

# 6129ab

WIRE DRAG

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<p>Form 504 Rev. Dec. 1933</p> <p>DEPARTMENT OF COMMERCE U.S. COAST AND GEODETIC SURVEY R. S. PATTON, DIRECTOR</p> <p><b>DESCRIPTIVE REPORT</b></p> <p><del>XXXXXXXXXX</del> } Hydrographic } Sheet No. <u>1 &amp; 2</u></p>	
State <u>North Carolina</u>	
LOCALITY	
<u>Approaches to Cape Fear River</u>	
<u>(SPECIAL DRAG SURVEYS)</u>	
_____	
<u>1936</u>	
CHIEF OF PARTY	
<u>R. P. Eyma</u>	

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 1

REGISTER NO. H6129a

State North Carolina

General locality ~~Approaches to Cape Fear River~~

Locality Entrance to Cape Fear River

Scale 1-20,000 Date of survey July - Sept., 1936

~~Vessel~~ Southport Snag Location Party

Chief of Party Lieut-Comdr. Raymond P. Eyma

Surveyed by Franz E. Okeson, Mate

Protracted by M.G. Elliott and R.P. Eyma

Soundings penciled by R.P.E.

Soundings in ~~10 fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by R.P.E.

Inked by

Verified by Buoys verified by J.A. Mc Cormick

Instructions dated June 10, 1936, 1936

Remarks: The bottom was dragged to locate obstructions detrimental to shrimp fishing nets.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 2

REGISTER NO. H6123b

State North Carolina

General locality ~~Approaches to Cape Fear River~~

Locality ~~Off Lockwood Folly Inlet and Holden Beach~~

Scale 1-20,000 Date of survey Sept., 1936

~~Vessel~~ Southport Snag Location Party

Chief of Party Lieut-Comdr. Raymond P. Eyman

Surveyed by Franz E. Okeson, Mate

Protracted by R.P. Eyman

Soundings penciled by R.P. Eyman

Soundings in ~~FATHOMS~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by R.P.E.

Inked by

Verified by Always verified by J.A. McCornick

Instructions dated June 10, 1936, 1936

Remarks: The bottom was dragged to locate obstructions detrimental to shrimp fishing nets.

Descriptive Report  
to accompany  
Drag Sheets- Field No's 1 & 2  
Cape Fear Shrimp Fishing Grounds  
North Carolina.

Authority: The work on these sheets was accomplished in accordance with Instructions and Orders dated June 10, 1936.

Limits and Scale: The work was done on sheets on a scale of 1-20,000. Sheet #1 covers the area immediately off the mouth of the Cape Fear River, extending eastward to the Frying Pan Shoals and westward to Long. 78°-12'. Sheet #2 joins Sheet #1 and extends westward past Lockwood Folly Inlet to Shallotte Inlet.

Work was carried on as long as funds were available in the areas most used by the shrimp fishermen, namely from the beach out to about 1 to 1½ miles off shore and in the bight to the eastward of the River entrance, and off the entrance whistle buoy.

Control: Control for this work was obtained from previous triangulation, a few objects located on the air photo compilation sheets T-5241 and T-5242, and from signals located on topographic control sheets "A", "B", and "C" of this party.

The launches towing the drag were located by the usual sextant fixes on the above objects; each launch obtaining a fix on the even 5 min. interval.

Methods: The drag work in this area represented a novel departure from standard drag practice in as much as it was desired to keep the drag on the bottom to find as many obstructions that might interfere with the shrimp nets as possible. It was therefore necessary to modify the usual procedure to a great extent, and to try various sorts of drags. At first a chain drag of 2000 ft. of ¼" g.i. towed by two boats was attempted. However this proved too much for the launches to tow and was subsequently shortened to 1050 ft.. At each end of the drag was a 127 lb. weight from which an upright lead to the end buoys ( 55 gal. oil drums); at 25 ft. intervals along the drag an aluminum toggle was attached, and at the 100 ft. intervals uprights were attached; the upright consisted of wire center lead line secured to an aluminum toggle for a float at the upper end, leaving enough slack in the upright so there would be no tendency for the float to lift the drag. As the drag proceeded thru the water these intermediate floats were towed under but came to the surface whenever the drag was stopped and thus gave some idea of the location of the drag with respect to the launches. A 50 meter towline of 2½" manila rope lead from each launch to the end of the drag.

The above described drag worked fairly well in deeper water and over hard bottom, but in the areas close inshore or near the river channel where a large amount of mud was encountered the chain and end weights were found to settle in the mud and stop progress in which case it was often found satisfactory to remove the end weights and buoys and tow the drag direct from the boats. When this latter method was followed a greater overlap of adjoining lines was necessary to allow for the interval between the boat and the point where the chain reached the

bottom - found on testing to be about 100 to 150 ft. from the boat.

