

9871

WIRE DRAG

Diagrams 1222-4 & 1227-2

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Type of Survey WIRE DRAG
Field No. R/H-20-1-76
Office No. H-9871 W.D

LOCALITY

State Virginia
General Locality Atlantic Ocean
Locality Chesapeake Bay Entrance

1976

CHIEF OF PARTY
CDR R.A. Ganse

LIBRARY & ARCHIVES

DATE August 23, 1982

ea 2
HTS
12221V
2220
2200V
2207V
2254
2208
2222V
2205AN

to sign off see
Record of Application

HYDROGRAPHIC TITLE SHEET

H-9871

INSTRUCTIONS - 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.

R/H-20-1-76

State VIRGINIA

General locality ~~EAST COAST INVESTIGATIONS~~ Atlantic Ocean

Locality ~~ENTRANCE TO CHESAPEAKE BAY~~ Entrance

Scale 1:20,000 Date of survey 18 FEB. - 13 MAY 1976
10 NOV. 1975: CHANGE NO. 1

Instructions dated 28 FEB. 1976, SUPPLEMENT TO INST Project No. OPR-515-RU/HE-76
Amendment

Vessel RUDE (ASV-90) AND HECK (ASV-91)

Chief of party CDR R.A. GANSE

Surveyed by CDR GANSE, CDR CROZIER, LCDR BUSH, LTJG RENNINGER, ENS VADNAIS, ENS GROSS

Soundings taken by ~~echo sounder, hand lead, pole~~ Wire Drag & Bryson Gage

Graphic record scaled by _____

Graphic record checked by _____

Protracted by _____ Automated plot by _____

Verification Soundings pencilled by D.V. Mason, B.J. Stephenson, M.B. Hickson

Soundings in ~~XXXXX~~ feet at MLW ~~XXXXX~~ PREDICTED TIDES

REMARKS: The following data are filed with the field records:

Daily Raydist Correctors

Parameter Projection Forms

Electronic Control Parameters

Project Instructions

All times are based on GMT.

9-5-84 STANDARDS CLK'D

C.LOY

DESCRIPTIVE REPORT
TO ACCOMPANY H-9871 WD
WIRE DRAG FIELD NO. 20-1-76
PROJECT OPR-515-RU/HE-76

A. AUTHORITY

This project was authorized under project instructions OPR-515-RU/HE-76, East Coast Investigations. Dated 10 November 1975, amended 3 February 1976 by change no. 1 supplement to instructions.

B. CHARACTER AND LIMITS OF WORK

The purpose of this project was to investigate 16 items in the Chesapeake Bay Entrance area. This report covers the completion of ~~10~~⁹ of those items and the partial work on ^{two}~~one~~ items. The area is covered by C&GS Charts 1222 and 1227. A scale of 1:20,000 was used for this survey. ↑ One major boat-sheet was used with three subplans. *See the Verification Report.*
See section 5. of the Verification Report.

C. CONTROL

Raydist Stations - Raydist DR-S Range-Range operating at a frequency of 3300.4 KHz was used during this project. A lane width was 45.39904 meters. Two Raydist stations, RAY-2-75, 1976 2-75 and GRAVITY,¹⁹⁶⁵ were utilized for control. RAY-2-75 located at Latitude 36°55'49.5852", Longitude 76°01'01.3925" operated as the red station. GRAVITY,¹⁹⁶⁵ located at Latitude 36°40'31.453", Longitude 75°54'56.471" served as the green station. *Control for Item 1 was visual. See Attachment I of this report and Wire Drag Volume III of X for the Visual Signals.*

A third station, J.B. POINT, was an imaginary point on land for which our small Hewlett Packard HP-65 was to be used to give Raydist values from visual sextant angle fixes. The items intended for this were never started thus this imaginary station was never used.

D. DATE OF SURVEY

(H-9871)
Work on boatsheet 20-1-76 commenced 18 February 1976 and ended on 13 May 1976.

E. TIDE REDUCERS - *Smooth (Approved) tides have been applied to this survey. See the Tide Note attached to this report.*

Tide reduction of each days data was completed by using predicted tides. Hampton Roads was the reference station. Due to the location of the items different ratios and time correctors were used.

	<u>TIME</u>		<u>HEIGHTS</u>		<u>RATIO</u>	
	<u>HIGH</u>	<u>LOW</u>	<u>HIGH</u>	<u>LOW</u>	<u>HIGH</u>	<u>LOW</u>
ITEM 1	-0hr 48min	-1hr 12 min	0.0	0.0	1.12	1.12
ITEM 2,3,4, 7,8,9,10,11	-2hr 06min	Same as high	0.0	0.0	1.33	1.33
ITEM 5,6,13, 12,14	1hr 54min	Same as high	0.0	0.0	1.35	1.35

NOTE: ITEM #4 the "TIGER" wreck was located farther south than the other items in its group. The correctors listed above were used, however, for the smooth tides a more accurate corrector should be applied.

F. JUNCTIONS AND SPLITS - *This survey junctions with H-9293 WD (1972). Six splits exist on the present survey. See the Verification Report.*
~~There were no junctions or splits on this boatsheet.~~

G. INCOMPLETE ITEMS

All items except for item number 7 were completed. A negligible amount of item 7 was completed to survey standards, however over one half the area (the southern half) was completed by what might be termed reconnaissance grade wire drag. The drags were substandard because such excessive lifts were encountered at times that the officer in charge felt that even lifts that were better behaved were open to question. This reconnaissance grade work should not merely be thrown away as it will be very valuable in planning a future attempt on this item. When an area is very littered, knowing where the obstructions lie greatly facilitate planning the drags.

Item 1 is not complete - see the Verification Report.

H. CURRENTS

Currents created problems for the items near the beach, especially for item number 1 inside the Chesapeake Bay Entrance. Near the shore currents were over 1 knot and ran parallel to the beach. For item 1 currents approached 2 knots and essentially made wire drag impractical during times of maximum current. Items near the shore that had current problems were 5, 6, and 7. Currents at these items tended to be layered and produce extreme lifts. When work is resumed on item 7 it should be planned for times of neap tides.

I. WAVES

1. Waves were uniform in height in this region. The wave heights reported in the drag information stamps correspond roughly to the average of the upper third waves. There were few ~~rough~~ waves.

2. Several times large period swell that ^aaffected the entire system (both the wire and tester at the same time) was encountered. This was handled individually in each case by adding a new corrector to the effective drag depth. That figure was one-half the amount of large period swell. This large period swell only affected a few drags.

J. DIVING PROCEDURES

Diving procedures for this project consisted on diving on every possible unknown hang. In a few cases temporary hangs prevented diving. Full wet suits were worn. Visibility varied from 1 foot to about 20 feet. - *Six hangs were not investigated on this survey.*

K. TESTING

1. Results of the tests are recorded in both the rough and smooth tester record volumes. There is one difference in how these values were recorded. In the rough tester records the actual height of the mark on the tester pole was recorded. No attention was paid to the depth of the tester. In the smooth tester record the test was recorded corrected to the wire depth. The smooth test record shows the actual lift and sag.

2. In the smooth test record launch 20 has an asterisk (*) next to the section they tested.

3. Definition of a SAG MISS: A test in which the tester rod has definitely been thrown in ahead of the ground wire, and picked up after the ground wire has passed yet has no marks on the pole. The wire has passed underneath the pole. Such a test puts an upper limit on the amount of lift. This limit is recorded in the smooth tester record preceded by an algebraic less than symbol. When this value reduces the lift or is the sole test ~~is~~ ⁱⁿ a given section it is assumed to be the lift.

4. Definition of TOB: TOB refers to "tester on bottom". It is a test result that occurs when the tester rod shows signs of having touched the ocean floor. Lifts associated with this type test are generally not accepted because of the uncertainty as to where the ground wire struck the rod.

It is likely that if the tester rod is stuck in the ocean floor the ground wire might first ride up the rod until enough force was generated to push the rod away. NOTE: In some cases tests have been validly recorded with both TOB and SAG MISS. This combination is possible in moderate swell and when the ground wire is close to the bottom.

L. CALCOMP PLOTS

One addition this boatsheet report and data being submitted is that computer plots are being sent in with the report. These plots were done by data processing at AMC. The plot has been adjusted for the Raydist correctors. Hangs have been plotted in by hand. These plots are intended to be used as the finished smooth plot. Only the addition of the effective depth (which must await smooth tides) and the drafting of a composite A&D sheet remains. Except for the correctors listed in Section M, a listing of differences of correctors discovered after the plots were finished, there are no other discrepancies. The plots that have an error in correctors (at most 1/10 of a lane) can either be replotted or merely checked to make sure in no case did that decrease the overlap to a critical level.

M. RAYDIST CORRECTORS

SHIP	DAY	CORR.		ADJUSTED	
		USED ON		CORR.	
		R	G	R	G
RUDE	V	+ .2	+ .2	+ .2	+ .3
HECK	F	- .6	- .4	- .5	- .4
HECK	J	- .3	- .2	- .2	- .1
HECK	Q	- .2	- .1	- .2	0.0
HECK	AH	0.0	- .1	- .1	- .1
HECK	M	- .1	+ .1	- .1	+ .2
HECK	N	- .3	0.0	- .2	0.0

N. GENERAL NOTES

1. Saw Tooth Record

a. At the end of each drag it is important to know that the ships are moving properly. Before Raydist it was not possible to see if the ships were moving normally at the time of the last fix. The Raydist's saw tooth recorder

gives a permanent record of movement of the ship at all times. The Raydist strip chart was checked at the end of each drag to ascertain proper ship movement before the drag was aborted.

b. By use of the saw tooth strip chart one can tell the path of the ships between fixes. This fact may be important in specific cases where it is possible that between fixes the proper overlap may not have been met.

c. Relative Pen Lengths. In most cases the three pens were not exactly the same lengths. This means that you cannot read the strip chart properly without adjusting for the relative pen lengths. On each days strip chart the relative pen lengths are recorded on a rubber stamp mark.

d. As per project instructions, items 3, 5, 7, 8, 9, 10, and 11, were dragged to a one mile radius circle about the given position. Reasons for this was that background information from the H.O. wreck list stated that the accuracy of the position was one to three miles. NOTE: Item 7 was never completed. Item 6 was dragged to a one mile diameter circle centered at the given position, as the H.O. wreck list information stated the accuracy of that position was to within one mile. That background information for item 6 was highest category for positioning the wreck list has. There was no reason to question that the position was approximate or doubtful. CAM101 was informed of our intentions and requested to inform us if a larger circle was required.

O. DISCREPANCIES AND COMPARISONS WITH RECENT CHARTS

Except for one wreck that investigations might be reopened on there were no discrepancies found with charts used in FE-77 (F.E. No. 3, 1949) this area. The wreck of the SANTORE cleared in 1949 to 37 feet located at approximately latitude $36^{\circ}54'N$ and $75^{\circ}47'W$ was swept in one direction to an effective depth of 4X feet while working on item 11. Although one sweep is ~~hardly adequate~~ *less than desirable* for changing the cleared depth of 37 feet it does suggest that possibly the wreck has settled some feet. *Concur*

P. PERSONNEL AND EQUIPMENT

During this survey the RUDE & HECK acted as guide and end vessel respectively. Both vessels are equipped with Raytheon DE-723 fathometers. Both launches were utilized as drag tenders. Bearings to the end buoys and opposite vessels were made on Sperry gyro repeaters. Standard wire drag equipment was used throughout this survey. The officers aboard this survey were: CDR R.A. Ganse, CDR R. Crozier, LCDR Y.A. Bush, LTJG Renninger, ENS Vadnais, ENS Gross.

O. GYRO ERROR

a. At the beginning of the survey both vessels gyro worked properly. On X day, 13 April 1976, the HECK discovered a variable gyro error ranging from zero error to a couple of degrees. This error remained for the remainder of the survey.

b. Gyro error is considered in the computer plots by use of a special notation in column 69 of the parameter sheets. A copy of that notation and its explanation is listed below.

c. Gyro Error Options
Guide Vessel Options

		1	2	3
End	1	A	B	C
Vessels	2	D	Blank	*
Options	3	E	*	*

*not permissible combination

1, 2, and 3 refer to these 3 conditions.

Condition 1. No gyro error, the gyro has been steady and behaving well. It is more likely that any error is observers fault and not the gyro.

Condition 2. Gyro error is the difference between observed bearing to the other ship and the true bearing determined by the ships computed Raydist positions. This condition is used when ships gyro is in error but all electronic data is assumed to be reliable.

Condition 3. Gyro error is the difference between the ships observed bearing to the other ship, and the other ships reciprocal bearing back to the observing ship. Essentially in this case one is using the other ships gyro. This option is used when both the observing ships gyro and electronic data is questionable.

