

Hoe

HYDROGRAPHIC STATIONS

Bow	Shoran Position - Vol. 3, pg. 41
Cup	Vol. 1, pg. 3 - Computed Position
May	Vol. 1, pg. 3 - Computed Position
Red	Vol. 1, pgs. 22 & 67, Vol. 3, pg. 41
Wig	Vol. 1, pgs. 3 & 67, Vol. 4, pg. 4
Wet	Vol. 4, pg. 42

Vol 2, p 60

NORFOLK PROCESSING OFFICE
FLOATING AIDS TO NAVIGATION
H-8253

BUOY	LATITUDE	LONGITUDE	DEPTH	POS. NO.	DATE
Lookout Bight Buoy 4	34-37.43	76-33.32	39	2k	5/12/55
Lookout Bight Wreck Buoy 2	34-37.23	76-32.52	26	92j	5/10/55
Cape Lookout Slough North End Lighted Buoy 3	34-35.55	76-31.28	22	1b	4/18/55
Cape. Lookout Slough Appr. Ltd. Buoy 1	34-33.22	76-32.40	35	5a	4/15/55
Cape Lookout Slough Buoy	34-34.27	76-31.29	10	6c	4/19/55
Cape.Lookout Slough Wreck Buoy	34-33.57	76-31.62	11	76m	5/19/55

COAST PILOT REPORT

Observations from Special Project; Cape Lookout, May 1955

Additions to U.S. Coast Pilot, Atlantic Coast Section D, Cape Henry to Key West, Fifth(1948) Edition.

Page 146, line 47; add-----A natural channel runs in a general east-west direction across the north end of the shoals. The controlling depth in this channel is 8 feet, its width 200 yards. The channel centerline commences at latitude 34°-33.92'N, longitude 76°-29.50'W; running 261°T for a distance of 2.5 miles. (At present the channel is unmarked, but it has been recommended that the Coast Guard buoy the extremities.) The mariner should exercise caution in the use of this channel as it is bordered by shoals, and the channel itself may be subject to change due to the frequent storms of the area.

APPENDIX A

APPROVAL SHEET

The records and boat sheet for the sheet H 8253 (1155) have been inspected and are approved.

This survey was accomplished under very difficult conditions. The rough waters off Cape Lookout are especially bad in this area, as the prevailing winds are either from the northeast or southwest, either of which will build-up breakers across the shoals. It should be noted that the hydrographic party of the original survey did not attempt to survey through the shoal area, and that each storm that passes changes the channels. Cross lines that do not check as close as is required in the manual, should be accepted due to the constant changing conditions.

Marvin T. Paulson

Marvin T. Paulson
LCdr., C&GS, CinC

Form 567
April 1945

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED [redacted] } STRIKE OUT ONE

EAST COAST FIELD PARTY 2 November, 19[illegible]

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 E. K. Ratcliffrey

Marvin T. Paulson
Chief of Part

STATE NORTH CAROLINA, CAPE LOOKOUT

CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION LATITUDE* ° ′	LATITUDE* ″ D.M. METERS	LONGITUDE* ° ′	LONGITUDE* ″ D.P. METERS	DATUM	METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHART AFFECTED
C.G. Cupola	Cupola on the main building of the Cape Lookout Coast Guard Sta.	CUP	34-36	321.5 1527.3 323.5 1525.3	76-32	420.5 1078.4 443.4 1085.5	NA 1927	Sextant ECFP-1155 Computed Sextant angles-	May 1955 by N.P.O.		x		420

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloatin aids* to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not b

NORFOLK PROCESSING OFFICE
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8253 (Field No. ECFP-1155)

CONTROL

The control for this survey is weak but is believed to be adequate for surveying this extremely changeable area.

In order to strengthen the control as much as possible, the sextant angles locating stations Cup and May were computed in the Processing Office. The results show some differences in position when compared with the graphic plot done by the Field Party. See accompanying Form 567

Sextant locations of survey buoys Wig and Red were used instead of the shoran positions furnished by Ships Parker, Bowen and Stirni. Agreement at Wig was fair but the two positions of survey buoy Red differed by 150 meters. The shoran position of survey buoy Bow was used as no other data was furnished.

