

# 8902

Diag. Cht. No. 1209-3 & 1210-3

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY

## DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. WH-10-1-66 Office No. H-8902

### LOCALITY

State Massachusetts

General locality South Coast of Massachu-  
setts

Locality Vineyard Sound

1966

CHIEF OF PARTY

S. C. Miller

LIBRARY & ARCHIVES

DATE April 26, 1968

USCOMM-DC 37022-P66

8902

**HYDROGRAPHIC TITLE SHEET**

H-8902

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.

WH-10-1-66

State Massachusetts

General locality South Coast of Massachusetts

Locality Vineyard Sound

Scale 1:10,000 Date of survey 1966

Instructions dated 11 March 1963 Project No. OPR-369

Vessel WHITING GSS-29

Chief of party LCDR Sidney C. Miller

Surveyed by LCDR S.C. Miller, LCDR R.A. Trauschke, LTJG D.R. Rich,  
ENS. Avampato

Soundings taken by echo sounder, hand lead, pole Echo sounder, hand lead, and pole.

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel & Norfolk Hydro Processing Br.

Protracted by Harry R. Smith

Soundings penciled by Harry R. Smith

Soundings in ~~feet~~ feet at MLW ~~MLW~~

REMARKS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*J. J. G.*

*X. W. W. 10/23/91*



DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-8902  
Field No. WH-10-1-66

Scale: 1:10,000  
Ship WHITING

S.C. Miller  
Commanding

Surveyed by:

LCDR. S.C. MILLER  
LCDR. R.A. TRAUSCHKE  
LTJG. D.R. RICH  
ENS. J.R. AVAMPATO

A. PROJECT

Authorization for this project is given in instructions for OPR-369, Vineyard Sound, Massachusetts, dated 11 March 1963, and Supplemental Instructions dated 13 June 1966. ✓

B. AREA SURVEYED

The survey is located in Vineyard Sound. The area surveyed has boundaries as follows: Starting at East Chop on the northern coast of Martha's Vineyard then west along the coast to Norton Point; thence NW across the Sound to Jobs Neck on Naushon Island, thence NE along shore to Lat.  $41^{\circ} 30' 00''$ N, thence east to  $70^{\circ} 34' 00''$ W, thence south to East Chop. ✓

Hydrography was begun on June 28 and ended on August 23, 1966.

The survey joins contemporary survey H-8903, (WH-10-2-66).  
Prior surveys are:

<u>Registry No.</u>	<u>Date</u>	<u>Scale</u>
H-8821	1964	1:10,000
H-6350	1938	1:20,000
H-8170	1954	1: 5,000
H-1832	1887	1:20,000
H-2852	1906	1:20,000
H-1829	1887	1:10,000

 ✓

## C. SOUNDING

The following vessels were used during this survey:

<u>Vessel</u>	<u>Attached to</u>	<u>Color Day Letter</u>
Whiting	<del>Whiting</del>	Violet
ML 2	Whiting	Red
Skiff	Whiting	Green

## D. SOUNDING EQUIPMENT

Soundings were recorded by Ratheon DE-723 fathometers, leadlines, and sounding poles as follows:

<u>Vessel</u>	<u>Sounding</u>	<u>Depth Range</u>
Whiting	DE-723 #262	30-100 ft.
ML 2	DE-723 #262	4-100 ft.
	#251	4-100 ft.
	#213	4-100 ft.
Skiff	Pole	0- 13 ft.
	Leadline	1- 25 ft.

Velocity corrections were obtained for the Whiting by means of simultaneous comparisons between fathometer and leadline. These were co-ordinated with a temperature-salinity curve. Squat and settlement values used were obtained in November 1964 by rod and level.

Velocity corrections for launches were determined by means of bar checks which were made at the completion of the survey. Squat and settlement values were obtained in April 1965 by rod and level. All soundings taken by skiff were either by pole or leadline.

See fathometer report for more detailed information.

## E. SMOOTH SHEET

The smooth sheet will be plotted by the processing office at the Atlantic Marine Center, Portsmouth Office, Norfolk, Virginia.

## F. CONTROL

Hydrography was controlled entirely by visual means using three point fixes. Visual signals included triangulation stations with tripods built over them and photogrammetric signals pricked through from manuscripts. LTjg Kerly, of Photo Party 62, was assigned to the project by the Washington Office.

Photographs for Lake Tashmoo area have been lost in the Washington Office but the manuscripts are available. Due to the relative unimportance of the lake, natural objects indentifiable on the manuscripts were used as signals and transferred to the boat sheet by holding the manuscripts location. ✓

Photographs for Lagoon Pond were unavailable. Due to no available control, an electronic traverse was run from the entrance of Lagoon Pond to locate a point midway the length of the pond and at the far end. Additional control was then located by plane table methods. See Graphic Control Sheet and Photo-Hydro Support Report for OPR-369. ✓

Manuscripts used for the location of signals are as follows:

<u>Sheet No.</u>	<u>Date</u>	
T-10641	1965	(Advanced) ✓
T-11212	1965	(Advanced)
T-12475	1963	(Advanced)
Ch 348 (T-12501)	1962	Brown Ink on Spoofta Sheet.

#### G. SHORELINE

All shoreline <sup>on the boat sheet</sup> was transferred from manuscripts listed in section F. The low water line was not defined by soundings due to the boulder-infested shoreline. ✓

#### H. CROSSLINES

Eight percent of the sounding lines were run as cross lines. The agreement was good, generally within one foot. Discrepancies of one and two feet did occur quite frequently on the development of Middle Ground Shoal. This was attributed to the very rough sand ridges which form the Middle Ground Shoal. ✓

#### I. JUNCTIONS

The junction with H-8903, <sup>on the west</sup> 1966 (WH-10-2-66) was very good; soundings agreed to within one or two feet. ✓

The junction with H-8821, <sup>on the east</sup> 1964 was very good; soundings agreed to within one or two feet after the velocity corrections for the present work are applied. *unverified as of 10-10-68* ✓

The junction with H-6350, 1938 was also very good; soundings agree within two feet after the velocity corrections for the present work are applied. ✓  
~~Inked. Junction good, but the survey is too old.~~

The junction with H-8170, 1954 was very good; soundings agree within one or two feet after the velocity corrections for the present work are applied.  
~~Unlinked. Junction good, but not requested in project instructions.~~

J. COMPARISON WITH PRIOR SURVEYS

1. Presurvey review items:

~~64° 29.15'~~ (270° 36.09')

(5) Alleghany Rock -- The area at Alleghany Rock was developed by fathometer. No indication of a rock or any shoaling was found in this area. The depths ranged from 17 ft. to 23 ft. A diver, using a search rope investigated an area of 100 ft. in radius from the charted location of the rock but no rock was found. See development of area done on "ab" day by ML 2 for further details of the area. It is recommended that the rock should remain charted as it is until ~~CONCUR~~ the area can be wire dragged.