III. ITEM 1

A. STATEMENT ON ITEM 1

Item 1 consisted of three wrecks at about latitude 36°58'N and 76°02'W located near the buoy R "2CH". These wrecks had been previously dragged in another survey. Our purpose was to determine if any change had taken place. *H-7028 WD (1945) 100*

See section 4. b. of the Verification Report. pg 3 of V.R. Item 4. b. 3) a), b) & c)

B. GROUNDINGS AND HANGS

Drag H-1 hung at the position of the wreck previously cleared to 37.0⁵ feet. Drag H-1 hung at an effective depth of 38.5 feet there were no clearing strips for this obstruction as the previous survey had cleared it to 37.0² feet. *H-7028 WD (1945)*

C. NOTED OCCURANCES DURING SURVEY

Work on this item was unusual for several reasons. First it was done visually, no Raydist stations were used. Second currents were so severe that all but one drag, H1, were rejected, 4 drags were rejected. Third this was an extension of a prior survey rather than a new item. *H-7028 WD (1945)*

D. SUMMARY

Drag ^{H-1}~~H1~~ hung the shoalest of the three wrecks at 38.5 feet. Logically the most the wreck could then be cleared by would be 37.5 feet. That figure matches the charted cleared depth at 37.0 feet. H1 drag confirms that the obstruction previously cleared to 37¹/₂ feet is still there and at the same depth. There was no need for clearing strips as the previous survey had cleared it at 37¹/₂ feet. The two other wrecks were not dragged. The logic used, concurred by CAM1, was that if the 37 foot wreck was still at the same depth it would matter very little if the two other ones had changed. 37¹/₂ feet would still be the controlling depth for that area. *Since no documentation can be found that what was accomplished was sufficient, this item is considered incomplete. Do not concur - The A.C. evaluator agrees with the hydrographer's reasoning.*

E. RECOMMENDATIONS

This survey recommends that no changes be made in the manner of charting these obstructions. *Concur ✓*

IV ITEM 2

A. STATEMENT ON ITEM 2

Item 2_A was the obstruction at the "CB" buoy position latitude 36°51.3'N and longitude 75°50.9'W. This object had been dragged in a previous survey and cleared to 43 feet. Our purpose was to determine any change. *from H.O.N to M7 of 1944*

See the Verification Report pg. 3 Item 4. b. 4)

H-6976 WD (1945-47) - only cleared the reported position - never hung the item.

B. GROUNDINGS AND HANGS

1. C-2 drag hung at an effective depth of ⁴⁵/₂ feet at position latitude 36°51.33'N, longitude 75°51.¹⁰~~09~~'W. It was cleared by strips D2 at ~~43.5~~ feet (NW direction), and D3 at 44.0 feet (SE direction).⁴⁴

2. D1 drag hung at an effective depth of ⁵⁰/₅ feet at position latitude 36°51.33'N and longitude 75°51.10'W. It was cleared by strips D2 and D3.

3. D4 drag hung at an effective depth of ⁵⁰/₅ feet at position latitude 36°51.3~~3~~'N and 75°51.1~~1~~'W. It was cleared by strips D2 and D3.

C. NOTED OCCURANCES DURING SURVEY

1. The Coast Guard Tender MADRONA removed the buoy "CB" for a period to allow us to wire drag the obstruction.

2. It is likely that clearing strip D3 had a temporary hang on the obstruction. See the journal of D3 for more information.

3. Divers found the wreckage to be most likely a large intact piece of an old navigation buoy. In any case it was a round metal casing about buoy size that seemed cut into half. Divers reported that the obstruction would be equally likely to hang from any direction.

D. SUMMARY

The three hanging drags found the position of the obstruction to be off from both the "CB" buoy and the previous survey. The obstruction was found ~~about 1000 feet west of the~~ ^{approximately 350 meters west of the} "CB" buoy. AMC operations was immediately notified. It was ^{charted location of} assumed that AMC notified the Coast Guard as we suggested, however no mention of it appeared in the Local Notice to Mariners.

E. RECOMMENDATIONS

This survey recommends that the cleared depth ^{be changed} ~~remain at 48~~^{to} feet but that the position of the wreck be changed to the position we found. It is possible that this obstruction can be removed fairly easily. Removal of it should be considered. - Concur ✓

V. ITEM 3

A. STATEMENT ON ITEM 3

PSR - Item 3 was reported to be a wreck at latitude 36°50.4'N longitude 75°49.2'W. The wreck falls in the approach to a Chesapeake Bay traffic lane. A one mile radius circle about this position was dragged. See general notes for further information.

} See the
Verification
Report
Section 4.b.4)
(Section 5.A.1)

B. GROUNDINGS AND HANGS.

There were no groundings or hangs.

C. NOTED OCCURANCES DURING SURVEY

None.

D. SUMMARY

Item 3 was covered to a 1 mile radius circle about the given position of the wreck. The area was covered by three drags (J1, K1, L1). No obstruction was found.

E. RECOMMENDATIONS

This survey makes no recommendations concerning the non-dangerous wreck symbol marking item 3 as there is some confusion as to the philosophy (1957) behind charting non dangerous wrecks. Clearing an area by wire drag does not disprove the existence of a possible wreck. The survey only proves that it does not constitute a danger to navigation. Item 3 was properly charted as a non dangerous wreck. This command on its own initiative does not recommend a change in the method of charting non dangerous wrecks. Possible consideration should be given to show that the area was cleared to a certain depth. However that is complicated by the problem that no position for the wreck was found. - Concur - See the Verification Report Section 5.a.1) pg 4

VI. ITEM 4

A. STATEMENT ON ITEM 4

Item 4 is the "TIGER" wreck located at latitude 36°45.9'N, longitude 75°46.3'W. This item had been dragged in a previous survey. Our purpose was to determine if any change had taken place. *FE-77 (F.E. No. 3, 1949)*

} See the
Verification
Report Section
4.b.

B. GROUNDINGS AND HANGS

1. B2 drag hung very near the given position for the "TIGER" wreck. Effective depth was ~~42.0~~ feet at position latitude
43

36°45.9⁵'N, longitude 75°46.31'W. This hang was cleared by strips B4 in a SW direction (effective depth ~~42.5~~ feet) and C1 in a NE direction (effective depth at 43 feet). The reason these are lower than the 42 feet the obstruction was hung at are due to the manner in which the effective depth is figured. From our information it appears that B2 drag most likely hung at about 44.0 feet. (See journal for B2 day).

correct - applied as hang depth

C. NOTED OCCURANCES DURING SURVEY

1. Predicted tides used were based upon Hampton Roads reference station with a time corrector of minus 126 minutes and a ratio of 1.33. This was considered sufficient for our work. However this item was farther south than the others in the group using these tides. More accurate time and ratio factors should be used. - *Smooth (Approved) Tides have been applied*

2. The Coast Guard Tender MADRONA temporarily removed the buoy "RV" that marked the "TIGER" wreck.

D. SUMMARY

The drags on the "TIGER" wreck shows that the wreck *Position is slight- is at the same location as the prior survey but it seems to be different have settled some. Clearing strips were at 42.8 feet and 43.0 feet.* *than that located in 1948. Cht position as shown on the present survey.*

FE-77 (F.E. No. 3, 1949)

E. RECOMMENDATIONS.

This command recommends that the clearing depth for the "TIGER" wreck be changed in accordance with the finalized data using smooth tides. - *Concur (Hang at 44ft, cleared by 43ft)*

VII. ITEM 5 AND ITEM 6

A. STATEMENT ON ITEM 5 AND 6 *(Item 5 is PSR # 100)*

1. Item 5 is an obstruction located at latitude 36°52'00"N, longitude 75°55'00"W. Information from a 1925 Local Notice to Mariners show this item stems from an incident where a ship reported bumping the bottom at night. Since then the H.O. Wreck List reported this as a wreck, however it stems from the report of a shoal near this area.

C.L. 584 of 1925

Not available during verification

2. Item 6 is an obstruction located in latitude 36°53'17"N, longitude 75°56'09"W. This wreck was sunk in 1947 and labled as an obstruction. A one mile diameter circle centered at this item was completed. We had no reason to suspect the location was approximate or doubtful. It was not so noted on the chart and while the Navy Wreck list only states that the position is good to within one mile that is the highest category they

See the Verification Report. Section 5.a. 2. Item 6 is chtd as a subm non dangerous. wk 6 is not labeled as obstr

offer. CAM101 was informed of our intention and requested to let us know if a larger circle was required. - *Additionally see junctional survey H-9293 WD (1992)*

B. GROUNDINGS AND HANGS

1. Hang F1. Drag F1 hung an old navigation buoy in item 5 at position latitude $36^{\circ}51.6\text{X}'\text{N}$ and $75^{\circ}54.2\text{X}'\text{W}$. This buoy was intact and was removed by the Coast Guard Tender MADRONA. It was cleared by strip Q2 with an effective depth of $42.\text{X}/5$ feet.

2. Hang M2. Drag M2 hung the same object as F1 drag. Its position was latitude $36^{\circ}51.6\text{X}'\text{N}$, longitude $75^{\circ}54.2\text{X}'\text{W}$.

3. Hang Q1. Drag Q1 was a clearing strip over the area where the Coast Guard had picked up the old buoy. It hung on the counter weight from that buoy at position latitude $36^{\circ}51.66'\text{N}$ longitude $75^{\circ}54.2\text{X}'\text{W}$. It was cleared in one direction only, by drag Q2, and it was intact, and verified by divers as being equally hangable from any direction (effective depth $\frac{42.0}{43\text{E}}$ feet).

4. Hang N2. Drag N2 hung the same object as drag Q1 at position latitude $36^{\circ}51.6\text{X}'\text{N}$, longitude $75^{\circ}54.2\text{X}'\text{W}$.

5. Hang M1. Drag M1 was a mud hang in item 6 at position approximate latitude $36^{\circ}53.00'\text{N}$, longitude $75^{\circ}56.37'\text{W}$. Divers identified this as a mud hang, however on pick up the crew found the hang to be more substantial than mud. It was cleared in two directions by strips R2 (SE at 31.0 feet), and S2 (NW at 33.0 feet). - *This hang could not be plotted from data provided - additionally the hang depth shows agreement with charted depths in the given location.*

6. Hang S1. Drag S1 hung outside items 5 and 6 on an old anchor fluke, protruding 2 feet from the bottom at position latitude $36^{\circ}52.6\text{X}'\text{N}$, longitude $75^{\circ}56.55'\text{W}$. It was cleared in one direction only as it was outside the area, it was intact, and was only protruding 2 feet from the bottom. - *H-9293 WD (1992) clears in the other direction.*

7. Hang P2. Drag P2 was the same hang as S1, at position latitude $36^{\circ}52.67'\text{N}$, longitude $75^{\circ}56.5\text{X}'\text{W}$.

8. Hang S2. Drag S2 hung in item 6 at position latitude $36^{\circ}53.1\text{X}'\text{N}$, longitude $75^{\circ}56.6\text{X}'\text{W}$. Visibility was close to zero but the obstruction was small and thought to be an anchor fluke. It was cleared by strips S3 (NW at $28.\text{X}/0$ feet) and R2 (SE at 29.0 feet).

9. Groundings occurred on these drags. If more information is needed check the journals for each drag, A1, M1.

10. Temporary hang F1. F1 had a temporary hang at position approximate latitude $36^{\circ}51'.88''$ N, longitude $75^{\circ}51'.0''$ W (at an effective depth of 49 ft.) It was cleared by drags L2 (SW at 42.5 feet) and L3 (NE at 42.5 feet).

C. NOTED OCCURRENCES DURING SURVEY

1. Drags in this area, close to the beach, were difficult due to currents being strong and layered. The closer into the beach the greater the problem. Drag R2 shows this problem quite well. It was the fifth attempt at the same drag. It had high lifts on one end and low lifts on the other side caused by these currents.

2. The Coast Guard Tender MADRONA picked up one obstacle discovered, an old buoy sunk in the item 5 area. A counter weight was left behind.

3. On drag S2 a hang occurred near the end vessel. The drag was maintained in a steady state condition by having the vessel run an arc about the hang for a brief period. This is one of the few cases a portion of a drag will be kept after a hang. See journal for more information.

D. SUMMARY

Items 5 and 6 have been completed. No major wreckage has been found in either item. In item 5 a buoy counter weight is present. In item 6 there is one anchor fluke found. Another obstruction probably an anchor fluke is also in the area.

E. RECOMMENDATIONS

This survey does not recommend any changes from the non dangerous wreck symbols used in items 5 and 6. See recommendations for item 3 for more information. - See the Verification Report. "ED" be added to the sections 4.b. and 5.a.2)

Item 5 - Do not concur - Expunge the chtd non dangerous subm wk symbol. (See V.R. pg 5, item 5, a.2).
Item 6 - recommend that "ED" be added to the chtd non dangerous subm wk symbol.