This chain drag seemed to very effective as long as headway could be maintained; however once the drag was stopped, by obstruction, not enough spread between boats, etc., it was found very difficult to get it started again, as the chain seemed to bury in the mud and it was frequently found necessary to take up part or all of the drag and then reset it.

The chain was hauled in by winches and flaked down on deck by hand.

A rope drag was later tried out and seemed to give about the best results for all round performance with the single draw back that it was subject to excessive wear from the dragging over the bottom. This drag consisted of a coil (1200ft.) of 2"circum. manila rope with the same end weights and drums as for the chain drag, the intermediate intervals of the bight being divided into 400 ft. sections with a 10 lb. weight attached and having no uprights, floats, or toggles other than the end drums; this drag was towed similar to the chain drag with the 50 meter towline. Toward the end of the season a second coil of rope was secured to replace the first; an attempt was then made to use both lengths. The two were shackled together giving a length of drag of 2400 ft. that worked very satisfactorily with the only exception that a slower rate of progress along the line was made but giving approximately double the effective width.

The regular wire drag ground line was tried out a few times in varying lengths up to 3700 ft. but was found to be unsatisfactory and was discarded. This drag was hard to handle with the improvised gear, would apparently cut into the mud bottom stopping progress, and was also found at other times not to follow the bottom close enough - missing obstructions previously found.

During the dragging frequent tests were made to insure that all parts of the drag were following the bottom. These tests and the appearance of the drag when brought to the surface gave every indication that it had been following the bottom with the lone exception of the wire drag.

Whenever the drag fouled an obstruction the best procedure was found to be that of taking up the drag to the point of "hang" (keeping enough strain on the drag to hold it against the obstruction). At the point where the drag line was brought to a vertical position the temporary marker would be dropped, the bottom sounded and tested with the lead to determine, if possible, the nature and extent of the obstruction, and the drag then cleared for proceeding. On a few occasions parts of wreckage were brought up with the drag; on others the chain or rope would have to be cut to clear the drag; also on a few occasions there would be evidences of the appearance of iron rust or wood particles adhering to the drag.

Nature of Obstructions: A complete investigation as to the nature and extent of the obstructions found would require a much greater expenditure of time and funds than were available for the present work, undoubtedly necessitating the services of a competent diver with attendant equipment. It was found next to impossible to obtain adequate information by the use of the hand lead as usually there was very little, if any, change in depth noted and the "feel" of the lead gave only a vague clue; additional information was more often obtained by an examination of the drag after clearing.

To have surrounded the obstruction by dragging in from various directions would have been time consuming and served little useful purpose other than determine the possible extent of the "hang", which, if large, would be detected by adjacent drag strips.

The following tabulations can therefore only be accepted as our best estimations from the meagre evidence obtained; the obstructions being referred to by means of the U.S.L.H. Service buoys marking them:

Apparently metal wreckage: Buoys "AA", "BB", "G", "GG", "H", "I", "J".

" wreckage (wood or iron) : "66", "B", "D", "E", "R", "S", "T".

" rock (coral reef) : "DD", "EE", "FF", "K", "L", "M", "N", "U", "V".

Undetermined : "A", "C", "F", "O", "P".

In addition to the above list there were other "hangs" found over which, at present, no permanent buoys have been placed (and which seem likely to remain unmarked due to the shoal water and proximity to the beach).

2 The characteristics of these follow (referred to by their position numbers):

Stumps, logs, or old snags (area immediately inshore is covered by old stumps and snags to the waters edge where the beach has been washed away during recent years): 5D, 7D, 26D. (off the old searchlight tower on Caswell Beach.)

Wreckage: 31E, 34GG, 5C (off the beach westward from Oak Island C.G. Station.)

" : 2L, 57K, 5K, 26K, 23K, 17K, 11K (off Baldhead Beach).

Rocky or coral reef: 18A, 16B, 36MM (apparently part of the coral formation reported to extend from buoy "DD" to the group "K"- "L"- "M"- "N". (off entrance buoy).

" : 38Z, 40Z, 77BB, 78BB (part of above reef  $3\frac{1}{2}$  miles NW of entrance whistle buoy.)

3 On several occasions the drag would appear to hang and then shortly afterward would come free before an investigation could be made; frequently the drag was reversed several times over the area to try to rehook the spot; also many times this apparent hanging and free was found to be due to mud.