✓

(6) This rock was found as located on the chart after a one hour search by a diver and a search rope. The least depth found was 11 ft. by a sounding pole. It is recommended that this new depth replace the charted 7 ft. depth. For the development of the area see overlay done on "ab" day by ML 2.  
*Inconclusive. No 11-ft. pole-sounding in area. Must redevelop and clarify.*

*sdg records contain no data re: diving operations*

*49° 28.83' 70° 37.4'*

(7) This area was developed by launch and skiff. There were no rocks awash, but a number of rocks are submerged about two feet. Approximately three hours ~~were~~ spent developing this area and locating all rocks that could be seen visually. Five sunken rocks were located in this area. All have least depths of two feet. For development of the area see overlay done on "b" day by skiff. The rock at Lat. 41° 28.69' N and Long. 70° 35.56' W was searched for by developing area with the launch and fathometer. The shoalest depth found at the charted location of the rock was 12 ft. in depths of 13 and 20 feet. Was unable to get a least depth by leadline. Development was done on "ad" day by ML 2. *from H-1829 (1887)*

*for 2 rocks awash see pos. 1 red & 96 "j"*

*(unreduced)*

(1) The sunken fishing vessel MARGIE L located at Lat. 41° 29.2' N and Long. 70° 37.5' W was not searched for by this party. (NM 34, 1958)

(H) The stakes at Lat. 41° 27' <sup>30"</sup> 24" N and Long. 70° 37' 30" W have been removed. The dolphins are as shown on manuscript T-10641, and SC 6678, 6679, April 15, 1961, photos. (Revision Sheet No. 817); and the inset on T-12,497

(F) The bottom features in Lagoon Pond were completely developed.

✓  
✓  
✓  
✓

## 2. Comparison with prior surveys

Prior Survey - 1906 - Reg. No. 2852  
Middle Ground Shoal,  
Scale 1:20,000

In general there has been a slight shift of the Middle Ground Shoal. The amount of movement varies as much as 0.15 miles either north or south from the 1906 location of the shoal. The shoal has retained the same general configuration. ✓

- 41° 29.<sup>.13</sup>4'N The shoalest area on the ridge moved north about 0.05 miles, with an average depth about two to three feet deeper. ✓  
70° 37.0'W
- 41° 29.1'N The ridge has shifted about 0.05 miles to the NW while the least depth has remained the same. ✓  
70° 37.2'W
- 41° 29.0'N The ridge has remained in the same position but the average depth has increased by three to four feet. ✓  
70° 37.4'W
- 41° 28.8'N The ridge has shifted SE about 0.02 miles with no change in the least depth. ✓  
70° 37.85'S
- 41° 28.9'N The ridge has moved 0.02 miles to the NW with no change in the average depth. ✓  
70° 37.6'W
- 41° 28.8'N In this vicinity the ridges have shifted SE about 0.10 miles and average about five feet deeper than in 1906. ✓  
70° 38.3'W
- 41° 28.75'N The shoal has moved S about 0.10 miles and the average depth ranges from five to seven feet deeper. ✓  
70° 38.8'W
- 41° 28.55'N Shoal has shifted about 0.10 miles to the NW with a general increase in depth of two to three feet. ✓  
70° 39.5'W
- 41° 28.55'N The shoal area extending from this point to the SW to the sheet limits has shifted to the NW about 0.15 miles with increased depths from 6-10 feet to 17-25 feet. ✓  
70° 40.1'W

*Middle Ground Shoal's westernmost extent is 70°40'00"*



Prior Survey - 1887 - Reg. No. 1832  
Scale 1:20,000

The general configuration of the bottom is in agreement within one to two feet. The only discrepancy occurred at Alleghany Rock, which this survey was unable to locate. ✓

Prior Survey - 1887 - Reg. No. 1829  
Scale 1:10,000

In general the two surveys are in good agreement. The only major change in the bottom configuration occurs in the vicinity of  $41^{\circ} 27.4'N$  and  $70^{\circ} 36.0'W$  where depths around the ferry landing ~~has~~ <sup>have</sup> been dredged from five feet to twenty-two feet. ✓

It is assumed that when the observed tides are used to reduce soundings the small discrepancies between different days of soundings and between the boat sheet and chart will be resolved. ✓

#### K. COMPARISON WITH THE CHART

C&GS Chart #264, Martha's Vineyard, 2nd Edition  
July 1965.

*Reviewer's Comparison with Third Ed., 2/6/67*

In general the soundings agree with the chart to within one or two feet except in the following instances where the bottom has changed slightly.

1. The 12 and 18 foot depth curves near Alleghany Rock have shifted slightly toward shore.
2.  $41^{\circ} 29.4'N$   $70^{\circ} 36.15'W$  The bottom appears to be 10 feet <sup>greater</sup> deeper than the charted depth. <sub>3/29/67</sub>
3.  $41^{\circ} 28.2'N$   $70^{\circ} 38.6'W$  Soundings of 27 and 29 feet are still in the same location but the shoal has become much larger. It is now about 0.3 miles long and 0.1 miles wide.
4.  $41^{\circ} 29.4'N$   $70^{\circ} 40.45'W$  The depth has increased from 58 to 66 feet. (58 ft. carried on H-8902 from H-1832) <sub>69</sub>

#### L. ADEQUACY OF SURVEY

The survey is complete and adequate to supersede prior surveys for charting.

#### M. AIDS TO NAVIGATION

The comparison of the Light List and the Chart #264 with the boat sheet is very good. The aids adequately serve the purposes for which they were established. All ✓

aids were found as indicated on Chart #264. Determined positions agree closely with those given.

#### N. STATISTICS

The total area surveyed amounted to 18.0 square nautical miles with 406.3 lineal miles of sounding line and 38 bottom samples. Statistics for each vessel is as follows:

<u>Vessel</u>	<u>No. Pos.</u>	<u>Miles Sdg. Line</u>	<u>Total Miles</u>
Whiting	15	0.0	0.0
Launch 2	3577	383.0	791.8
Skiff	409	23.3	43.3
	<u>4001</u>	<u>406.3</u>	<u>835.1</u>

#### O. MISCELLANEOUS

To be completed by the smooth plotter.

#### P. RECOMMENDATIONS

To be completed by the smooth plotter.

#### Q. REFERENCES TO REPORTS

##### Titles and Dates Forwarded to Washington Office

Coast Pilot Report	Sept. 16, 1966
Corrections to Echo Soundings	
Photogrammetry Report	
Aids to Navigation	

Respectfully submitted

*Donald R. Rich*

Donald R. Rich  
LTjg, ESSA-C&GS

APPROVAL SHEET

This report is complete and adequate for the area surveyed. The report is approved and forwarded for inclusion in the Coast Pilot.