VIII. ITEM 7

A. STATEMENT ON ITEM 7

Item 7 was reported to be a wreck sunk in 1945 at position latitude $37^{\circ}03'03''$ N, longitude $75^{\circ}45'54''$ W. The wreck was charted from the H.O. wreck list. It was our intention to complete a one mile radius circle about this point. Allotted time for this project ran out before it was one half completed. See general notes for information about the size of area swept.

See the Verification Report. Section 4.b. and 5.a.

B. GROUNDINGS AND HANGS

1. Hang AL1. Drag AL1 hung an old anchor fluke at position latitude $37^{\circ}02.5\frac{1}{3}'N$ and longitude $75^{\circ}46.2\frac{2}{3}'W$. It was investigated by divers. No clearing strips as time ran out.

2. Hang AM1. Drag AM1 hung an old anchor fluke at position latitude $37^{\circ}02.7\frac{1}{3}'N$, longitude $75^{\circ}47.44'W$. It was investigated by divers. No clearing strips as time ran out.

3. Hang AN1. Drag AN1 hung the same fluke as AM1 drag at position latitude $37^{\circ}02.7\frac{1}{3}'N$, longitude $75^{\circ}47.4\frac{4}{7}'W$. It was investigated by divers. No clearing strips as time ran out.

4. Hang AN2. Drag AN2 hung an anchor fluke at position latitude $37^{\circ}03.0\frac{1}{3}'N$, longitude $75^{\circ}47.5\frac{1}{3}'W$. It was investigated by divers. No clearing strips as time ran out.

5. Hang AP1. Drag AP1 hung an anchor fluke at position latitude $37^{\circ}03.12'N$, longitude $75^{\circ}47.20'W$. It was investigated by divers. No clearing strips as time ran out.

6. Groundings occurred on these drags. AL1, AM1, AN2, AP1, AQ1, AR1.

C. NOTED OCCURRENCES DURING SURVEY

1. Every drag in this area except one had groundings in them. This seems to be caused by a fairly irregular and bumpy bottom.

2. The bottom appears to be strewn with anchors. Research via AMC from the Mariners Museum indicate that in the 1800's the area was used as an anchorage area. Large drags did not work well here as they inevitably hung and took a long time to "V" up.

3. Drag AQ1 had a temporary hang at the beginning. The area had been previously swept by drag AL1. However the area needs more looking into. - *This hang could not be plotted from data provided.*

D. SUMMARY

Item 7 appears to be a fairly difficult area to wire drag. Currents were a problem at times. The bottom is irregular and bumpy. There are a lot of anchors on the bottom. Our survey has minimally swept one half of the area. It has accurately located 4 anchors. Our work should be considered re-

connaissance. - Concur - See the Verification Report, section 5. a.

E. RECOMMENDATIONS

This survey recommends that this information be given to the next field party to wire drag this item. Suggestions for dragging are to use smaller drags such as 5000 ft. drags or less to avoid every drag hanging. - Additional work is recommended for this item.

Other suggestions are dragging only at time of neap tides, and concurrently working on this item and a couple of off shore ones, using only the calmest days for item 7.

IX. ITEMS 8, 9, 10, and 11

A. STATEMENT ON ITEM 8, 9, 10, and 11

1. Item 8 is a wreck sunk in 1947 and charted from the H.O. wreck list at position latitude $36^{\circ}51'42''N$, and longitude $75^{\circ}46'02''W$. The area was cleared to a one mile radius circle about this position.

2. Item 9 is a wreck sunk in 1914 and from the H.O. wreck list at position latitude $36^{\circ}53'04''N$, longitude $75^{\circ}47'00''W$. The area was cleared to a one mile radius circle about this position.

3. Item 10 is a wreck sunk in 1917 and charted from the H.O. wreck list at position latitude $36^{\circ}53'35''N$, longitude $75^{\circ}45'41''W$. A one mile radius circle about this position was cleared.

4. Item 11 is a wreck charted from the H.O. wreck list in latitude $36^{\circ}54'58''N$, longitude $75^{\circ}46'29''W$. A one mile radius circle about this position was cleared.

Information concerning why a 1 mile radius circle was dragged can be found in the general notes.

B. GROUNDINGS AND HANGS

1. Hang U1. Drag U1 hung an intact fishing vessel named "STORMY" in item 8 at position latitude $36^{\circ}51.82''N$, Longitude $75^{\circ}46.98''W$. The vessel was approximately 40 feet in length. AMC was notified. Although it was not specifically recommended by this unit a Local Notice To Mariners was placed. No clearing strips were made on this vessel as it was intact the highest point could positively be identified, all surrounding area was cleared close to the bottom, and a Bryson gage reading was obtained on the least depth. The Bryson gage

Item 7 - Any future wire drag work in this area for this item is considered impractical. Use of side-scan sonar may be beneficial. (Bottom is littered with old anchors rising 1 to 3 ft off bottom) A diver should ascertain least depths.

See the Verification Report section 5. a.

reduced least depth (Bryson Gauge) = 53 feet

reading showed least depth at ~~54.5~~ feet. See journal for XI drag for Bryson gauge information, including an account of gauge calibration. *Chart wk as shown on present survey 53Wk*

2. Hang X1. Drag X1 hung the STORMY at position latitude $36^{\circ}51.8'N$, longitude $75^{\circ}47.0'W$. This drag was a repeat of U1.

3. Hang Z2. Drag Z2 hung the STORMY at position latitude $36^{\circ}51.8'N$, longitude $75^{\circ}47.0'W$. Small sections were used in order to photograph a hang for a training film being made. This drag hung the same object as U1 drag.

4. Hang V1. Drag V1 hung close to set out outside item 9 at position latitude $36^{\circ}51.8'N$ longitude $75^{\circ}48.03'W$. As it was outside any item and the wire had been set lower than the bottom (for a brief shall area near set out) this hang wasn't investigated. It was cleared in two directions by strips V2 (NE at 52.5 feet) and AD2 (SW at 51.5 feet).

5. Hang V3. Drag V3 hung close to set out in a fish haven outside item 10. Position latitude $36^{\circ}53.9'N$, longitude $75^{\circ}43.7'W$. It was neither investigated or cleared as it was in a fish haven. *(Do not chart)*

54 ft estimated hang depth

6. Hang X2. Drag X2 hung in item 8 at position latitude $36^{\circ}52.4'N$, longitude $75^{\circ}45.36'W$. It wasn't investigated due to lack of air bottles. It was to be hung again but both drags cleared it. Cleared by Y2 (NW at 59.0 feet) Y3 (SE at ~~58.5~~ feet).

7. Hang Y1. Drag Y1 was a double hang on buoy "S" and an old buoy weight in item 8. Position of the buoy is latitude $36^{\circ}51.96'N$, longitude $75^{\circ}45.1'W$. Position of the old buoy weight is latitude $36^{\circ}51.9'N$; longitude $75^{\circ}45.0'W$. The buoy weight was cleared in only one direction as it was intact and equally hangable in any direction. It was cleared by Z1 (West at 57.0 feet).

8. Hang Y4. Drag Y4 was the same as Y1, a double hang on the same objects. The position of the buoys was latitude $36^{\circ}51.96'N$, longitude $75^{\circ}45.1'W$. The position of the old buoy weight was latitude $36^{\circ}51.9'N$, longitude $75^{\circ}45.0'W$.

9. Hang Y5. Drag Y5 was the same as drag Y1 or Y4 but it had only one hang that being the buoy S. Hung at position latitude $36^{\circ}51.96'N$, longitude $75^{\circ}45.1'W$.

10. Hang Z1. Drag Z1 was the same as Y5 hanging buoy S at position, latitude $36^{\circ}51.9\frac{1}{2}'N$, longitude $75^{\circ}45.1\frac{1}{2}'W$.

11. Groundings. The following drags had groundings: T1, V2, X1, X2, Y2, AA1, AC1, AD1, AD2, AD3, AE1, AF2, AH1.

C. NOTED OCCURRENCES DURING SURVEY

1. There were considerable groundings in these items. Reasons for this was an irregular bottom surface and tidal changes. It was very difficult to be within three feet of the bottom without going aground somewhere during the drags.

2. In item 8 there is a small area near buoy S that technically hasn't been covered because we generally don't accept effective depths after a hang occurs. Yet this area has been swept by three separate drags shortly after they hang the buoy S. In this case that is considered sufficient. *One of three splits during the investigation of Items 8, 9, 10, & 11*

3. The broken up wreck SANTORE lies in the circles for items 8, 9, and 11. This wreck was dragged in a 1949 survey - FE-77 and cleared to 37 feet. On drag AJ2 expectations were to hang the SANTORE, after clearing part of item 11. AJ2 cleared the SANTORE at 48.0 feet. This certainly doesn't constitute making a change in how the SANTORE is charted as the drag was only in one direction. However it probably needs more looking into. AMC operations was notified of this find. *Concur*
FE-77 (F.E. No. 3, 1949)
No need to clear in both directions if no hang was encountered. Chart was cleared to 41 ft.

4. There is a small area in items 9 and 10 where the effective depth does not come within 3 feet of the bottom. This area is inside the survey area for the 1949 survey of the wreck SANTORE. As both items 9 and 10 come from wrecks in the 1910's it was felt that the 1949 survey already includes adequate coverage of the area in question. We saw no need to redrag the SANTORE as it was not one of our items, and there was no way to cover this area adequately without redragging the SANTORE. The area covered in 1949 is elliptical and includes the following points about its charted position, 1 n mile north, 1/2 n mile south, 1/2 n mile east, 1/2 n mile west. *CONCUR*
In comparison with contemporary surveys there are many areas where coverage is not within 3 feet of the bottom.

D. SUMMARY

Items 8, 9, 10, and 11 have been completely dragged and no obstructions have been found that correspond to what we were lead to believe was on the bottom. However the intact vessel STORMY was found inside item 8, along with an old buoy weight near the buoy S. *CONCUR*

E. RECOMMENDATIONS

1. This command makes no recommendations concerning the non dangerous wreck symbols over items 8, 9, 10, and 11. — See the Verification Report. For more information see the recommendations for item 3. ✓ section 5.a.

2. It is recommended that a non dangerous wreck symbol be charted at the vessel STORMY position. — Concur Do not concur. Chart a 53 ft sdg & label Wreck

3. Future work on the wreck of the SANTORE previously cleared to 37 feet in 1949 should be considered. — Concur Do not concur Chart Wk Santore as cleared by 41 ft

41 WK

APPROVAL SHEET

All records of this survey including smooth plotting, except for the addition of the effective depths (which must await smooth tides) and the drafting of a composite A&D sheet, are hereby approved. The field work was personally supervised by the undersigned. The boatsheet and records were inspected daily. The survey is considered complete and adequate for charting. ✓

Submitted by:

T.L. Renninger
Operations Officer
NOAA Ships RUDE & HECK

T.L. Renninger

Approved by:

R.A. Gause

R.A. Gause
Commanding Officer
NOAA Ships RUDE & HECK

RESPONSIBLE PERSONNEL		ORIGINATOR
TYPE OF ACTION	NAME	<input type="checkbox"/> PHOTO FIELD PARTY <input type="checkbox"/> HYDROGRAPHIC PARTY <input type="checkbox"/> GEODETIC PARTY <input type="checkbox"/> OTHER (Specify)
OBJECTS INSPECTED FROM SEAWARD		
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		OFFICE ACTIVITY REPRESENTATIVE <input type="checkbox"/> REVIEWER <input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult Photogrammetric Instructions No. 64)		
OFFICE I. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	FIELD (Cont'd) B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982	II. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75
FIELD I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Visually 5 - Field Identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75	III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75	**PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.		

POSITION NO.
DAY LETTER

BUOY NO.

LAT.

LONG.

GROUNDED EFF. DEPTH

CLEARED BY DAY STRIP NO.