The sextant fixes locating survey buoys Wig and Red are weak, how-ever, there was no indication that these buoys had changed position during the period of the survey as mentioned in the descriptive report. The area of heavy developement in the channel appears to be well controlled as no perceptible jumps occurred when changing fixes. There were no checks on the hydrographic fixes when using survey buoy Bow.

SOUNDINGS

Agreement of soundings at crossings is good considering the changeable character of the bottom and the constant wave action.

Field scanning of the fathograms was accepted with some spot checking by this Office. Soundings were reduced in the conventional manner.

Norfolk, Va.
25 April 1958

Respectfully submitted,

Hugh L. Proffitt

Hugh L. Proffitt
Cartographer.

RHC

Form 712
(11-30-55)

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

13 June 1958

Chart Division: R. H. Carstens

Plane of reference approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 8253

Locality Cape Lookout, North Carolina

Chief of Party: M. T. Paulson in 1955

Plane of reference is mean low water reading

2.6 ft. on tide staff at Lookout Bight

9.7 ft. below B.M. 2 (1928)

Height of mean high water above plane of reference is 3.7 feet.

Condition of records satisfactory except as noted below:

Signature

Chief, Tides Branch

Comm-DC 34330

GEOGRAPHIC NAMES

Survey No. H-8253

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H		
North Carolina			(for title)							1
Cape Lookout Shoals			"	"						2
Cape Point										3
Cape Lookout										4
Lookout Bight			(tide station)							5
										6
			Names approved 5-16-58							7
			L. Heck							8
										9
										10
										11
										12
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										24
										25
										26
										27
										M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8253....

Records accompanying survey:

Boat sheets .1...; sounding vols. ...6.; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 6-Envelopes

special reports, etc. 1-Smooth sheet, 1-Descriptive report,....

1-Plotting sheet ECFP-3155, 1-Cahier, Velocity corrections and

1-Cahier, Computationns for Cup and May.

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

		Prel. Verif	by AMC 1007	1007
Number of positions on sheet				
Number of positions checked		21	5	21
Number of positions revised		2	0	2
Number of soundings revised (refers to depth only)		5	19	-
Number of soundings erroneously spaced		0	0	0
Number of signals erroneously plotted or transferred		0	0	0
Topographic details	Time	1	0	1
Junctions	Time	0	8	0
Verification of soundings from graphic record	Time	3	3	3

Prel. Verif. by — I.M. Zeskind — Time 27 — Date 8-12-60

Verification by Billy J. Stephenson ...Total time 76 Total - 103 Date 5-17-72

Reviewed by [signature] ..... Time ..18.. Date 8-30-60

M-2232-1

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H- 8253

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.✓

2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.✓

3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.✓

4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.✓

5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.✓

6. All positions verified instrumentally were check marked in the sounding records.✓

7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.✓

8. The metal protractor has been checked within the last three months.

9. The protracting and plotting of all bad crossings were verified.✓

10 All detached positions locating critical soundings, rocks or buoys were verified.✓

11. The boat sheet was compared with the smooth sheet.✓

12 The spacing of soundings as recorded in the records was closely followed.

13. The bottom characteristics were shown on outstanding shoals.

14. The reduction and plotting of doubtful soundings were checked.

15. The transfer of contemporary topographic information was carefully examined.

16. All junctions were transferred and overlapping curves made identical.

17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.

18. The depth curves have been inspected before inking.

19. All triangulation stations and transfer of topographic and hydrographic signals were checked.

20. Heights of rocks were checked against range of tide.

21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.

22. Unnecessary pencil notes have been removed.

23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.

24. The low water line and delineation of shoal areas have been properly shown.

25. Degree and minutes values and symbols have been checked.

26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).

28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.

29. All aids located, with those on contemporary topographic sheets, have been shown on survey.✓

30. Depth curves were satisfactory except as follows:✓

31. Sounding line crossings were satisfactory except as follows:

32. Junctions with contemporary surveys were satisfactory except as follows: H-9042 does not produce enough soundings to make an adequate junction with this survey at Lat: 34° 33' N, Long: 76° 32.5' W. & H-8248 does not produce enough soundings to make an adequate junction with this survey at Lat: 34° 32' N, Long: 76° 29.3' W. Soundings from H-8247 (1955) show a constant 1 to 3-ft difference.