Sidney C. Miller  
LCDR, USESSA  
Commanding Officer

## TIDE NOTE

*Off Survey sheet*

A portable tide gage at Tarpaulin Cove was used to record the tides during this survey. It was located at Lat.  $41^{\circ} 28.2'N$  and Long.  $70^{\circ} 45.6'W$ . Tides and survey were recorded on 60th meridian time. The plane of reference was located at 3.3 feet on the tide staff.



SQUAT & SETTLEMENT 1965

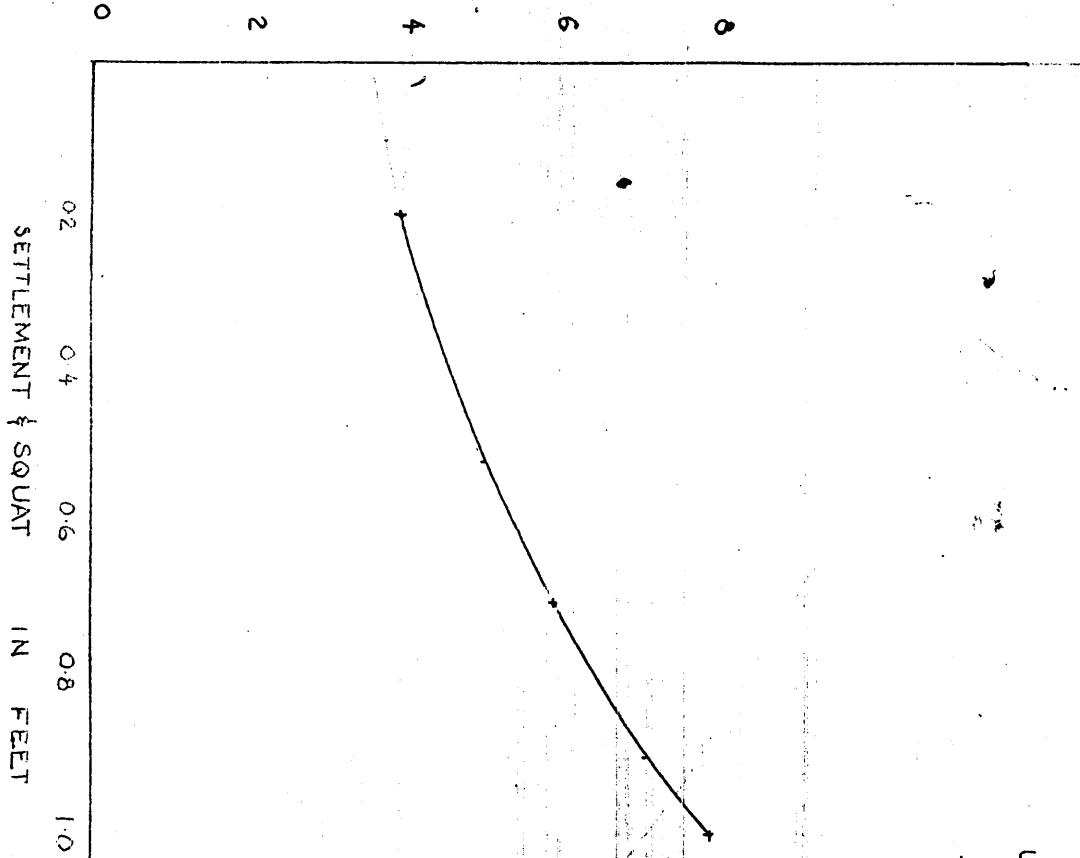
ML# 1+2

F.P.M.	ROD	ΔTIDE	F.P.M.	Avg. Rod AVE TIDE	AVE. INIL	CORR'N
0000	6.530	0.000	0000	6.531	6.531	+0.000
1000	6.720	0.027	1000	6.693	6.531	+0.162
1500	6.500	<del>0.029</del> 0.079 <del>0.053</del>	1500	6.697	6.531	+0.166
2000	6.750	<del>0.105</del> 0.105 <del>0.049</del>	2000	6.645	6.531	+0.114
2500	6.600	<del>0.132</del> 0.132 <del>0.105</del>	2500	6.446	6.531	+0.085
1500	6.850	<del>0.157</del> 0.157 <del>0.132</del>				
2500	6.640	<del>0.183</del> 0.183 <del>0.157</del>				
1500	6.910	<del>0.209</del> 0.209 <del>0.183</del>				
0000	6.830	<del>0.235</del> 0.235 <del>0.209</del>				
0000	6.860	<del>0.393</del> 0.393 <del>0.23</del>				
2500	6.830	0.417				

———— CORRECTIONS FROM GRAPH ————

F.P.M.	CORR'N	1965 season
000-500	= 0.0	
500-2025	+ 0.2	
2025-2500	= 0.0	

SETTING ON BRIDGE CONSOLE



USCGS WHITING  
CURVE SHOWING  
SETTLEMENT & SQUAT

CONSOLE SETTING	CORRECTION
0.0 - 3.8	0.0
3.8 - 4.2	+ 0.2
4.2 - 5.0	+ 0.4
5.0 - 6.0	+ 0.6
6.0 - 7.2	+ 0.8
7.2 >	+ 1.0

Drawn by S.C.  
Checked by J.M.B.

SQUAT & SETTLEMENT  
WHITING CSS 29

<u>PORT</u>	SPEED	ROD	DIFF.	TIDE	S&S
	0	1.500	0.00	0.00	0.0
	#4	1.720	+0.22	-0.10	+0.1
	#6	2.250	+0.75	-0.10	+0.6
	#8	2.700	+1.20	-0.20	+1.0
	0	1.720	+0.22	-0.25	0.0
<u>STBD</u>	0	1.140	0.00	0.00	0.0
	#4	1.690	+0.55	-0.10	+0.4
	#6	2.100	+0.96	-0.15	+0.8
	#8	2.375	+1.24	-0.20	+1.0