CLEARED EFF. DEPTH

SOUNDING

CHARTED DEPTH

DIRECTION OF DRAG

ATTACHMENT III

REMARKS

POSITION NO. DAY LETTER	BUOY NO.	LAT.	LONG.	GROUNDED EFF. DEPTH	CLEARED BY DAY STRIP NO.	CLEARED EFF. DEPTH	SOUNDING	CHARTED DEPTH	DIRECTION OF DRAG	ATTACHMENT III REMARKS
B2	3-4	36 45.9 ⁵	75 46.31 ³	43				39	SW	TIGER WRECK ✓
					B4	43			SW	CLEARING STRIP ✓
					C1	43.0			NE	CLEARING STRIP ✓
C2		36 51.33	75 51.10 ¹⁰	45 ^{1/2}				51 ⁴³		WRECK AT CB BUOY ✓
D1	5	36 51.33	75 51.10 ¹⁰	49.5 ⁵⁰				51 ⁴³	NW	WRECK AT CB BUOY ✓
D4	2-3	36 51.3 ²	75 51.1 ¹⁰	49.5 ⁵⁰				51 ⁴³	SW	WRECK AT CB BUOY ✓
					D2	43		51 ⁴³	NW	CLEARING STRIP ✓
					D3	44.8 ^{1/2}		51 ⁴³	SE	CLEARING STRIP ✓
F1	5-6	36 51.6 ⁵	75 54.2 ⁰	44.8 ⁰				48 ⁴³	SW	#5 OLD NAV BUOY ✓
					Q2	42.8 ^{1/2}			SE	CLEARING STRIP ✓
H1	3-4	36 57.66	76 00.67	38.5				48.8 ⁰		ITEM #1 NO CLEARING STRIPS ✓
M1	3-4	36 53.00	75 56.37	N.A.				34.0	NW	MUD HANG ITEM 6 <i>Hang not plotted</i>
					R2	31.0 ⁰			SE	CLEARING STRIP <i>cleared part by 21'</i>
					S2	33.0 31 ^{1/2}			NW	CLEARING STRIP <i>part by 21', part by 31'</i> ✓
M2	3-4	36 51.6 ⁵	75 54.2 ⁰	47.5				48 ⁴³		#5 OLD NAV BUOY ✓
					Q2	42.8 ^{1/2}			SE	CLEARING STRIP ✓
N2	4-5	36 51.6 ⁵	75 54.2 ⁰	42.5 ^{1/2}				48 ⁴³	NW	#5 COUNTER WEIGHT NEAR BUOY ✓
					Q2	42.8 ^{1/2}			SE	CLEARING STRIP ✓
Q1	5-6	36 51.66	75 54.2 ⁰	43.5				48 ⁴³	NW	#5 COUNTER WEIGHT NEAR BUOY ✓
					Q2	42.8 ^{1/2}			SE	CLEARING STRIP ✓
P2	REJECT	36 52.67	75 56.5 ⁵	N.A.				30.0		<i>Same hang as strip 5 -</i>
					R2	29.0 ⁰			SE	OUTSIDE #6 HANG ON PICK UP ✓
S1	7	36 52.6 ⁵	75 56.55	N.A. <i>31' estimated</i>				30.0		SAME AS P2 - ANCHOR FLUKE ✓
					R2	29.0 ⁰			SE	CLEARING STRIP ✓
S2	7	36 53.1 ²	75 56.6 ³	32.8 ⁰				32.0	NW	ITEM #6 - POSSIBLY ANCHOR FLUKE ✓
					S3	28.8 ⁰			NW	CLEARING STRIP ✓
					R2	29.0 ⁰			SE	CLEARING STRIP ✓
V1	6-7	36 51.8 ⁰	75 46.9 ⁸					56		#8 VESSEL "STORMY" <i>Not Cleared Lib. of 33# by Bryson Cox</i>
V1	3-4	36 51.8 ⁰	75 48.03	56.0				56.0		OUTSIDE #9 ✓
					V2	52.5			NE	CLEARING STRIP ✓
					AD2	51.5			SW	CLEARING STRIP ✓

SITATION NO.
 Y LETTER

BUOY NO.	LAT.	LONG.	GROUND EFF. DEPTH	CLEARED BY DAY STRIP NO.	CLEARED EFF. DEPTH	SOUNDING	CHARTED DEPTH	REMARKS
V3	36°53.9 ⁶ '	75°43.7 ⁴ '	58.0	estimated			58.0	SW OUTSIDE #10 FISH HAVEN - <i>Not Cleared</i>
X1	36°51.8 ⁰ '	75°47.0 ³ '				53'	58.0	#8 VESSEL "STORMY" - <i>Least depth by Bryson Gage</i>
Y1	36°51.96 ¹ '	75°45.1 ² '	58.8	1/2			60	#8 BUOY S ✓
Y1	36°59.9 ⁵ '	75°45.0 ⁴ '	58.8	1/2			60	#8 OLD BUOY WEIGHT ✓
				Z1	57.0			W <i>Clearing Strip</i>
4	36°51.96 ¹ '	75°45.1 ² '	57 1/2				60	W #8 BUOY ✓
Y4	36°51.9 ⁵ '	75°45.0 ⁴ '	57 1/2				60	W #8 OLD BUOY WEIGHT ✓
				Z1	57.0			W <i>Clearing Strip</i>
Y5	36°51.96 ¹ '	75°45.1 ² '	54 1/2				60	BUOY S (CLEARING STRIP) ✓
X2	36°52.4 ⁴ '	75°45.3 ⁶ '	56.5	57.0				#8 NEVER REHUNG OR INVESTIGATED
				Y2	59.0		63.62	NW <i>Clearing Strip</i>
				Y3	58.5	59	63.62	SE <i>Clearing Strip</i>
Z1	36°51.9 ⁶ '	75°45.1 ² '	57.0				60	W REPEAT OF Y5 - <i>Buoy "5"</i>
Z2	36°51.8 ⁰ '	75°47.0 ³ '	53 1/2				58.6	W "STORMY" - MOVIE
AL1	37°02.5 ⁴ '	75°46.2 ² '	39.5				43.0	NE #7 OLD ANCHOR FLUKE - <i>Not Cleared</i>
AM1	37°02.7 ⁵ '	75°47.44 ¹ '	N.A.	37' estimated			43.37	NE #7 ANOTHER FLUKE - <i>Not Cleared</i>
AN1	37°02.7 ⁵ '	75°47.4 ⁴ '	N.A.	37' estimated			43.37	NE #7 SAME AS AM1 - <i>Not Cleared</i>
AN2	37°02.0 ⁹ '	75°47.5 ¹ '	N.A.	42' estimated			42.1	NE #7 ANOTHER ANCHOR FLUKE - <i>Not Cleared</i>
AP1	37°03.12 ¹ '	75°47.20 ¹ '	N.A.	35' estimated			38.5	NE #7 ANOTHER ANCHOR FLUKE - <i>Not Cleared</i>
F1	36°51.8 ⁸ '	75°51.0 ⁸ '	49.0					TEMP. HANG ✓
				L2	45.0		48.0	SW <i>Clearing Strip</i>
				L3	42.5			NE <i>Clearing Strip</i>
AA1	36°52.99 ¹ '	75°48.19 ¹ '	51 1/2				52	Temp Hang - <i>Not investigated</i>
				AD3	51 1/2			SW <i>Clearing Strip</i>
AC1	36°54.13 ¹ '	75°44.64 ¹ '	49				48.57	Grounding - <i>Not Cleared</i>

DATE

DAY LETTER

STRIP

VOL. #

POSITIONS

L.N.M.

S.N.M.

RED CORR.

GREEN CORR.

LENGTH OF DRAG

SMOOTH PLOT

ATTACHMENTS IV

REMARKS

DATE	DAY LETTER	STRIP	VOL. #	POSITIONS	L.N.M.	S.N.M.	RED CORR.	GREEN CORR.	LENGTH OF DRAG	SMOOTH PLOT	ITEM NUMBER	REMARKS
20 FEB	A	1	I	21	3.0	2.1			6000		5	grounded out ✓
24 FEB	B	1	I	12	1.1	.55			4000		4	cleared TIGER ✓
24 FEB	B	2	I	14	.7	.35			4000		4	hung TIGER ✓
24 FEB	B	3	I	11	1.0	.50			4000		4	cleared TIGER ✓
24 FEB	B	4	I	15	1.1	.55			4000		4	cleared TIGER ✓
24 FEB	B	5	I	8	.8	.45			4000		4	cleared TIGER ✓
25 FEB	C	1	I	9	.90	.45			4000		4	cleared TIGER ✓
25 FEB	C	2	I	10	.50	.25			4000		2	hung wreck at CB ✓
25 FEB	C	3	II	12	.50	.25			4000		2	voided ✓
26 FEB	D	1	II	12	.7	.35			4000		2	hung wreck at CB ✓
26 FEB	D	2	II	8	.7	.21			2400		2	cleared wreck at CB ✓
26 FEB	D	3	II	14	.9	.27			2400		2	cleared wreck at CB ✓
26 FEB	D	4	II	13	.4	.12			2400		2	hung wreck at CB ✓
27 FEB	E	1	II	31	2.0	1.8			7200		5	✓
1 MAR	F	1	II	30	2.3	2.07			7200		5	hang - old NAV buoy ✓
2 MAR	G	1	II	14	1.0	1.2			9600		5	rejected drag ✓
8 MAR	H	1	III	11	.65	.36			4000		1	- visual fixes - Hang I Jan 1 ✓
11 MAR	J	1	III	22	2.9	1.82			6000		3	✓
12 MAR	K	1	III	34	2.8	2.52			7000		3	✓
15 MAR	L	1	III	27	2.4	1.92			6000		3	finished with 3 ✓
15 MAR	L	2	III	8	.7	.21			2400		5	cleared temp. hang ✓
15 MAR	L	3	III	6	.6	.21			2400		5	reversed cleared temp. ✓
18 MAR	M	1	IV	13	.9	.54			5000		5 & 6	mud hang ✓
18 MAR	M	2	IV	12	.8	.32			3200		5	hung old NAV buoy ✓
23 MAR	N	1	IV	14	1.5	.9			5000		6	✓
25 MAR	N	2	IV	9	.5	.25			4000		5	hung old counter weight ✓

DATE	DAY LETTER	STRIP	VOL. #	POSITIONS	L.N.M.	S.N.M.	RED CORR.	GREEN CORR.	LENGTH OF DRAG	SMOOTH PLOT	REMARKS
											ITEM NUMBER
24 MAR	P	1	IV	13	1.1	.82			6000		5
25 MAR	Q	1	IV	10	.5	.25			4000		5
25 MAR	O	2	V	8	.8	.40			4000		5
29 MAR	R	1	V	12	1.4	.84			5000		6
29 MAR	R	2	V	15	1.5	.90			5000		6
3 MAR	S	1	V	12	.5	.25			4000		6
30 MAR	S	2	V	16	.7	.35			4000		6
30 MAR	S	3	V	8	.6	.18			2400		6
31 MAR	T	1	V	29	2.7	2.16			6000		8
2 APR	U	1	VI	19	1.2	.96			6000		8
6 APR	V	1	VI	10	.45	.24			6000		9
6 APR	V	2	VI	35	3.1	2.32			6000		9,10
6 APR	V	3	VI	2	-	-			6000		9
7 APR	W	1	VI	19	2.2	1.54			5000		8
13 APR	X	1	VI	36	2.0	1.6			5000		8
13 APR	X	2	VI	13	.6	.3			4000		8
14 APR	Y	1	VI	10	.7	.35			4000		8
14 APR	Y	2	VII	11	.7	.35			4000		8
14 APR	Y	3	VII	8	.9	.45			4000		8
14 APR	Y	4	VII	16	1.0	.5			4000		8
14 APR	Y	5	VII	8	.7	.24			3000		8
15 APR	Z	1	VII	8	.4	.16			3000		8
15 APR	Z	2	VII	10	.7	.21			2700		8
15 APR	Z	3	VII	7	.7	.3			3000		8
16 APR	AA	1	VII	30	2.3	1.61			6000		9
19 APR	AB	1	VII	16	1.5	.9			5000		9

Hung counter weight ✓
 Cleared counter weight ✓
 voided ✓
 Cleared S1 & S2 hangs
 hang - Anchor Fluke
 hang - Anchor Fluke
 cleared hang on S2
 Hang STORMY
 hang - Uninvestigated
 Cleared VI Hang
 hang in fish haven ✓
 hang on vessel "STORMY" ✓
 hang - never found again ✓
 double hang - buoy & old weight ✓
 Cleared X2 Hang
 Cleared X2 Hang
 double hang - same as Y1 ✓
 single hang on buoy & clearing of old weight
 repeat of Y5 ✓
 hang on "STORMY" ✓
 Temp. Uninvestigated hang

DATE	DAY LETTER	STRIP	VOL. #	POSITIONS	L.N.M.	S.N.M.	RED CORR.	GREEN CORR.	LENGTH OF DRAG	SMOOTH PLOT	REMARKS
											ITEM NUMBER
20 APR	AC	1	VIII	22	2.1	1.68			6000		10 ✓
21 APR	AD	1	VIII	18	2.0	1.10			4000		10 ✓
21 APR	AD	2	VIII	8	.8	.26			3000		8 clearing strip-hang outside 8
21 APR	AD	3	VIII	16	1.05	.87			6000		9 ✓ ^{on strip V-1}
22 APR	AE	1	VIII	8	.75	.37			4000		10 void ✓
23 APR	AF	1	VIII	9	.85	.42			4000		10 ✓
23 APR	AF	2	VIII	19	1.65	1.35			6000		10 ✓
23 APR	AF	3	VIII	20	1.9	1.52			6000		10 ✓
28 APR	AG	1	IX	15	1.5	1.05			6000		11 ✓
29 APR	AH	1	IX	24	2.0	1.8			7000		11 ✓
30 APR	AJ	1	IX	24	2.0	1.8			6000		11 ✓
30 APR	AJ	2	IX	23	2.0	1.6			6000		11 Clears SANTORE
3 MAY	AK	1	IX	9	.9	.45			3000		10 void ✓
4 MAY	AL	1	IX	22	1.2	1.1			6000		7 Hang - old anchor ✓
5 MAY	AM	1	IX	12	.6	.6			7000		7 Hang - old anchor ✓
10 MAY	AN	1	IX	12	.5	.45			7000		7 Hang - same as AM1 ✓
10 MAY	AN	2	X	7	void	void			7000		7 Hang - diff. anchor ✓
11 MAY	AP	1	X	8	.7	.63			7000		7 Hang - another anchor ✓
12 MAY	AQ	1	X	27	1.8	1.4			5000		7 ✓
13 MAY	AR	1	X	29	2.6	2.1			5000		7 Temp hang on same anchor hang on strip AL-1

8/6/76

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Lynnhaven Inlet Fishing Pier
Rudee Inlet, Steel Fishing Pier

Tide Station Used (NOAA Form 77-12):

Period: February 20 - May 14, 1976

BOAT

~~XXXXXXXXXX~~ SHEET: 20-1-76 RU-HE-76

OPR: 515

Locality: Chesapeake Bay Entrance

Plane of reference (mean ~~xxxxx~~ low water): 3.60 ft.-Lynnhaven Inlet
6.3 ft.-Rudee Inlet

Height of Mean High Water above Plane of Reference:
3.3 ft.