4 A few splits remain in the area which exhaustion of funds prevented from being thoroly examined. However most of them are rather small or in unimportant areas and it is believed that most of the bad "hangs" have been located from information gathered from the shrimp fishermen. In this connection however it is desired to bring out the point that an entirely satisfactory method of covering the ground would probably require dragging the entire area in at least two directions. There were reports that occasionally a net would be fouled when proceeding in an opposite direction from a previous drag when no difficulty was encountered. Of course these reports are subject to some question as the fishermen are not in a position to know their exact location when dragging back and forth.

5 Another point that can not be emphasized too much is the fact that many of the fishermen persist in dragging in an area known to be foul and not allow enough clearance for possible obstructions. This was brought out from reports of foulings after temporary buoys had been set; statements often being made that the buoy was cleared by as much as "25 to 50 ft." (quite evidently not taking into account the scope of the buoy nor the possible extent of the obstruction)

Accordingly notices were posted giving the locations of "hangs" and

warnings that all buoys and "hangs" should be given a clearance of at least 100 yds.

*to here*

Statistics:

SHEET #1

<u>Date</u>	<u>Day</u>	<u>Positions</u>	<u>Miles</u>	<u>Date</u>	<u>Day</u>	<u>Positions</u>	<u>Miles</u>
7-23-36	A	21	1.5	9-2-36	AA	40	6.0
7-28-36	B	16	2.4	9-3-36	BB	78	14.0
8-1-36	C	5	- -	9-5-36	CC	33	6.1
8-3-36	D	26	4.9	9-9-36	DD	22	3.8
8-4-36	E	52	8.3	9-12-36	EE	29	4.3
8-6-36	F	64	10.6	9-14-36	FF	21	2.9
8-7-36	G	59	10.2	9-15-36	GG	42	6.3
8-8-36	H	33	5.8	9-17-36	HH*	10	- -
8-10-36	J	51	6.3	9-18-36	JJ*	5	- -
8-11-36	K	57	6.5	9-19-36	KK	28	4.5
8-12-36	L	62	9.4	9-21-36	LL	54	7.6
8-13-36	M	49	8.0	9-22-36	MM	36	5.0
8-14-36	N	47	8.2	9-23-36	NN	39	4.9
8-18-36	P	74	12.8	9-24-36	PP	57	8.2
8-19-36	Q	56	8.2	9-28-36	QQ	64	11.5
8-20-36	R	68	9.7	10-6-36	RR*	8	- -
8-21-36	S	57	8.3				
8-25-36	T	68	10.0				
8-26-36	U	80	11.5				
8-27-36	V	19	2.7				
8-28-36	W	7	1.3				
8-29-36	X	12	1.7				
8-31-36	Y	82	16.4				
9-1-36	Z	41	6.7				

Total for Sheet #1.

Positions - 1672

Stat. mi. - 256.5

Sq. stat. mi. - 31.9

SHEET #2

9-9-36	A	55	9.1
9-10-36	B	61	10.4
9-11-36	C	48	7.5
9-14-36	D	21	3.6
10-6-36	E*	5	- -
<u>Total</u>		190	30.6

Sq. stat. miles.- 5.1

\* Note: The work on these days was done from the U.S.L.H. Tender "CYPRESS" and consisted of planting permanent buoys. To date 28 permanent buoys have been placed - about 53 obstructions were found - however some of these permanent buoys mark an area of several "hangs", and some of the other "hangs" were in water considered too shoal for permanent marking and maintaining.

*Raymond P. Eyman*  
 Raymond P. Eyman,  
 Chief of Party.

1935  
1935

Remarks

Decisions

	Remarks	Decisions
1		
2		
3		
4		
5		
6		USGB decision
7		
8	<u>Lockwoods Folly</u> U.S.G.B. April, 1935	USGB decision
9		
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23*		

GEOGRAPHIC NAMES  
Survey No. **H6129 a**

**H6129 b**

On Chart No. **424, 1236**  
 On Previous survey No.  
 On U. S. quadrangle Maps  
 From local information  
 On local Maps  
 P. O. Guide or Map  
 Rand McNally Atlas  
 U. S. Light List

Name on Survey

A B C D E F G H K

<u>Cape Fear River</u>	✓ app'd										1
<u>Cape Fear</u>	✓ app'd										2
<u>Smith Island</u>	✓ app'd										3
<u>Bald Head</u>	✓ app'd										4
<u>Oak Island</u>	✓ app'd										5
<u>North Carolina</u>	✓										6
											7
<u>Lockwoods Folly Inlet</u>	✓ app'd										8
											9
											10
											11
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Names underlined in red approved  
 by SAE on 3/16/37

500

TIDE NOTE FOR HYDROGRAPHIC SHEET

November 18, 1936.