<u>AVERAGE</u>	SPEED	S&S
	#4	+0.2
	#6	+0.7
	#8	+1.0

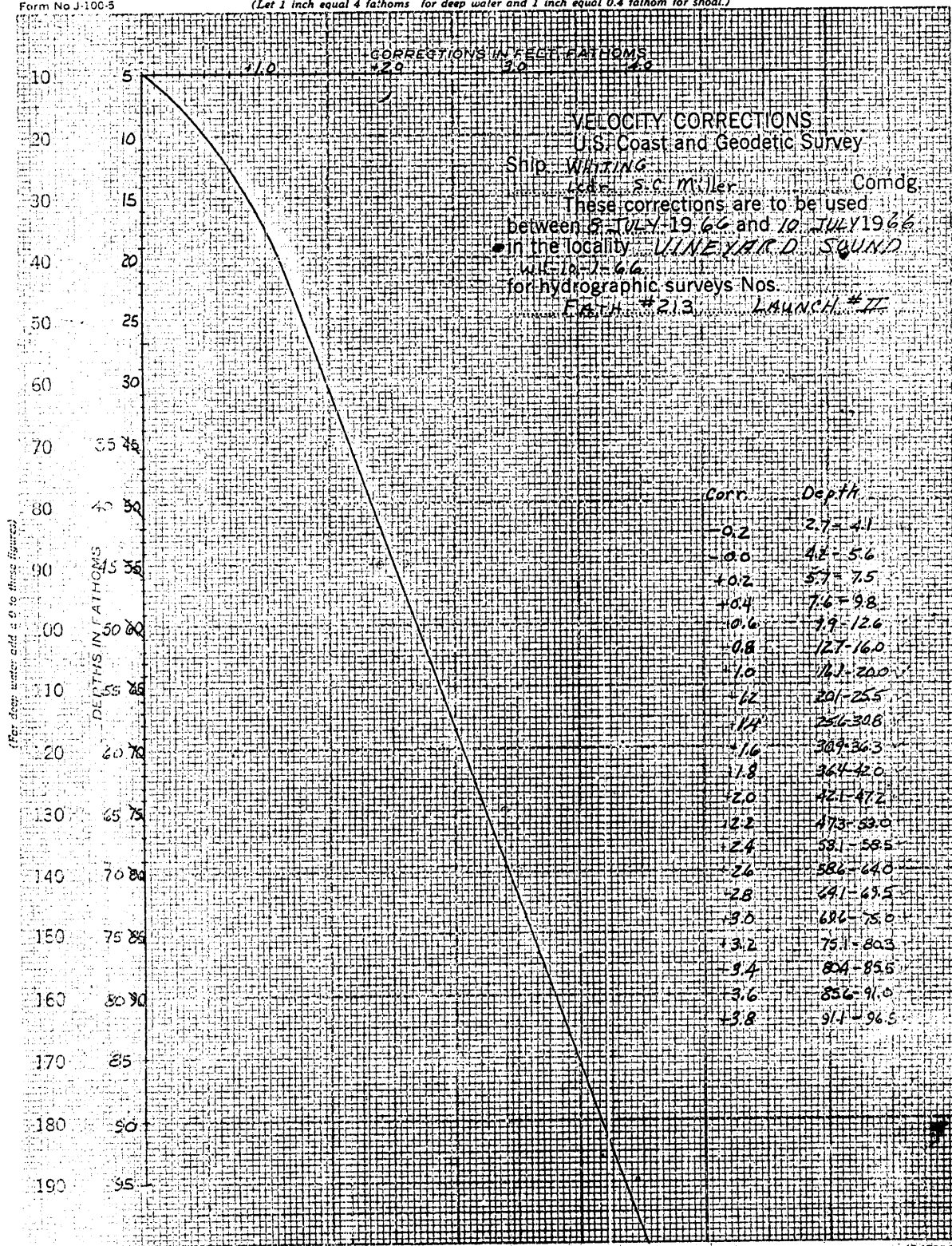
<u>CORRECTIONS</u>		
SPEED	SETTING	CORRN'
0.0	-3.8	0.0
3.9	-4.2	+0.2
4.8	-5.0	+0.4
5.0	-6.0	+0.5
6.0	-7.2	+0.8
7.0	-10.0	+1.0