Remarks: Recommended zoning:

<u>ITEM</u>	<u>STATION</u>	<u>TIME CORRECTION</u>	<u>RANGE RATIO</u>
1	Lynnhaven Inlet	Direct	
5, [6(89)]	Rudee Inlet	-10 min. 290	x1.00
2, 3, 4, 7, [8(91)] 9, 10, 11	Rudee Inlet	-20 min. 280	x0.97

(97) (119)

James R. Hulbert
Chief, Tides Branch

GEOGRAPHIC NAMES

H-9871 WD

Name on Survey	Source of Information										
	A	B	C	D	E	F	G	H	K		
	ON CHART NO. 1227, 1222, 12222	ON PREVIOUS SURVEY No.	CON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST			
Atlantic Ocean	✓										1
Chesapeake Bay	✓										2
Rudee Inlet	✓										3
Lake Rudee	✓										4
Virginia	✓										5
Virginia Beach	✓										6
North Virginia Beach	✓										7
Cape Henry	✓										8
Seashore State Park	✓										9
Lake Wesley											10
CROATAN BEACH (locality)											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved:

Chas. G. Harrington
Chief Geographer - CG 2x5

7 FEB. 1983

HYDROGRAPHIC SURVEY STATISTICS

H 9871 WD

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		289	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		1	
DESCRIP- TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	7	1	1			4
CAHIERS			1			
VOLUMES	1					2
BOXES			2			

T-SHEET PRINTS (List) *Shoreline Movement Study Map No. 13-58, Sheet V, 1980 NOS Compilation*
SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES
The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS		
	PRE- VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			2074
POSITIONS CHECKED	0	477	477
POSITIONS REVISED	0	21	21
XXXXXXXXXXXX N/A	-	-	-
XXXXXXXXXXXXXXXXXXXXXXXXXXXX N/A	-	-	-
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED	0	1	1
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION) <i>Survey Automation</i>	4	0	4
VERIFICATION OF CONTROL	0	4	4
VERIFICATION OF POSITIONS	0	60	60
VERIFICATION OF XXXXXXXX Individual Strips	0	152	152
COMPILATION OF SMOOTH SHEET (A&D and P.N.O.)	0	166	166
APPLICATION OF TOPOGRAPHY	0	3	3
APPLICATION OF PHOTOBATHYMETRY	0	0	0
JUNCTIONS	0	7	7
COMPARISON WITH PRIOR SURVEYS & CHARTS	0	27	27
VERIFIER'S REPORT	0	26	26
OTHER	0	104	104
TOTALS	4	549	553

Pre-Verification by <i>M. B. Hickson</i>	Beginning Date Sept. 14, 1976	Ending Date Sept. 15, 1976
Verification by <i>D. V. Mason, B. J. Stephenson, M. B. Hickson</i>	Beginning Date Apr. 1, 1980	Ending Date Apr. 14, 1982
Verification Check by <i>R. D. Sanecki</i>	Time (Hours) 20	Date Apr. 26, 1982
Marine Center Inspection by <i>Hydrographic Inspection Team (AMC)</i>	Time (Hours) 12	Date Apr. 28, 1982
Quality Control Inspection by <i>F. P. Saulsbury</i>	Time (Hours) 69	Date 2/4/83
Requirements Evaluation by <i>J. V. Myers</i>	Time (Hours) 8.0	Date 7/12/84

G. Myers 6/3/83 11 hours

ATLANTIC MARINE CENTER
VERIFICATION REPORT

REGISTRY NO.: H-9871 WD

FIELD NO.: R/H-20-1-76

Atlantic Ocean
Virginia, ~~East Coast~~, Chesapeake Bay Entrance

SURVEYED: February 18 through May 13, 1976

SCALE: 1:20,000

PROJECT NO.: OPR-515

SOUNDINGS: Wire Drag and
Bryson Gage

CONTROL: Raydist (Range-Range)
and Sextant Fixes
on Shore Signals

Chief of Party.....	R. A. Ganse
Surveyed by.....	R. L. Crozier
.....	Y. A. Bush
.....	T. L. Renninger
.....	K. G. Vadnais
.....	C. E. Gross
Automated Plot by (Rough Strip)	Xynetics 1201 Plotter (AMC)
Smooth Sheet by	M. B. Hickson, III

1. PURPOSE OF SURVEY

The purpose of this survey was to investigate and prove or disprove the existence of sixteen items off of the Virginia Coast in the vicinity of the Chesapeake Bay Entrance. Items 12, 13, 14, 15, and 16 were not investigated on this survey. Items 1 through 11 were investigated by this survey. The results of the investigations on items 1 through 11 are discussed in this report and are portrayed on the smooth sheet (A & D). Items 1 and 7 are incomplete in their investigations.

2. CONTROL AND SHORELINE

a. The source of the control was not adequately described in section C. and Attachment I of the Descriptive Report. Proper triangulation station names and establishment dates were added during verification. The geographic position of calibration station CHESAPEAKE LIGHT, 1966 required correction. One station could not be verified. See section 6. of this report.

b. Shoreline portrayed on the smooth sheet (A & D) is intended for orientation purposes. The source of shoreline is from Shoreline Movement Study Map No. 43-58, Sheet V, 1980 N.O.S. Compilation.

3. JUNCTIONS

An adequate junction has been effected with H-9293 WD (1972) in the northwestern area of the items 5 and 6 investigations. The complete junction with overlapping effective depths and junctional limits are shown on the smooth sheet (A & D).

VJPS

4. COMPARISON WITH HYDROGRAPHIC SURVEYS

a. Hydrography

Comparison with prior hydrographic surveys was not accomplished for this survey. Comparisons of prior data within the common area will be discussed in the Verification Reports of surveys H-9901 (1980), H-9905 (1980), H-9919 (1980-81), ✓ H-9922 (1980), H-9959 (1981), H-9961 (1981), and H-9972 (1981).

Subsequent hydrographic surveys H-9901 (1980), H-9905 (1980), H-9919 (1980-81), H-9922 (1980), H-9959 (1981), H-9961 (1981), and H-9972 (1981) cover 100% of this wire drag survey. Detailed comparisons between these hydrographic surveys and ✓ this wire drag will be accomplished in the Verification Reports of the above hydrographic surveys.

b. Wire Drag Surveys

Special Project I-65 (1965) (unprocessable data)
FE-77 (F.E. No. 3, 1949) 1:40,000
H-7028 WD (1945) 1:40,000
H-6976 WD (1945-47) 1:40,000
H-5987 WD (1935) 1:10,000

1) Special project I-65 (1965), Wreck Investigation, Virginia Coast, was a special investigation on the wreck TIGER (present survey Item 4) in Latitude $36^{\circ}44'57''$, Longitude $75^{\circ}46'19''$. The wreck was found but no useable location was determined. Least depths (unascertainable during verification of the present survey) by leadline and dive reports indicate there was no change at that time in the least depth of the wreck from the prior wire drag survey. *Wk "TIGER" cleared by 43 ft on the present survey* HRNC

2) FE-77 (F.E. No. 3, 1949) is common to the areas of investigation of items 4, 9, and 11 on the present survey. The item 4 investigation is of the wreck TIGER (1957 Wreck List number 403; charted at Latitude $36^{\circ}45'57''$, Longitude $75^{\circ}46'19''$) in which the prior survey had a minimum hang depth of 41 feet and a maximum clearance depth of 39 feet. The present survey has a minimum hang depth of 44 feet and a maximum clearance depth of 43 feet. As evidenced by the present survey findings, the wreckage has apparently settled somewhat. The position of the wreckage as found by the present survey substantially agrees with the position determined in 1949. Effective depths on the present survey range from 37 to 44 feet in charted depths of 51 to 59 feet with the present survey obtaining effective depths ranging from 7 feet shoaler to 5 feet deeper than effective depths within the common area of the prior survey. No conflicts exist between present and prior effective depths within the common area except the previously discussed hang and clearance depths on the wreck. It is recommended that the results of the present survey be charted. *concur* HRNC

The investigations of items 9 and 11 on the present survey cleared but did not hang the wreck SANTORE (1957 Wreck List number 399) previously located in Latitude $36^{\circ}53'54''$, Longitude $75^{\circ}46'55''$, which was hung at an effective depth of 39 feet and cleared by an effective depth of 37 feet on the prior survey, FE-77. The present survey cleared this wreck by an effective depth of 41 feet. As clearance in one direction of a known obstruction is not considered sufficient, it is recommended that the SANTORE be retained as charted. Effective depths on the present survey range from 41 to 52 feet in charted depths of 43 to 52 feet with the present survey obtaining effective depths ranging from 2 feet shoaler to 16 feet deeper than effective depths within the common area of the prior survey. The present survey has generally *HRNC*

obtained deeper effective depths in the common area of the prior survey. No conflicts exist between present and prior effective depths within the common area except the previously discussed clearance depth over the wreck SANTORE.

Do not concur, chart clearance depth of 41 ft on the wreck Santore. (Area cleared to 41 ft on the present survey)

3) H-7028 WD (1945) is common to the area of investigation of item 1 on the present survey and is the source of all three wrecks assigned as item 1. Item 1, in the vicinity of Cape Henry Wreck Lighted Buoy "2CH", consist of three charted features which are identified as follows:

a) Wreck (CHILORE); 1957 Wreck List number 398; Latitude $36^{\circ}57'37''$, Longitude $76^{\circ}00'37''$, hang depth of $38\frac{1}{2}$ feet; cleared depth of $37\frac{1}{2}$ feet. *HR NC*

b) Obstruction; 1957 Wreck List number 1185; Latitude $36^{\circ}57'39''$, Longitude $76^{\circ}00'42''$; hang depth of 42 feet; cleared depth of $40\frac{1}{2}$ feet. *HR NC*

c) Wreck; 1957 Wreck List number 435; Latitude $36^{\circ}57'33''$, Longitude $76^{\circ}01'18''$; hang depth of 42 feet; cleared depth of 40 feet. *HR NC*

The present survey dragged to hang only the shoalest of the three wrecks (CHILORE) which hung the wreck at an effective depth of 38 feet. As the status of the CHILORE had not changed, no further investigations were conducted and the wreck was not cleared on the present survey. The position of the shoalest wreck in Latitude $36^{\circ}57'39''$, Longitude $76^{\circ}00'40''$, as found by the present survey substantially agrees with the position determined on the prior survey. The effective depth of the present survey strip is 38 feet in charted depths of 48 to 71 feet with the present survey effective depths being from 4 feet shoaler to 1 foot deeper than effective depths within the common area of the prior survey. The present survey has generally obtained shoaler effective depths within the common area of the prior survey. No conflicts exist between present and prior effective depths within the common area. These items are considered neither verified nor disproved except that the wreck CHILORE, at Latitude $36^{\circ}57'37''$, Longitude $76^{\circ}00'37''$, is verified. It is recommended that the information from H-7028 WD be retained as charted regarding these items. *concur*

HR NC

4) H-6976 WD (1945-47) is common to the areas of investigation of items 2, 3 and a small part of items 5 and 6.