33. Condition of sounding records was satisfactory except as follows:

34. The protracting was satisfactory except as follows:

35. The field plotting of soundings was satisfactory except as follows: Those soundings plotted on H-day as mentioned in paragraph 7c of Reviewers Notes.

36. Notes to reviewer:

Verified by Billy F. Stephenson Date 5/17/72

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8253 FIELD NO. ECFP-1155

North Carolina, Cape Lookout, Cape Lookout Shoals

SURVEYED: April - May 1955 SCALE 1:10,000

PROJECT NO. Spec. Instr.
ECFP, dated 4 Feb. & 8 May 1955

SOUNDINGS: 808 Depth Recorder
Pole

Control: Sextant Fixes on shore signals and survey buoys.

Chief, Of Party ---------- M. T. Paulson
Surveyed by ---------- E. K. McCaffrey & C. W. Tupper
Protracted by ---------- A. Kaupa
Soundings plotted by ---------- A. K. Schugeld
Preliminary verification by ----I. M. Zeskind
Verified and inked by --------- B. J. Stephenson
Reviewed by ---------- I. M. Zeskind DATE: 8/30/60
Inspected by ---------- R. H. Carstens

1. Shoreline and Control

The shoreline originates with the reviewed air-photographic survey T-8818n/2 (1946-49).

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

2. Sounding Line Crossings

Depths at crossings are in adequate agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated except close inshore where breakers prevented development to the low-water line.

The bottom is very irregular. Submarine features such as ridges, deeps and shoals contribute to the bottom irregularity.

4. Junctions with Contemporary Surveys

The junctions with contemporary surveys H-8247 (1955) on the west and H-8248 (1955) on the south will be considered in the reviews of those surveys.

5. Comparison with Prior Surveys

A. H-885 (1865 - 66), 1-80,000

This early small-scale survey covers the area of the present survey. A comparison between the prior and present surveys reveals considerable change in bottom configuration, with the greatest changes in depths occurring in the area which lies north of approximate lat. 34°33.0'. The changeable character of the bottom and the wide spacing of the sounding lines on the prior survey and on that portion of the present survey which lies approximately south of lat. 34°33.6' precludes a detailed comparison between the prior and present surveys.

The present survey is adequate to supersede the prior survey within the common area.

B. H-4802 (1928), 1-10,000

The prior survey covers that portion of the present survey which lies approximately east of long. 76°31.5'. A comparison between the prior and present surveys reveals considerable change in bottom configuration since the 1928 survey. A former channel which ran in a north northeasterly direction on the east side of Cape Lookout with a least depth of 9½ ft. is blocked by 4-ft. and 6-ft. shoals on the present survey. The present survey closely developed the area across Lookout Shoals where a natural channel with a least depth of 7-ft. was found.

Because of the changeable character of the bottom and the wide spacing of the sounding lines outside of the channel areas, adequate information is not available for a detailed comparison between the prior and present surveys. It is apparent, however, that considerable shifting of the bottom has occurred. The 30-ft. curve on the present survey has moved as much as 300 meters west of its location on the 1928 survey. Attention is directed to the wreck located on H-4802 in lat. 34°33.37', long. 76°31.63', which falls on the present survey about 100 meters to the northward. The wreck which formerly bared at extreme low water and fell in 17-ft.

of water is now covered by 4-ft. at MLW and falls in 7 - 13-ft. of water.

The present depths are adequate to supersede the prior depths, except in the sparsely developed areas where the present survey depths should be supplemented by depths from H-4802. Several soundings showing the major dangers in the area from the prior survey which have not been disproved, have been carried forward to the present survey.

6. Comparison with Chart 420 (Latest print date 2/29/60)
Chart 1233 (Latest print date 12/28/59)

A. Hydrography

The charted hydrography originates principally with the boat sheet (Bp 52608) of the present survey, supplemented by several soundings from the prior surveys and the unverified smooth sheet of the present survey. The following differences between the charted information and the present survey are noted:

1. The 20-ft. sounding charted in lat. 34°34.3', long. 76°30.3', is erroneous. This sounding originates with a 26-ft. boat sheet sounding of the present survey.