Calc. by: *[Signature]*  
Chkd. by: *[Signature]*



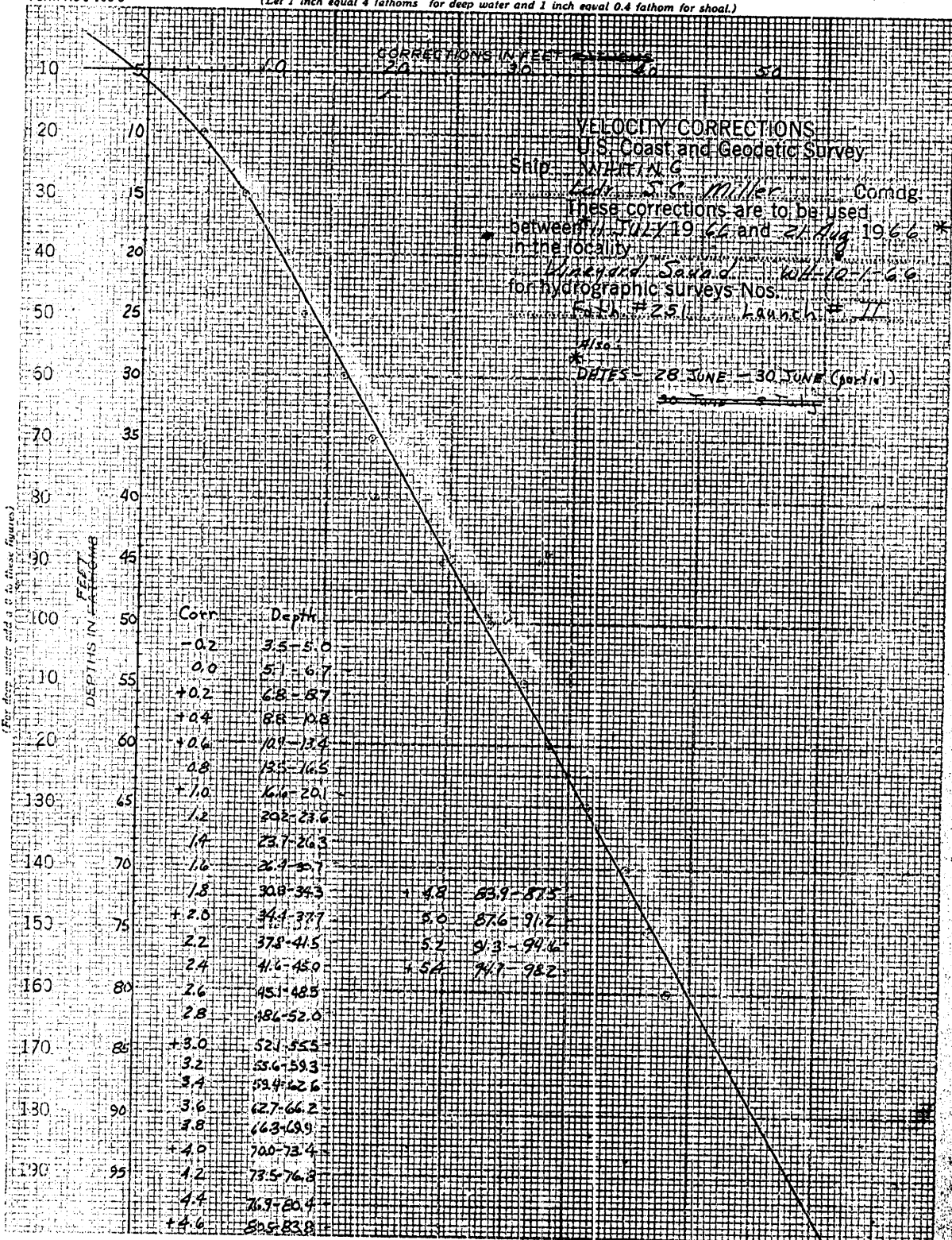
Form No J-100-5

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



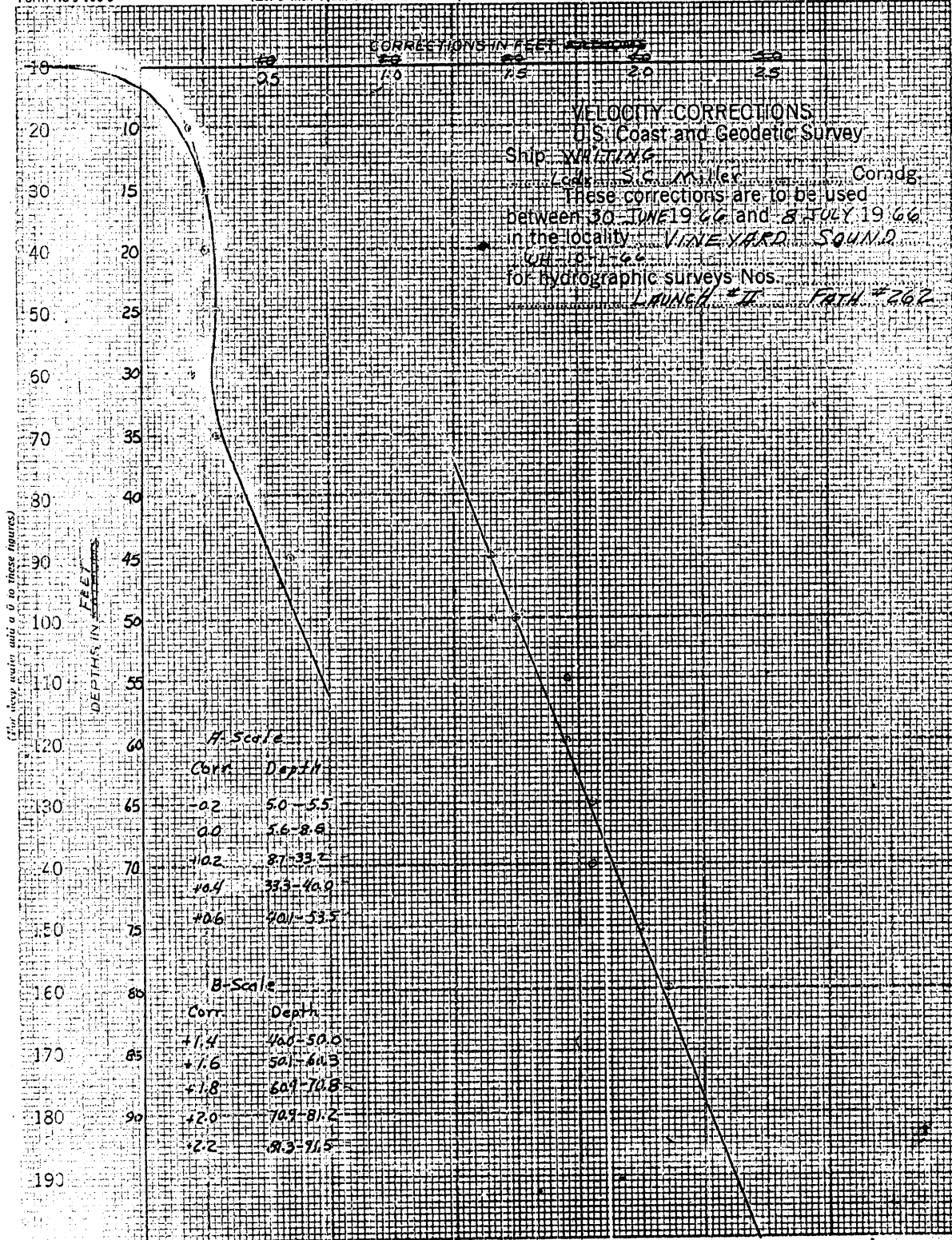
Form No J-100-5

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



Form No J-100-5

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



01114

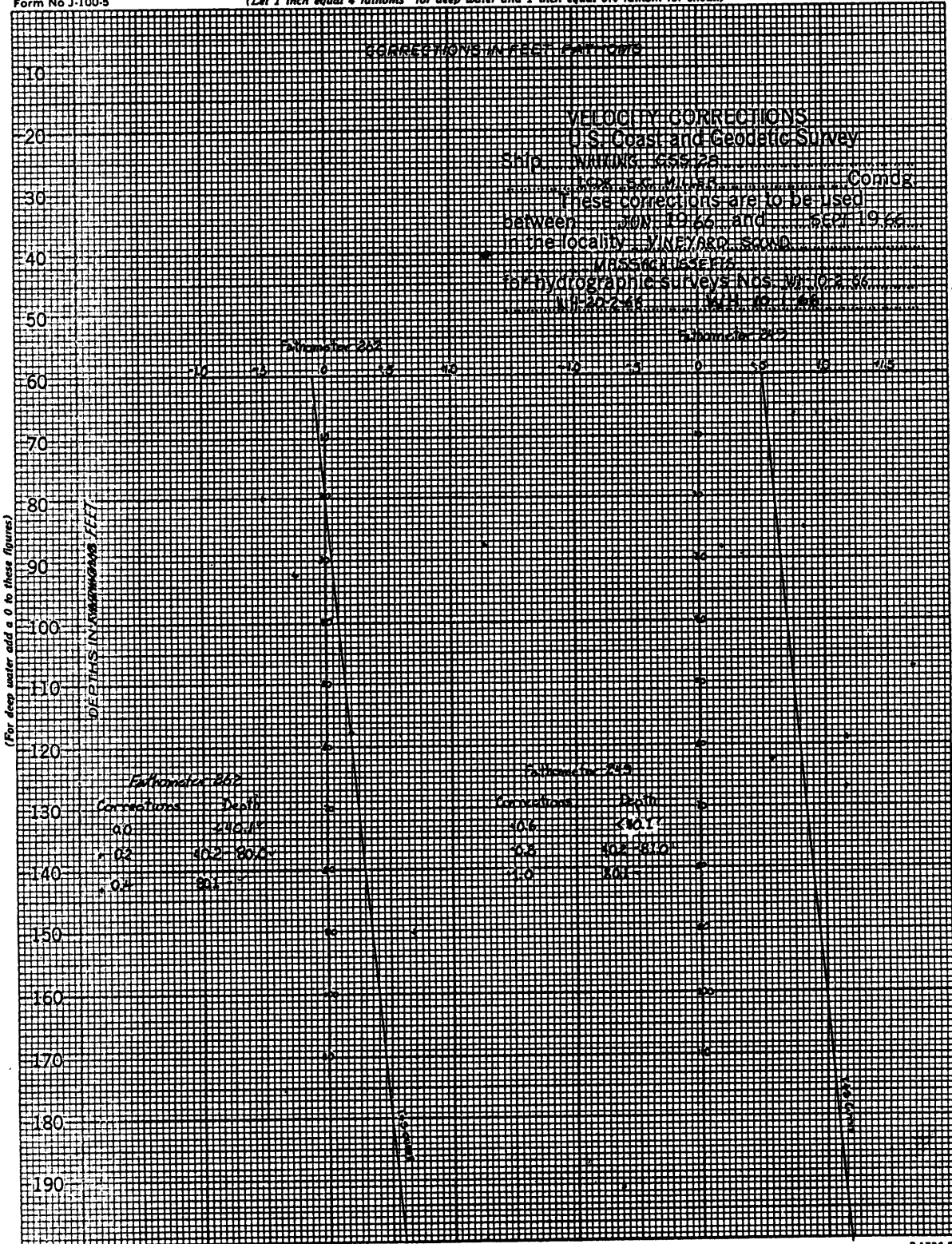
01114

01114

01114

Form No J-100-5

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



Drawn by EAK  
checked by P.F.D.

B-1736-6

## LIST OF SIGNALS

ABE	T-10641
ADO	T-11212
ALLE	ALLEN, 1938
ALP	T-11212
ANN	T-11212
ART	T-10641
BAG	T-10641
BAT	T-10641
BED	T-11212
BIG	T-11212
BUT	T-11212•
CAB	T-10641
CAT	T-11212
CHOP	EAST CHOP LIGHTHOUSE, 1904
CON	T-10641
CRY	T-11212
DEB	T-11212
DOC	T-10641
DON	T-10641
DOT	T-11212
DUDE	DUDE, 1948
EAR	T-10641
EAT	T-10641
EGG	T-10641
EGO	T-11212
FAT	T-10641
FIG	T-11212
FIT	T-11212
FOG	T-10641
GAL	T-11212
GAS	T-11212
GIN	T-10641
GOT	T-12475
GUS	GRAPHIC
GUY	T-10641
HAG	T-10641
HAT	GRAPHIC
HIS	T-10641
HOP	T-11212
HUB	T-12475

✓

ICE	T-10641
IDA	GRAPHIC
IVY	T-11212
JAP	T-10641
JAR	GRAPHIC
JIB	T-12475
JOE	T-11212
KEN	T-11212
KEY	GRAPHIC
KID	T-11212
LAY	GRAPHIC
LEO	T-11212
LIT	T-10641 (VINEYARD HAVEN BREAKWATER LIGHT, 1949)
LIZ	T-12475
LUG	T-10641
MAL	T-11212
MAX	T-10641
MOP	GRAPHIC
MUG	T-12475
NED	T-12475
NEW	GRAPHIC
NIP	T-10641
NOBS	NOBSKA POINT LIGHTHOUSE, 1904
NOR	T-11212
NUT	T-12475
OAK	T-10641
OLM	T-11212
OLD	GRAPHIC
OWL	T-12475
PAD	T-10641
PEG	T-11212
PIE	GRAPHIC
PRO	T-12475
RIO	T-11212
RIP	T-12475
ROT	T-10641
SAM	T-11212
SKI	T-10641
SOW	T-12475

TAX	T-10641
TOY	T-11212
TUB	T-12475
TOW	LAGOON HEIGHTS WATER TOWER, 1904
USE	T-10641
VAL	T-10641
VET	T-11212
WAD	T-11212
WAR	T-11212