In the area of investigation of item 2 the prior survey covered and cleared the item by an effective depth of 43 feet but did not hang the item. Item 2 is identified as an obstruction; located at Latitude $36^{\circ}51'17''$, Longitude $75^{\circ}50'55''$; 1957 Wreck List number 1305; source Notice to Mariners No. 7 of 1944. The present survey has a minimum hang depth of 45 feet and a maximum clearance depth of 44 feet. The prior survey did not cover the reported position of item 3 (See section 5.a. of this report). Effective depths on the present survey range from 44 to 52 feet in charted depths of 46 to 55 feet with the present survey obtaining effective depths ranging from 2 feet shoaler to 9 feet deeper than effective depths within the common area of the prior survey. The present survey has generally obtained deeper effective depths within the common area of the prior survey. No conflicts exist between present and prior effective depths. It is recommended that the results of the present survey be charted. *concur*

Item 2, concur

*FE 248
HR NC*

In the area of investigations of items 5 and 6 the prior survey is common to a small area at the eastern edge of the investigation. Effective depth on the present survey within the common area is 47 feet in charted depths of 50 to 55 feet with the present survey having up to 2 feet shoaler effective depths within the common area of the prior survey. No conflicts exist between present and prior effective depths. See section 5.a. of this report for charting recommendations.

✓ JPS

5) H-5987 WD (1935) is common to the area of investigation of item 7 on the present survey. Item 7 is identified as a wreck; located at Latitude $37^{\circ}03'03''$ with H-5987 Longitude $75^{\circ}45'54''$; 1957 Wreck List number 1319; located by an unknown source; *WD (1935) on vessel sunk in 1945, 10 yrs after H-5987 WD (1935)*
 sunk in 1945. The prior survey covered and cleared the reported position of item 7 by an effective depth of 33 feet but did not hang the item. The present survey did not hang the item and the clearance over the reported position at an effective depth of 40 feet was not of sufficient overlap to claim a valid clearance. ~~The combination of both present and prior data is sufficient to ascertain that no major wreckage exists in the assigned area but does not disprove the existence of the wreck as bottom clearances are not within the prescribed limits.~~ Effective depths on the present survey range from 39 to 43 feet in charred depths of 39 to 45 feet with the present survey obtaining effective depths ranging up to 12 feet deeper than effective depths within the common area of the prior survey. No conflicts exist between present and prior effective depths. It is recommended that item 7 be retained as charted. *Do not concur. chrt dangerous. subm. wk with position doubtful. See also item 5.a.3) on pg. 5 of HR.*

HR C

5. COMPARISON WITH CHARTS 1227, 11th Edition, March 16, 1974
 1221, 40th Edition, October 18, 1975
 1222, 15th Edition, August 16, 1975

a. Hydrography

Charted hydrography within the common area originates with prior surveys H-8218 (1954), H-7750 (1948-50), H-6595 (1940), H-5990 (1935), H-4286 (1922), H-4193 (1921) and soundings from sources not readily ascertainable. Prior surveys H-9090 (1969) and H-9099 (1969) are common to the area of the present survey but do not contain source data for the above listed charts. The disposition of the charted hydrography in the common area to this wire drag survey will be discussed in the Verification Reports of H-9901 (1980), H-9905 (1980), H-9919 (1980), H-9922 (1980), H-9959 (1981), H-9961 (1981), and H-9972 (1981).

Charted wire drag data within the common area originates with prior surveys FE-77 (F. E. No. 3, 1949), H-7028 WD (1945), and H-6976 WD (1945-47) which are adequately discussed in section 4. of this report. Additional charting recommendations based on the results of this present wire drag survey are as follows:

1) Item 3 - Item 3 is identified as a wreck; located at Latitude $36^{\circ}50'24''$, Longitude $75^{\circ}49'12''$; 1957 Wreck List number 1312; reported from 1944 Coast and Geodetic Survey information (reference number not ascertainable). The present survey did not locate the item but obtained a clearance effective depth of 48 feet over the reported position. As the clearance effective depth is not within three feet of the bottom the existence of the item is not disproved. It is recommended that the item be retained as charted. *chart note "Area cleared to 48 ft. 1976"*

HR C

2) Item 5 and 6 - Item 5 is identified as an obstruction; located at Latitude $36^{\circ}52'00''$, Longitude $75^{\circ}55'00''$; 1957 Wreck List number 1320; originates with Chart Letter 584 of 1925. Item 6 is identified as an obstruction, (same as item 18 on H-9293 WD); located at Latitude $36^{\circ}53'17''$, Longitude $75^{\circ}56'09''$; 1957 Wreck List number 1333; reported from 1947 Coast and Geodetic Survey Information (reference number not ascertainable); sunk in 1947. Neither item was located by the present survey. The reported position of item 5 was cleared by an effective depth of 41 feet and the reported position of item 6 was cleared by an effective depth of 37 feet. Item 6 was also covered by junctional survey H-9293 WD (1972) as item 18 and as stated in the Verification Report for that survey that the combined coverage of both wire drag surveys was not of sufficient effective depth to disprove the existence of the item. It is therefore recommended that item 6 be retained as existence doubtful

GPS

The following charting recommendations are made so that the area, containing these hangs with incomplete survey information, is not closed to navigation.

3) Item 7)

a) The position of this hang in lat. $37^{\circ}02.09'N$, long. $75^{\circ}47.55'W$, with an estimated effective hang depth of 42 ft and noted as extending $3\frac{1}{2}$ ft off the bottom, falls in 41 ft depths on H-9919 (1980-81). Recommend charting as 37Obstr (depth rep 1981)

HX C

b) Hang in lat. $37^{\circ}02.75'N$, long. $75^{\circ}47.44'W$, estimated effect. hang depth 37 ft, extends 1 ft off the bottom, falls in 37' depths on H-9919 (1980-81). Recommend charting as 36Obstr (depth rep 1981)

c) Hang in lat. $37^{\circ}03.11'N$, long. $75^{\circ}47.20'W$, estimated effect. hang depth 35' extends 3' off bottom, falls in H-9919 depths of 36-37 ft. Recommend charting as 33Obstr (depth rep 1981)

d) Hang in lat. $37^{\circ}02.52'N$, long. $75^{\circ}46.21'W$, effective hang depth 39 ft, extends 2 ft off bottom, falls in 42-44' depths on H-9919 (1980-81). Apparently some bottom scouring has taken place between 1976 & 1981. To stay on the safe side — Recommend charting as 37Obstr (depth rep 1976)

(ED) in the reported location. Item 5 coverage is not within three feet of the bottom in the entire 1/2 mile required search radius, however, coverage is within 5 feet of the bottom. As the data does not meet the criteria for disproval of the existence of the item but coverage is sufficient to disprove any major obstruction, it is recommended that the obstruction be retained as existence doubtful (ED) in the reported location. Five hangs were encountered during investigations on items 5 and 6. These hangs are as follows:

Item 5 - non dangerous wk. ch'd in lat. 36° 52.00' N, long. 75° 55.00' W. - The source for this wk. cl-584/25. Considered that the ship struck a small and soft sand knoll or lump on the bottom. Expunge the ch'd non dangerous subm. wreck. HRC

a) Anchor fluke - hung at an effective depth of 32 feet at Latitude 36°53.12', Longitude 75°56.63' and cleared by an effective depth of 29 feet by both the present survey and junctional survey H-9293 WD (1972). *HRC*

b) Anchor fluke - hung at an effective depth of 31 feet (estimated) at Latitude 36°52.67', Longitude 75°56.55' and cleared by an effective depth of 29 feet by both the present survey and junctional survey H-9293 WD (1972). (Cleared in only one direction on the present survey.) *HRC*

c) Uninvestigated temporary hang - hung on H-9293 WD (1972) at an effective depth of 37 feet at approximately Latitude 36°53.80', Longitude 75°56.43' and cleared by the present survey by an effective depth of 37 feet. *temp HRC*

d) Navigation buoy counter weight - hung at an effective depth of 43 feet at Latitude 36°51.66', Longitude 75°54.20' and cleared by an effective depth of 42 feet. (Clearance is in one direction.) *HRC*

e) Uninvestigated temporary hang - hung at an effective depth of 49 feet at approximately Latitude 36°51.88', Longitude 75°53.88' and cleared by an effective depth of 42 feet. *HRC*

It is recommended that the above hangs be charted as non dangerous obstructions in accordance with the clearance depths of the present survey. *concur*

3) Item 7 - The present survey did not locate this item, charting recommendations pertaining to this wreck, charted in Latitude 37°03'00", Longitude 75°45'54", are made in section 4.b. of this report under the comparison with prior survey H-5987 W.D. (1935). Four hangs were encountered during the investigation on item 7. These hangs are as follows: *See also item 4.b.5, pg 4 of V.R.*
The non dangerous subm wk ch'd from 1957 wreck List #1319, in lat. 37° 03' 03" N, long 75° 45' 54" W should be ch'd as a dangerous subm wk, unless compilation has info. to the contrary. Also, since the pres. survey cleared the position of the wreck,

a) Old style anchor fluke - hung at an effective depth of 42 feet (estimated) at Latitude 37°02.09', Longitude 75°47.55' and not cleared. *(extends 3 1/2 ft off bottom) (falls in 41 depths on H-9919 (1980-81) out hanging the wk, its position is considered doubtful)*

b) Old style anchor fluke - hung at an effective depth of 37 feet (estimated) at Latitude 37°02.75', Longitude 75°47.44' and not cleared. *(extends 1 ft off bottom) (falls in 37' depths on H-9919)*

c) Old style anchor fluke - hung at an effective depth of 35 feet (estimated) at Latitude 37°03.12', Longitude 75°47.20' and not cleared. *(extends 3 ft off bottom) (between 36 & 37' depths on H-9919)*

d) Old style anchor fluke - hung at an effective depth of 39 feet at Latitude 37°03.12', Longitude 75°47.20' and not cleared. *(extends 2 ft off bottom) (falls in 42'-44' depth on H-9919)*

It is recommended that these hangs be charted as non dangerous obstructions in accordance with the results of the present survey. *Do not concur, see recommendations on left adjacent page.*

4) Items 8, 9, 10, and 11 - Item 8 is identified as a wreck; located at Latitude 36°51'42", Longitude 75°46'02"; 1957 Wreck List number 1313; reported from 1944 Coast and Geodetic Survey Information (reference number not ascertainable);

14PS

sunk in 1942 and reported as broken up. Item 9 is identified as an obstruction; located at Latitude $36^{\circ}53'04''$, Longitude $75^{\circ}47'00''$; 1957 Wreck List number 1329; source unknown; reported as wreck; sunk in 1914. Item 10 is identified as a wreck; located at Latitude $36^{\circ}53'35''$, Longitude $75^{\circ}45'41''$; from 1957 Wreck List (wreck number unknown); source unknown; sunk in 1917. Item 11 is identified as an obstruction; located at Latitude $36^{\circ}54'58''$, Longitude $75^{\circ}46'29''$; 1957 Wreck List number 1328; source unknown. None of the four items was located by the present survey. The reported position of item 8 was cleared by an effective depth of 56 feet. The reported position of item 9 was cleared by an effective depth of 54 feet. The reported position of item 10 was cleared by an effective depth of 53 feet. The reported position of item 11 was cleared by an effective depth of 46 feet. Bottom clearances are not within prescribed limits for disproval of existence but coverage of all four items is sufficient to disprove any major wreckage exists. It is recommended that all four items be retained as charted. Six hangs and one grounding were encountered during the investigations on items 8, 9, 10 and 11. These hangs and groundings are as follows:

a) Temporary uninvestigated hang - hung at an effective depth of 51 feet at approximately Latitude $36^{\circ}52.99'$, Longitude $75^{\circ}48.19'$ and cleared by an effective depth of 51 feet. (Clearance is in one direction.) *cht as 54 obstr HRNC*

b) Uninvestigated hang - hung at an effective depth of 56 feet (estimated) at Latitude $36^{\circ}51.80'$, Longitude $75^{\circ}48.03'$ and cleared by an effective depth of 52 feet. *cht as 52 obstr*

c) Wreck STORMY - least depth by Bryson Gage of 53 feet at Latitude $36^{\circ}51.80'$, Longitude $75^{\circ}47.03'$. *cht as 53 Wk HRNC*

d) Uninvestigated hang - hung at an effective depth of 59 feet at Latitude $36^{\circ}52.46'$, Longitude $75^{\circ}45.36'$ and cleared by an effective depth of 59 feet. *cht as 59 obstr HRNC*

e) Old navigation buoy anchor weight - hung at an effective depth of 57 feet at Latitude $36^{\circ}51.95'$, Longitude $75^{\circ}45.01'$ and cleared by an effective depth of 57 feet. (Clearance is in one direction) *cht as 57 obstr HRNC*

f) Uninvestigated hang - hung at an effective depth of 54 feet (estimated) at Latitude $36^{\circ}53.96'$, Longitude $75^{\circ}43.74'$ and not cleared lies in an area charted as a fish haven. *Do not chart - Fish Haven Area with an authorized minimum depth of 51 ft. HRNC*

g) Grounding - at an effective depth of 49 feet located at Latitude $36^{\circ}54.13'$, Longitude $75^{\circ}44.64'$ in charted depths of 48-57 feet and in contemporary survey (H-9959) depths of 51-52 feet. The grounding was not cleared. *cht 49 ft sdg. HRNC*