2. The wreck located on the present survey in lat. 34°36.77', long. 76°32.03', is not shown on chart 420.

Except as noted above and for several soundings carried forward from the prior survey only minor differences of 1-ft. are noted between the charted and present survey depths.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

The present survey positions of the aids to navigation are in substantial agreement with the charted positions and adequately mark the features intended, except as follows:

1. Buoy N "2" located on the present survey in lat. 34°37.22', long. 76°32.52', was deleted from the charts subsequent to the present survey in accordance with L.H.N.M. 29, 1958.

2. The Beacon charted in lat. 34°36.99', long. 76°32.18', originates with L.H.N.M. 29, 1958, and was charted subsequent to the present survey.

3. Lighted buoy Fl G "3" located on the present survey in lat. 34°35.55', long. 76°31.28', was deleted from the chart subsequent to the present survey in accordance with HON to M 46, 1955.

Attention is also directed to the following buoys whose charted positions adequately mark a channel across Cape Lookout Shoals:

4. Lighted buoy BW "W" charted in lat. 34°33.50', long. 76°32.56' subsequent to the present survey in accordance with HON to M 46, 1956, replaced lighted buoy Fl G "1", located on the present survey in lat. 34°33.22', long. 76°32.40'.

5. Lighted buoy BW "E" charted in lat. 34°33.9', long. 76°29.86', and buoy BW charted in lat. 34°33.7', long. 76°31.24', were not located on the present survey. These buoys were charted subsequent to the present survey in accordance with HON to M 46, 1956.

7. Condition of survey

a. This survey has been given a preliminary verification. A complete statement concerning the condition of the survey is deferred until the present survey has been completely verified.

b. The purpose of the survey was to develop a channel across Cape Lookout Shoals, and this was adequately done. Additional sounding lines were run to the south of the channel but the spacing is not considered sufficiently close to make this a basic survey.

c. The positions of the survey buoys used to control visual fixes are weak because of the small sextant angles observed. The position of survey buoy BOW determined by shoran is probably faulty inasmuch as the two lines controlled by this buoy on h-day fail to conform to the dead reckoning data and abnormally distort the bottom configuration. Conflicts in the junctional area on the south are also apparent. However, considering the changeable nature of the area and the lack of additional control data, the shoran position of the buoy was accepted and no adjustment to the lines were made.

8. Compliance with Project Instructions

The survey adequately complies with the project instructions as indicated in paragraph 7B.

9. Additional Field Work Recommended

As noted in paragraph 7b above, the sounding lines are spaced too far apart in this changeable area for this survey to be considered basic. The soundings on the prior surveys should be used to supplement the present survey in the sparsely developed areas, as stated in paragraph 5B above.