WEST	WEST CHOP LIGHTHOUSE, 1904
WHO	T-12475
WOO	T-10641
YAM	T-11212
YES	T-10641
YET	T-12475
ZAG	T-11212
ZIG	T-12475
ZOO	T-10641
WAT	(JETTY LT. RED, 1928-49)

APPROVAL SHEET

The boat sheet and records for the area surveyed  
are complete and approved.

Sidney C. Miller  
LCDR, USESSA  
Commanding Officer



NORFOLK HYDROGRAPHIC PROCESSING BRANCH  
ADDENDUM  
To Accompany

HYDROGRAPHIC SURVEY H-8902 (Wh 10-1-66)

GENERAL

This appears to be an excellent basic survey. Soundings are in good agreement at crossings, and depth curves form normal configurations except in areas of very irregular bottom. ✓

SOUNDINGS

This office was unable to find the recorded data for the 11 foot pole sounding mentioned in paragraph "J" under item no. 6. ✓

SHORELINE

Shoreline in the vicinity of Nobska Point was transferred from basic topography chart 348 and inked on the smooth sheet in brown. (T-12501) ✓

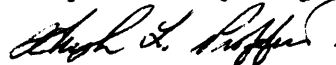
ROCKS & BUOYS

Scattered sunken and rock awash symbols which appear on the air-photo compilations were neither confirmed nor disproved. Some appear to be questionable due to the surrounding water depths. ✓

*and LAKE TASHMOO*

Buoys in Lagoon Pond were marked "Privately Maintained" as they are not listed in the Light List or charted. ✓

Respectfully submitted,



Hugh L. Proffitt  
Chief, Hydro Processing Br.



Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. *H-8902*....

Records accompanying survey: Smooth sheets *1*....;  
 boat sheets *1*....; sounding vols. *20*....; wire drag vols. *0*....;  
 Descriptive Reports *1*....; *1 Cahier of Fathograms* graphic recorder envelopes *7*....;  
 special reports, etc. .... *1 Fathometer Report*.....  
*1-Graphic Control Sheet, WH A-66*.....