It is recommended that these hangs be charted in accordance with the results of the present survey with the exception of the hang in the fish haven noted above which should not be charted as the area has an authorized minimum of 51 feet. The wreck STORMY has, to date, never been charted. *A chart letter was not initiated by this office as the wreck is recommended to be charted as a non dangerous wreck. (The least depth of 53 feet in contemporary survey depths of 59 feet indicates the wreck extends only 6 feet off the bottom.) It is recommended that the grounding not be charted as the ground weights may be as much as two feet deeper than the wire depth and the configuration of the bottom may have changed somewhat in the years between the surveys. *See a) thru g) above for charting recommendations. *Wk Stormy chit. 53' sdg with 5' Wk appended. Chit 49' sdg, the weights may not be 2 ft deeper than the wire depth.*

✓
RPS

b. Aids to Navigation

One fixed aid to navigation, Chesapeake light, is a triangulation station and is shown on the smooth sheet (A & D). Only one floating aid to navigation, Navy SESEF Lighted Buoy "S" (area of item 8), was located by the present survey. This buoy is a special purpose buoy maintained by the U. S. Navy. Chesapeake Bay Entrance Lighted Whistle Buoy "CB" (area of item 2) and Virginia Beach Lighted Wreck Buoy "V" (area of item 4) were removed by the U. S. Coast Guard to facilitate wire dragging operations and therefore were not located by the present survey. Cape Henry Wreck Lighted Buoy "2CH" (area of Item 1) was not located by the present survey. *Buoys "2CH" & "V" were visually verified.*

6. CONDITION OF SURVEY

The condition of the survey is satisfactory except as follows:

a. Field Work and Records

- 1) Item 1 was not completed. Only one of the three wrecks was hung. None of the wrecks were cleared. *Item 1 is considered covered by H-7028 (1944-45) WD. No further work is recommended.* ✓
- 2) Item 7 was not completed. Approximately one-half of the required area was swept. None of the four obstructions located were cleared. ✓
- 3) None of the items investigated were covered within three feet of the bottom throughout the required area of search. ✓
- 4) There was no field A & D sheet submitted for item 4. ✓
- 5) One split exist in the item 6 area of investigation in the vicinity of Latitude $36^{\circ}52.51'$, Longitude $75^{\circ}56.30'$. However, this split is covered by junctional survey H-9293 WD (1972). ✓
- 6) Two large splits exist in the item 7 area of investigation in the vicinity of Latitude $37^{\circ}02.5'$, Longitude $75^{\circ}46.2'$ and Latitude $37^{\circ}02.1'$, Longitude $75^{\circ}46.9'$. ✓
- 7) Three splits exist in the items 8, 9, 10, and 11 area of investigation in the vicinity of Latitude $36^{\circ}55.3'$, Longitude $75^{\circ}45.2'$ and Latitude $36^{\circ}54.2'$, Longitude $75^{\circ}44.6'$ and Latitude $36^{\circ}51.93'$, Longitude $75^{\circ}45.14'$. ✓
- 8) Two areas of insufficient overlap exist in the Item 3 area of investigation in the vicinity of Latitude $36^{\circ}50.4'$, Longitude $75^{\circ}48.8'$ and Latitude $36^{\circ}49.8'$, Longitude $75^{\circ}47.9'$. ✓
- 9) One area of insufficient overlap exists in the Item 11 area of investigation in the vicinity of Latitude $36^{\circ}55.7'$, Longitude $75^{\circ}45.6'$. ✓
- 10) The temporary hang at Latitude $36^{\circ}51.88'$, Longitude $75^{\circ}53.88'$ (position approximate) was not investigated. Clearance of this hang was not within prescribed limits. *49' temp hang cleared by 42 ft.*
- 11) The anchor fluke at Latitude $36^{\circ}52.67'$, Longitude $75^{\circ}56.55'$, hung during the Items 5 and 6 investigation, was cleared in only one direction on the present survey, however, junctional survey H-9293 WD (1972) also clears this obstruction. ✓

- 12) The hang at Latitude $36^{\circ}53.96'$, Longitude $75^{\circ}43.47'$ was neither investigated nor cleared. *(Fish Haven Area)*
- 13) The hang on the old navigation buoy weight at Latitude $36^{\circ}51.95'$, Longitude $75^{\circ}45.01'$ was cleared in only one direction. ✓
- 14) The hang at Latitude $36^{\circ}52.46'$, Longitude $75^{\circ}45.36'$ was not investigated. ✓
- 15) The temporary hang at Latitude $36^{\circ}52.99'$, Longitude $75^{\circ}48.19'$ was not investigated and was cleared in only one direction. ✓
- 16) The hang at Latitude $36^{\circ}51.80'$, Longitude $75^{\circ}48.03'$ was not investigated. ✓
- 17) The wreck STORMY was not cleared, however, the least depth by Bryson Gage is considered adequate. ✓
- 18) The wreck TIGER (item 4) was hung in only one direction. A diver investigation and least depth on this wreck would have been beneficial. ✓
- 19) The wreck SANTORÉ was not an assigned item but fell within the area of investigation. Only one strip covered this wreck clearing it in only one direction and giving an indication that the status of the wreck has changed. At least one other clearing strip in the opposite direction would have been sufficient to chart a deeper clearance depth. A complete re-examination of this wreck would have contributed valuable information to the present survey. *41 ft cleared depth is recommended for charting.*
- 20) Strip AR-1 on item 7 had a setting of uprights that contained a deep section between two adjacent shoaler sections which is a violation of section 3-20 of the Wire Drag Manual. ✓
- 21) Current editions of affected charts should have been included with the survey records. ✓
- 22) Prior surveys furnished to the field should have been included with the survey records. ✓

b. Descriptive Report

- 1) Prior surveys noted as source material for charted data were not identified nor were any comparisons made with the prior surveys. ✓
- 2) Charts affected by this survey were not identified by chart number, edition number, and edition date. Comparisons made by the hydrographer between charted data and the present survey were not in conformance with the Wire Drag Manual. This area was primarily addressed by the hydrographer under sections III through IX of this report which addresses the items investigated. ✓
- 3) Control stations as listed in section C. and Attachment I required the addition of establishment dates for all stations, correction of station names for some stations, names and correction of the geographic position for one station (CHESAPEAKE LIGHT, 1966). One station listed in Attachment I (Chimney on east edge and center of the elevator shaft on 15 story condominium) could not be verified. ✓
- 4) The List of Groundings and hangs, Attachment III, was not complete and was amended during verification. ✓

5) A Geographic Names List was compiled during verification and is included in the Descriptive Report. ✓

6) A Non-floating Aids for Charts List (Form 76-40) was compiled during verification and is included in the Descriptive Report. ✓

7) Necessary corrections made by the verifier to the Descriptive Report are denoted in red ink. ✓

c. Field Plotting

Field plotting consisted of individual strips plotted on individual mylar sheets and two field A & D sheets (penciled). Although this is not in accordance with the Wire Drag Manual, it is considered adequate. ✓

7. COMPLIANCE WITH PROJECT INSTRUCTIONS

This wire drag survey adequately complies with Project Instructions OPR-515-RU/HE-76, Wire Drag, East Coast Investigations, dated November 10, 1975 and ammended by Change No. 1 except as noted in this report. ✓

8. ADDITIONAL FIELD WORK

This is an adequate basic wire drag survey except as noted in this report for items 1 and 7. Additional field work is recommended for items 1 and 7 and the need for further investigations on the wreck SANTORE is indicated by this survey. *Do not concur on Item 1. Considered adequate by covered on H-702B(1944-45) wo. Any further work on the wreck Santore is considered impractical.*

9. MISCELLANEOUS

a. Two temporary hangs were encountered during this survey. These two temporary hangs were smooth plotted and are listed in the list of groundings and hangs in the Descriptive Report. Neither of these temporary hangs were investigated.

b. Numerous groundings occurred during this survey, however, only groundings that show conflict are smooth plotted. One grounding is smooth plotted, see section 5. of this report for discussion and recommendations. ✓

c. Hangs on outset, pickup, or in void sections were smooth plotted with an estimated effective depth of hang. Six hangs on this survey have estimated effective depths. ✓

d. Automated rough strips for verification were plotted on tracing paper. As tracing paper is not a stable base material some distortion was apparent during smooth plotting. The distortion was corrected as much as practical without replotting the entire survey and the data is not considered degraded. ✓

e. In strips containing a hang the area past the initial contact of the hang was not claimed for effective depth coverage as per the recommendation of the hydrographer and current processing instructions. ✓

Maurice B. Hickson III
Maurice B. Hickson, III
Cartographer
Evaluation and Analysis

✓
JPS

INSPECTION REPORT
H-9871WD

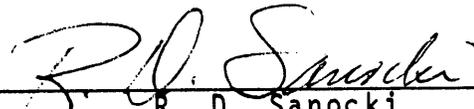
The completed survey has been inspected by the Hydrographic Inspection Team with regard to survey coverage, ~~delineation of depth contours, development of critical depths~~, cartographic symbolization, and verification or disproval of charted data. The Verification Report has presented the facts accurately and properly, the procedures used were appropriate, and the recommendations are logical and justifiable. The survey complies with National Ocean Survey requirements except as noted in the Verification Report. The survey records comply with NOS requirements except where noted in the Verification Report. The Hydrographic Inspection Team concurs with the verifier's findings, actions, and recommendations. *Exceptions are noted in red.*

ZPS

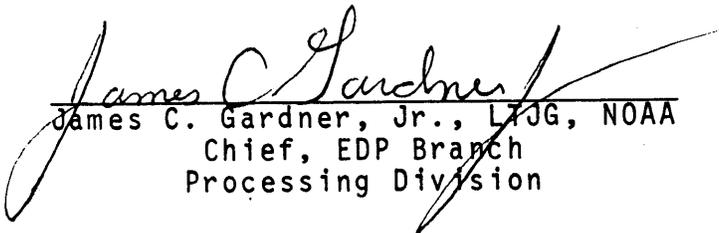
Examined and Approved
Hydrographic Inspection Team



Karl Wm. Kieninger, CDR, NOAA
Chief, Processing Division



R. D. Sanocki
Chief, Verification Branch
Processing Division

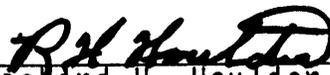


James C. Gardner, Jr., LTJG, NOAA
Chief, EDP Branch
Processing Division



Evelyn J. Fields, LT, NOAA
Field Procedures Officer
Operations Division

Approved/Forwarded
May 7, 1982



Richard H. Houder, RADM, NOAA
Director, Atlantic Marine Center

ZPS



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

N/CG242:FPS

June 19, 1984

TO: Roy K. Matsushige *QKM*
Chief, Hydrographic Surveys Branch

THRU: Chief, Standards Section *gm*

FROM: F. P. Saulsbury *F. P. Saulsbury*
Quality Evaluator

SUBJECT: Quality Control Report for Survey H-9871 (1976) WD, Virginia,
Atlantic Ocean, Chesapeake Bay Entrance

A quality control inspection of H-9871 WD was accomplished to monitor the survey for adequacy with respect to data acquisition; determination of the validity of hangs, groundings, and least depths; validity of cleared depths over obstructions in the survey area; A&D sheet; Verifier's Report; decisions and actions by the verifier; and the cartographic presentation of data. In general, it was found to conform to National Ocean Service standards and requirements except as stated in the Descriptive Report.