Division of Hydrography and Topography:

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

Plane of Reference

~~These records~~ are approved in  
11 volumes of sounding records for  
wire drag and

HYDROGRAPHIC SHEET 6129 a-b

Locality Entrance to Cape Fear and Lockwood Folly Inlet, N. C.

Chief of Party: R. P. Eymann in 1936  
Plane of reference is mean low water reading  
1.6 ft. on tide staff at Southport  
11.1 ft. below B.M.1

Height of mean high water above plane of reference is 4.1 feet.

Condition of records satisfactory except as noted below:

*H. Eymann*  
Chief, Division of Tides and Currents.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. H.6.129 a and b

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

Number of positions on sheet	..186✓
Number of positions checked	....!!
Number of positions revised	....0.
Number of soundings recorded	.....
Number of soundings revised	.....
Number of signals erroneously plotted or transferred	...0..

Date: *Nov. 24, 1936*

Verification by *J. A. Mc Cormick* Time: *6 hrs.*

Review by *R. J. Christman* Time: *7 hrs*

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6129 b**

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

Number of positions on sheet	.....
Number of positions checked	.....
Number of positions revised	.....
Number of soundings recorded	.....
Number of soundings revised	.....
Number of signals erroneously plotted or transferred	.....

Date:

Verification by

Time:

Review by

Time:

Verifier's Report on H-6179a, b.

Remarks:

These sheets are not regular wire drag sheets. The bottom wire or chain was ragged along the bottom, therefore effective depths cannot be shown.

Soundings obtained are considered of no value by Commander Eymann. Lieut. Green, Chief of Field Records Section, instructed that no soundings be inked. Verifier inked symbols at positions of buoys planted by Lighthouse Service. These buoys are 2nd and ~~3rd~~ 3rd class mens and cans painted in black and white horizontal stripes. Commander Eymann agreed with the verifier that it was not important to ink the characteristics of the buoys. In some cases, the records did not give the characteristics.

No attempt was made to verify the plotting of the drag strips.

Control:

Shoreline and signals are from T-6493, T-6494, T-6495 and air photo compilations T-5241 and T-5242.

Boat sheets are too bulky to place in the tube. Lieut. Green instructs that boat sheets be destroyed when smooth sheets have been approved.

Nov. 24, 1936.

Submitted,

J. A. McCormick

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6129 a & b (1936) FIELD NO. 1 & 2

Entrance to Cape Fear River and Lockwood Folly Inlet, Cape Fear, North Carolina  
Surveyed in 1936, Scale 1:20,000.

Instructions dated June 10, 1936 (R. P. Eyman)

Locating and marking obstructions.      3 Point fixes on shore signals.

Chief of Party - R. P. Eyman  
Surveyed by - Franz E. Okeson  
Protracted by - M. G. Elliott, R. P. Eyman  
Verified and inked by - J. A. McCormick

1. Purpose of Survey

The survey was made for the purpose of locating and marking obstructions that would be harmful to the nets of shrimp fishermen operating in the area.

The Descriptive Report satisfactorily covers all items of importance.

2. Shoreline and Signals.

The shoreline and signals are derived from graphic control surveys T-6493, T-6494, and T-6495 of 1936; and from air photo compilations T-5241 and T-5242 of 1934

3. Results of Survey.

Numerous obstructions of various kinds were located by the survey. 28 of them being later marked with special buoys by the Lighthouse Service. These buoys are shown on the sheets. The unmarked obstructions "over which, at present, no permanent buoys have been placed (and which seem likely to remain unmarked due to shoal water and proximity to the beach)" are shown on the sheets by their position numbers only. They are listed on page 3 of the Descriptive Report. The depths over the obstructions were obtained with an old style sash cord lead line and according to verbal information from the chief of party, are not reliable enough for charting purposes. The soundings, therefore, have not been inked on the sheets.

The general area covered by the "sweeping" is outlined in ink. Several small splits within the general area are also outlined in ink.

4. Comparison with Chart 424 (New Print dated July 22, 1936)  
Chart 1236( " " " Oct. 12, 1936).

The buoys marking the obstructions were charted from advance information furnished by the field party (chart letter 692 of 1936.) Since

receipt of this letter additional obstructions have been marked by the L. H. Bureau. All the buoys placed are shown on the sheet and the charts should be made to conform thereto. Since the purpose of the survey was to locate obstructions and not to determine effective depths in the area, no further comparison with the chart was necessary.

5. Additional Field Work Recommended.

No additional work is required. Attention is directed to paragraph 4, page 3 of the Descriptive Report.

6. Reviewed by R. J. Christman, Nov. 30, 1936.

Inspected by A. L. Shalowitz.

Examined and approved:

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

*L. O. Pollock.*  
Chief, Division of Charts.

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

*G. W. Hude*  
Chief, Division of H. & T.