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

	Verif.	Review
Number of positions on sheet	4001	
Number of positions checked	526	23
Number of positions revised	135	0
Number of positions revised (refers to depth only)	.....	0
Number of soundings/erroneously spaced	.....	0
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time .....	3 hrs.
Junctions	Time ... 4 hrs	5 hrs.
Verification of soundings from graphic record	Time ... 14 hrs	8 hrs.
Special adjustments	Time .....	0

Verification by *DAN R. MUNFORD*..... Total time *272 hrs* Date *JAN 10, 1968*

Reviewed by ..... *S. Rose*..... Time *172 hrs* Date *NOV 19, 1968*

*Sup. EACarolan*

*80*

*6/70*

TIDE NOTE FOR HYDROGRAPHIC SHEET

December 20, 1966

~~NAVY DISTRICT OFFICE~~ Atlantic Marine Center

Plane of reference approved in  
20 volumes of sounding records for

HYDROGRAPHIC SHEET 8902

Locality: Vineyard Sound, Massachusetts

Chief of Party: S. C. Miller 1966

Plane of reference is Mean low water

Tide Station Used (Form C&GS-681):

Tarpaulin Cove

Height of Mean High Water above Plane of Reference is as follows:  
1.9 feet

Remarks

Tide reducers for the following positions have been  
revised in red and verified.

Volume XVIII Position 1ad-43ad

  
Chief, Tides and Currents Branch

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8902

FIELD NO. WH-10-1-66

Massachusetts -- South Coast -- Vineyard Sound

SURVEYED: June 28, 1966, through August 23, 1966

SCALE: 1:10,000

PROJECT NO.: OPR-369

SOUNDINGS: Raytheon DE-723  
Depth Recorders

CONTROL: Sextant Fixes  
on Shore Signals

Chief of Party.....	S. C. Miller
Surveyed by.....	S. C. Miller
.....	R. A. Trauschke
.....	D. R. Rich
.....	J. Avampato
Protracted by.....	H. R. Smith
Soundings Plotted by.....	H. R. Smith
Verified and Inked by.....	Dan R. Munford
Reviewed by.....	S. Rose
.....	Date: November 15, 1968
Inspected by.....	R. H. Carstens

1. Description of the Area

This is a survey of Vineyard Sound extending from Vineyard Haven Harbor to Lackeys Bay; it includes Middle Ground, Lake Tashmoo and Lagoon Pond. The shoreline consists of boulder beaches and rocky bluffs, and is dotted by numerous small-craft piers. Middle Ground, a long and narrow shoal, stretches westward for about 2½ nautical miles from a point about ½ mile northwest of West Chop; the eastern half of this shoal has some stretches covered by no more than 4 to 6 feet of water at MLW; the western half of this shoal has a general depth of 10 to 12 feet at MLW.

The bottom is hard but somewhat unstable. Middle Ground has changed in depth and position particularly in the western portion. The depth of water between Martha's Vineyard and Middle Ground is generally between 40 to 60 feet; the depth between Middle Ground and Lackeys Bay is 60 to 80 feet.

## 2. Control and Shoreline

The source of the control is adequately described in the Descriptive Report.

The origin of the shoreline is as follows:

Reviewed Topographic Sheets:	Updated by 1966 photography for hydro support:
T-10641 (1955-61) and numbered	RS 817
T-11212 (1955-61) and numbered	RS 818
T-12475 (Advance Manuscript) compiled from 1961-63 photographs.	
Sections of shoreline in brown have been added for orientation purposes on the north from nautical chart 348.	

A. Several rock awash symbols shown on the topographic surveys, including four rocks awash off Norton Point, have been changed to sunken rock symbols in accordance with information contained in the sounding volumes of the present survey and H-1832 (1887). It is considered probable that other rocks awash not identifiable with present information should actually be sunken rocks inasmuch as color photographs used in this area do not lend themselves to a positive determination of some low-water features.

B. Robbins Rock shown as an islet in lat.  $41^{\circ}26.60'$ , long.  $70^{\circ}35.74'$  on RS 817 has been carried forward as a rock awash based on the present survey information.

## 3. Hydrography

A. Depths at crossings are in good agreement.

B. Standard depth curves are adequately delineated, except for the low-water line which could not be sounded because of foul areas inshore.

C. The development of the bottom configuration and least depths is adequate except in the rocky areas off West Chop.

## 4. Condition of the Survey

The field plotting, sounding records, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual.

## 5. Junctions

Adequate junctions were affected with the following surveys:

H-8903 (1966) on the west  
 H-8170 (1954) on the north  
 H-6348 (1938) on the northwest with which a butt-junction was made

H-6350 (1938-42) on the northeast shows a 45-ft. sounding at the bell-buoy at lat.  $41^{\circ}29.40'$ , long.  $70^{\circ}34.13'$ . The present survey in this spot has a depth of 77 feet. Examination of the records of H-6350 indicates erasure and depth-change at the position of this buoy. The charted 45-ft. depth at this position is apparently faulty and therefore should be removed from the chart. A depth of 77 feet should be charted instead.

The 73 on survey H-6350 in lat.  $41^{\circ}29.7'$ , long.  $70^{\circ}35.0'$  falls in present depths of 103 ft. and is considered discredited by the present development.

The junction with H-8821 (1964) on the east will be considered in the review of that survey.

## 6. Comparison with Prior Surveys

A.	H-161	(1845)	1:10,000
	H-163	(1845-46)	1:20,000
	H-222	(1846)	1:20,000
	H-527	(1855-56)	1:30,000
	H-595	(1857)	1:20,000
	H-1106	(1871)	1:10,000
	H-1829	(1887)	1:10,000
	H-1832	(1887)	1:20,000
	H-2852	(1906)	1:20,000
	H-2852a	(1908)	1:20,000
	H-6348	(1938)	1:5,000

All, or portions, of these surveys comprise the prior coverage of the area of the present survey. The natural shoreline of these surveys shows remarkable resemblance to that on the present survey but because of economic development numerous piers were added in later years. In general, the bottom seems stable although sand ridges have shifted in position. In Vineyard Haven Harbor in the vicinity of the steamship pier and the breakwater,

and at the inlet to Lagoon Pond, the bottom has changed due to dredging. In the deeper areas of the sound present depths are variably 2 to 4 feet greater than prior depths in many areas.

(1) Alleghany Rock at lat.  $41^{\circ}29.17'$ , long.  $70^{\circ}36.09'$  is from H-1832 on which survey it is accurately located. There seems to be no record of the rock having been demolished, but the present survey could not locate it. It is recommended that the area of this charted rock should be wire dragged for definite proof or disproval of its existence.

(2) The rock covered 7 feet at MLW, at lat.  $41^{\circ}28.94'$ , long.  $70^{\circ}36.42'$  originates with H-1832 on which it is noted as additional work. Although the present survey developed this area without finding the pinnacle its disproval is inconclusive. Additional work would be required to prove or disprove the existence of this rock.

(3) The area offshore eastwardly of West Chop is well-developed on the present survey. The rock at lat.  $41^{\circ}28.69'$ , long.  $70^{\circ}35.56'$ , which is shown as awash at the sounding datum of H-1829, is considered to be disproved as a low-water feature and was found to be covered 11 feet at MLW. Inshore of this rock, a group of submerged rocks charted from H-1106 and T-10641 are shown adequately on the present survey, and now have the correct depth of water covering each one.