CC:
N/CG241





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

N/CG241: SJV

JUL 25 1984

TO: N/MOA - Wesley V. Hull

FROM: *for* N/CG2 - C. William Hayes *Signature of R. Peters*

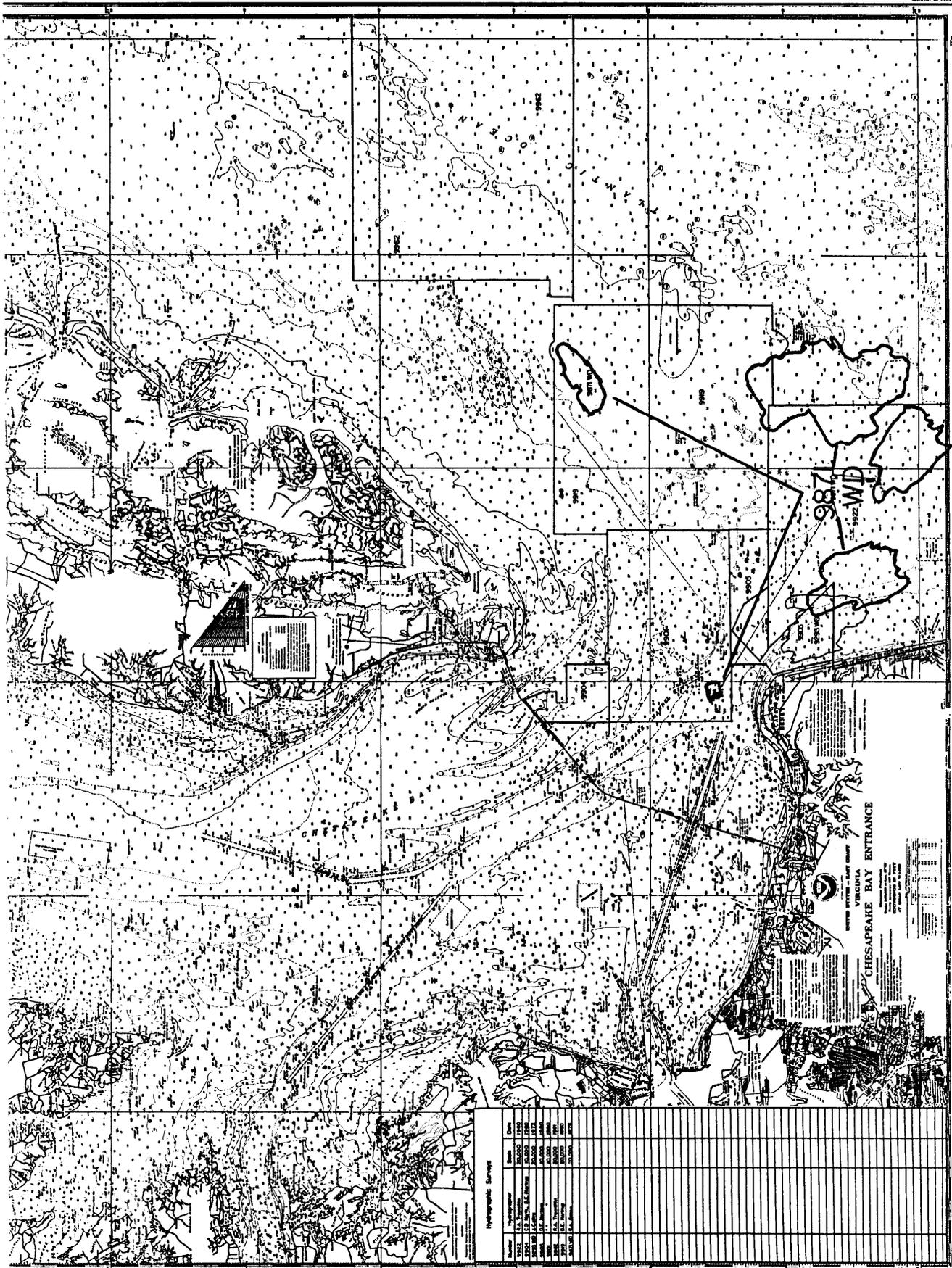
SUBJECT: Report of Compliance for Survey H-9871 (1976) WD

The smooth sheet and Descriptive Report for survey H-9871 (1976) WD, Virginia, Atlantic Ocean, Chesapeake Bay Entrance, have been reviewed. This survey, except as noted in the Quality Control Report, dated June 19, 1984 (copy attached), and the Hydrographic Survey Inspection Team Report, dated May 7, 1982, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-515-RU/HE-76, dated November 10, 1975.

Attachment

cc:
N/CG242 w/o att.





1222 No.4
 (Chesapeake Bay Entrance)
 (4-19-88)



987 WP
 1992

CHESAPEAKE BAY ENTRANCE
 VIRGINIA

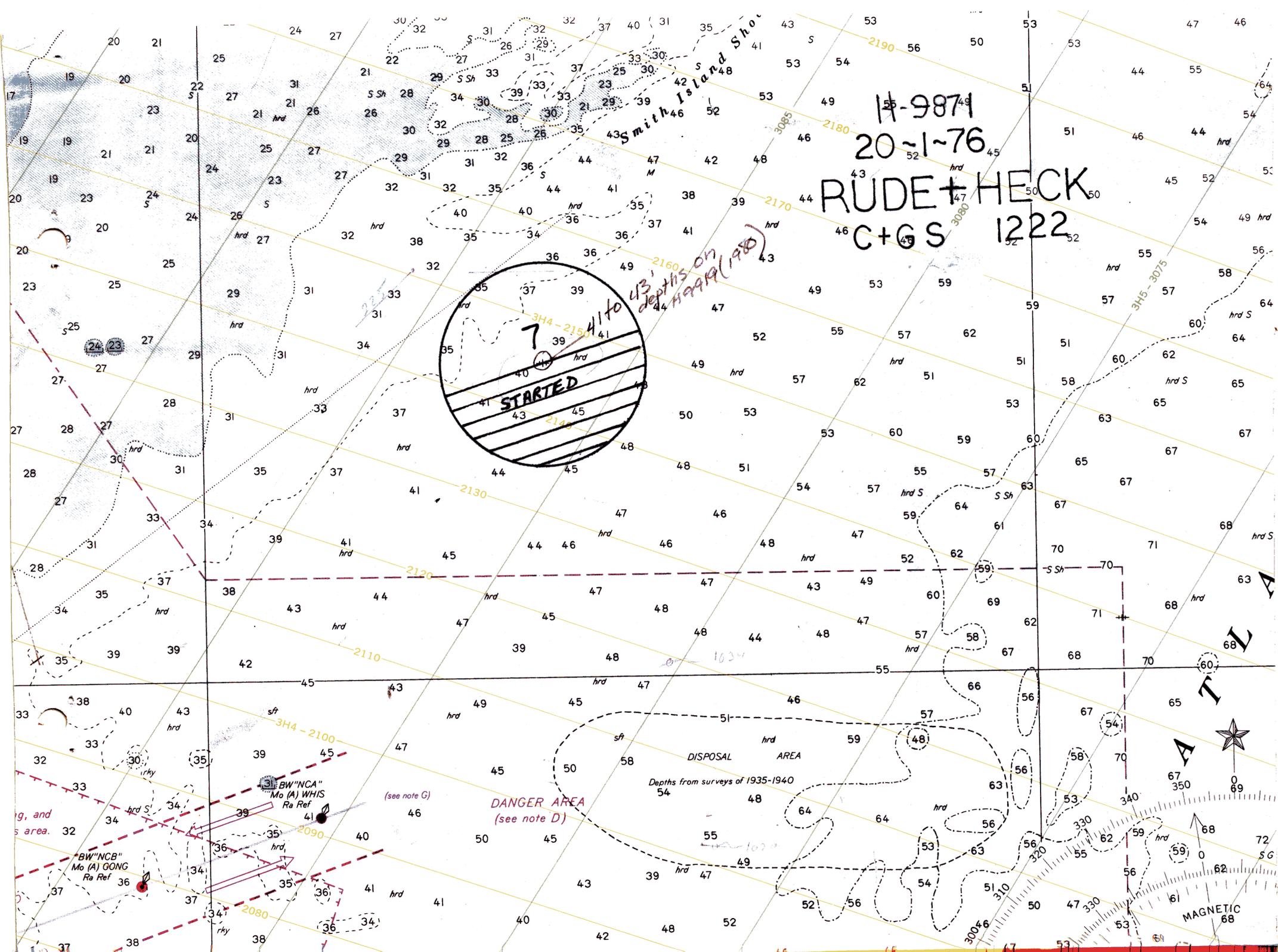
CHESAPEAKE BAY ENTRANCE
 VIRGINIA

CHESAPEAKE BAY ENTRANCE
 VIRGINIA

CHESAPEAKE BAY ENTRANCE
 VIRGINIA

1222 No.4
 (4-19-88)

Hydrographic Surveys	
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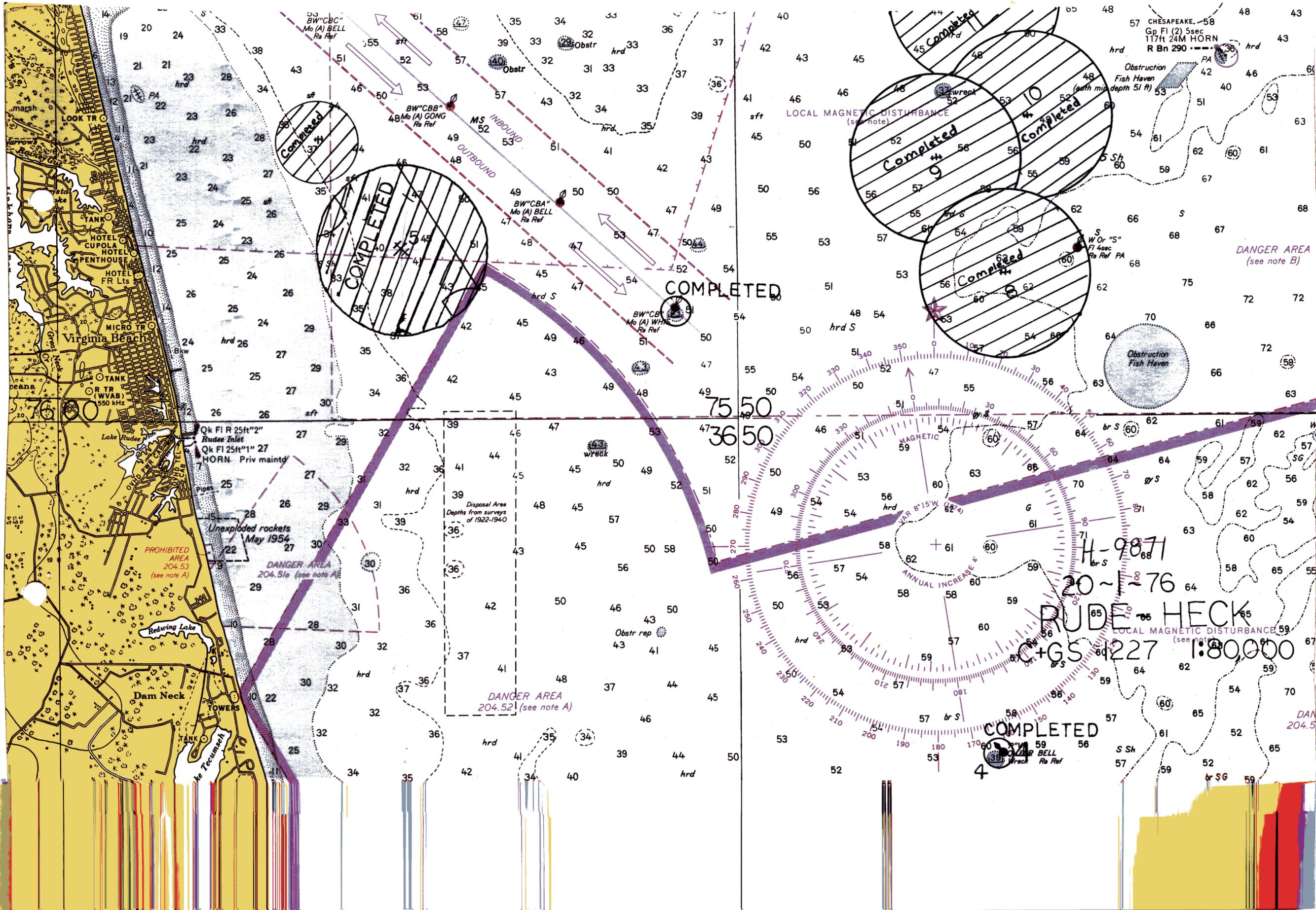
11-9871
20-1-76
RUDE + HECK
C+GS 1222

STARTED
7
3H4-2150
43 depths on
44 H999 (1980)

DANGER AREA
(see note D)

DISPOSAL AREA
Depths from surveys of 1935-1940

MAGNETIC



COMPLETED
3 4

COMPLETED
4 5

COMPLETED
9

COMPLETED
8

COMPLETED
4

H-9871
20-1-76
RUDE HECK
+GS 1227 1:80,000

COMPLETED

COMPLETED

DANGER AREA
(see note B)

DANGER AREA
204.52 (see note A)

PROHIBITED AREA
204.53
(see note A)

DANGER AREA
204.51 (see note A)

Disposal Area
Depths from surveys
of 1922-1940

Unexploded rockets
May 1954

LOCAL MAGNETIC DISTURBANCE
(see note)

LOCAL MAGNETIC DISTURBANCE
(see note)

DANGER AREA
204.5

PROHIBITED AREA
204.53
(see note A)

DANGER AREA
204.51 (see note A)

Disposal Area
Depths from surveys
of 1922-1940

Unexploded rockets
May 1954

LOCAL MAGNETIC DISTURBANCE
(see note)

LOCAL MAGNETIC DISTURBANCE
(see note)

DANGER AREA
204.5