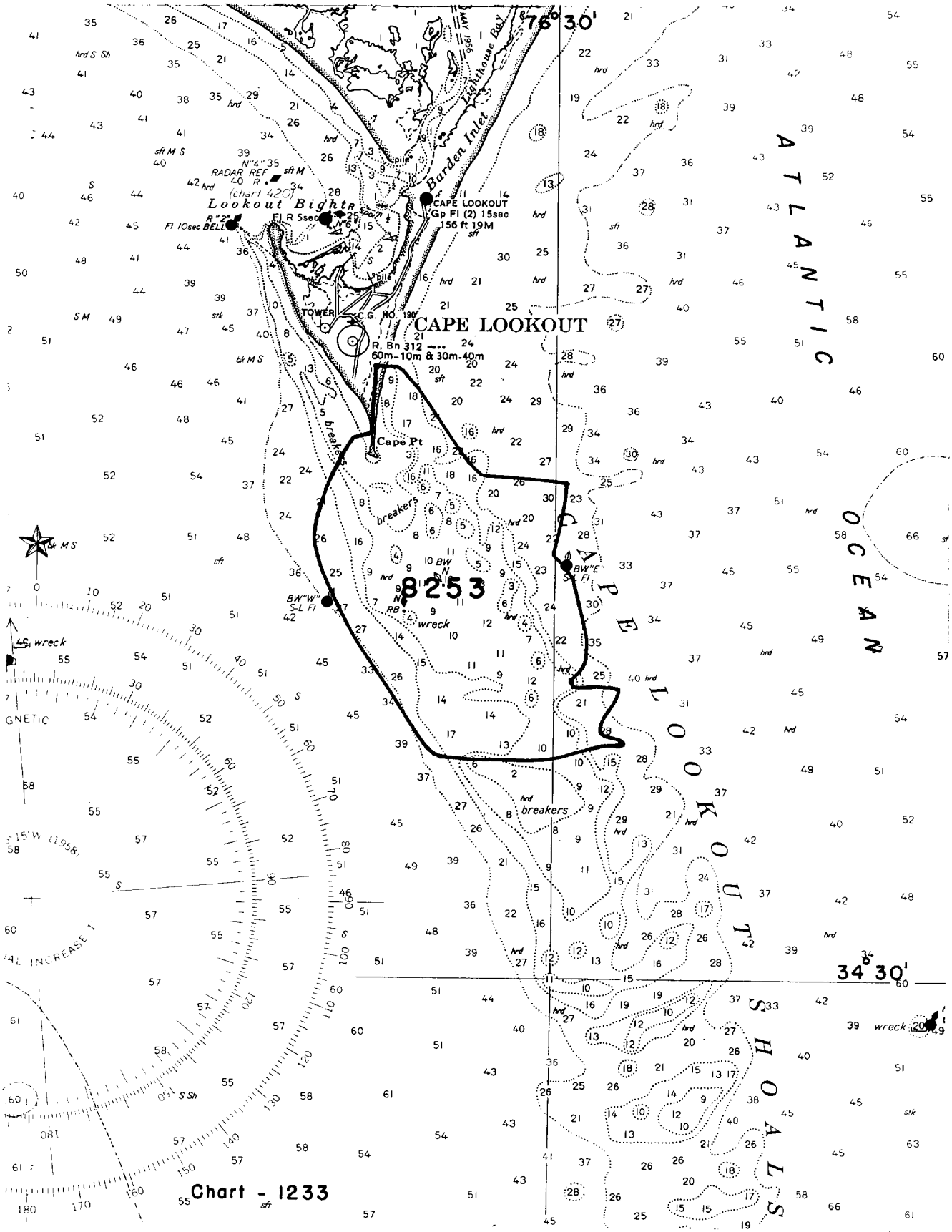
Examined and Approved:

F.E. Waugh
Chief,
Nautical Chart Division
1/12/61

Ernest B. Lowry
Assistant Director,
Office of Cartography

Projects Officer,
Operations Division
2/7/61

K. O. Emery
Assistant Director
Office of Oceanography


76° 30'
34° 30'
Barden Inlet
Lighthouse Bay
CAPE LOOKOUT
Gp Fl (2) 15sec
156 ft 19M
Lookout Bight
Fl R 5sec
Fl 10sec BELL
RADAR REF
(chart 420)
TOWER
C.G. NO. 190
CAPE LOOKOUT
R. Bn 312
60m-10m & 30m-40m
Cape Pt
breakers
wreck
BW"W"
S-L Fl
BW"E"
S. Fl
8253
ATLANTIC OCEAN
CAPE LOOKOUT SHOALS
GNETIC
Chart - 1233

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8253

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
7/8/58	1233	J.G. McGann	Before ~~After~~ Verification and Review Partially applied.
9-22-58	1234	R.E. Elkins	Before ~~After~~ Verification and Review 3MG Partly applied thru cht 1233 drg #15.
3/9/59	1110	HC Andersen	Before ~~After~~ Verification and Review Part. App. thru cht 1233 drg #15
10/20/60	420	O. Svendsen	Before ~~After~~ Verification and Review Part. App. subm wk Drg. #20
12/31/60	1233	E. Thomas	~~Before~~ After Prel. Verification and Review Considered completely applied
2/15/61	1234	J.H. Eaton	~~Before~~ After Verification and Review for Elkins Considered comp. applied.
1/31 62	1110	J.J. Streifler	~~Before~~ After Verification and Review thru 1233 Drawing #18 Considered fully applied
12-14-67	420	H. Radden	~~Before~~ After Preliminary Verification and Review ≠ Inspection Exam. No Corr Considered fully app'd.
			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.