(4) A rock covered 3 feet at MLW is charted from H-1832 at lat.  $41^{\circ}27.72'$ , long.  $70^{\circ}39.66'$ . Twenty meters east of this position T-11212 (RS-818) has a rock awash symbol in a group of four. This symbol was removed from the smooth sheet of H-8902, and the "3 Rk" from H-1832 was inked in its place. Sounding lines run here on the present survey and on H-1832 at 0 to 0.6 ft. of tide do not make note of these rocks. The 3 from H-1832 has a note stating that three other rocks in this group are covered by a similar depth of water. It is considered that the rocks probably do not uncover at mean low water and the symbols from T-11212 have therefore been carried forward as sunken rock symbols.



(5) H-161, H-1106, and H-1829 show shoaler depths in the area of lat.  $41^{\circ}27.55'$ , long.  $70^{\circ}35.30'$  in Vineyard Haven Harbor, at the entrance to Lagoon Pond, than shown by the present survey. The 6-ft. curve does not limit the entrance into the pond.

(6) The least depths on Middle Ground, charted from H-2852, have shifted variably in position. Southwestward of long.  $70^{\circ}40'$  the change has been the greatest, a shift northward here being as much as .1 mile. The 5-ft. peak at lat.  $40^{\circ}28.27'$ , long.  $70^{\circ}40.38'$  is superseded now by a 17-ft. peak at lat.  $40^{\circ}28.40'$ , long.  $70^{\circ}40.29'$ .

(7) The 58 charted in lat.  $41^{\circ}29.39'$ , long.  $70^{\circ}40.43'$  from H-1832 falls in present depths of 69 feet. The records indicate a strong tidal current which probably affected the accuracy of the prior sounding. The portion of the line containing the 58 differs with crosslines to the south by as much as 9 to 10 feet. The 58 and other soundings on this portion of the line are considered to be inaccurate and should be disregarded.

Several depths from the prior surveys were carried forward to supplement present depths. Together with these soundings the present survey supersedes the prior surveys.

B. FE No. 2, 1955  
FE No. 4, 1960

FE No. 4, 1960, is a wire-drag survey, the effective depths of which do not conflict with the hydrography of the present survey. There are no additional wire-drag surveys in the area covered by the present survey.

One depth from the FE 2, 1955 was carried forward to the present survey to supplement present depths. Together with this sounding, the present survey supersedes FE 2, 1955 in the common area.

7. Comparison with Charts Nos. 260, 261, 264, and 348

Chart No. 260, Fourth Ed., January 1, 1968  
 Chart No. 261, Third Ed., February 6, 1967  
 Chart No. 264, Third Ed., February 6, 1967  
Chart No. 348, Seventeenth Ed., December 19, 1966

Portions of the present survey fall on parts of Charts Nos. 260, 261, and 348; the entire area of the present survey falls on a part of Chart No. 264. Chart 348 is at twice as large a scale as the present survey.

#### A. Hydrography

The charted hydrography within the area of the present survey on these charts is from the previously discussed prior surveys, from the boat sheet of the present survey, and from Chart Letter No. 519 (1963). The boat sheet of the present survey has been applied to these charts only partially, and even in overlapping portions of the charts application in some instances has been only to the larger scale chart. Depths on the boat sheet differ from smooth sheet depths by 1 to 4 ft. as a result of the application of correctors.

The small portion of Chart No. 348 which falls on the present survey was charted from H-8170 (1954), H-6348 (1938), and T-1858 (1888-1889). The 6-ft. curve on the present survey is closer to shore than charted.

Attention is directed to the following:

(1) A charted 50-ft. depth at lat.  $41^{\circ}29.30'$ , long.  $70^{\circ}37.88'$  on Chart No. 260 originates with the boat sheet of the present survey on which it is inked in error. The correct depth at that position is 59 feet.

(2) A charted 51-ft. depth at lat.  $41^{\circ}28.10'$ , long.  $70^{\circ}40.00'$  on Chart No. 260 originates with the boat sheet of the present survey on which it is inked in error. The correct depth at that position is 63 feet.

(3) A charted 30-ft. depth at lat.  $41^{\circ}30.00'$ , long.  $70^{\circ}40.58'$  on Chart Nos. 260 and 264 originates with H-1832. The review of H-6348 as well as the hydrography of the present survey discredits this sounding which on the present survey falls in depths of 61 feet.

(4) A hand-correction showing the sunken FLYING DUTCHMAN, N.M. #34 (1968), was added to Chart Nos. 260 and 264 at lat.  $41^{\circ}29.50'$ , long.  $70^{\circ}37.50'$  subsequent to the present survey. #6862

(5) The wreck of the fishing boat MARGIE L, N.M. #34 (1958), charted in lat.  $41^{\circ}29.20'$ , long.  $70^{\circ}37.50'$ , should be retained as charted. Investigation of this feature has been assigned to a wire-drag project.

#6861

(6) The dolphins at the entrance to Lagoon Pond, at lat.  $41^{\circ}27.50'$ , long.  $70^{\circ}35.25'$  are incorrectly charted on Chart Nos. 261 and 264; see Chart Letter No. 519 (1963). The correct delineation of these dolphins is shown on RS-817 (T-10641) and on the insert of T-12497.

(7) The 12-ft. depth charted at lat.  $41^{\circ}28.50'$ , long.  $70^{\circ}35.57'$  on Chart Nos. 260, 261, and 264 originates with a stray inked on the boat sheet of the present survey. The correct depth at this position is 17 feet.

(8) The rock awash charted in lat.  $41^{\circ}30.25'$ , long.  $70^{\circ}41.77'$  from the advance manuscript of T-12475 (1961-63) falls in present depths of 12 ft. Reexamination of various photographs and survey information has discredited the rock awash; the symbol will be removed from the manuscript.

Except as noted above the present survey supersedes the charted hydrography in the common areas of the three charts and the present survey.

#### B. Controlling Depths

The controlling depth into Lake Tashmoo is 4 feet at MLW.

The controlling depth into Lagoon Pond is 7 feet at MLW.

#### C. Aids to Navigation

The charted positions of the floating and fixed aids to navigation (within the area of the present survey) on these four charts are in good agreement with the present survey, and each one adequately marks the feature intended. The West Chop Bell buoy No. 2 was replaced, subsequent to the survey, by a lighted gong buoy.


8. Compliance with Instructions

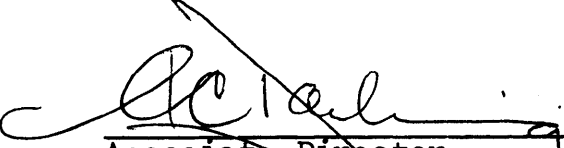
The present survey complies adequately with the project instructions.

9. Additional Field Work

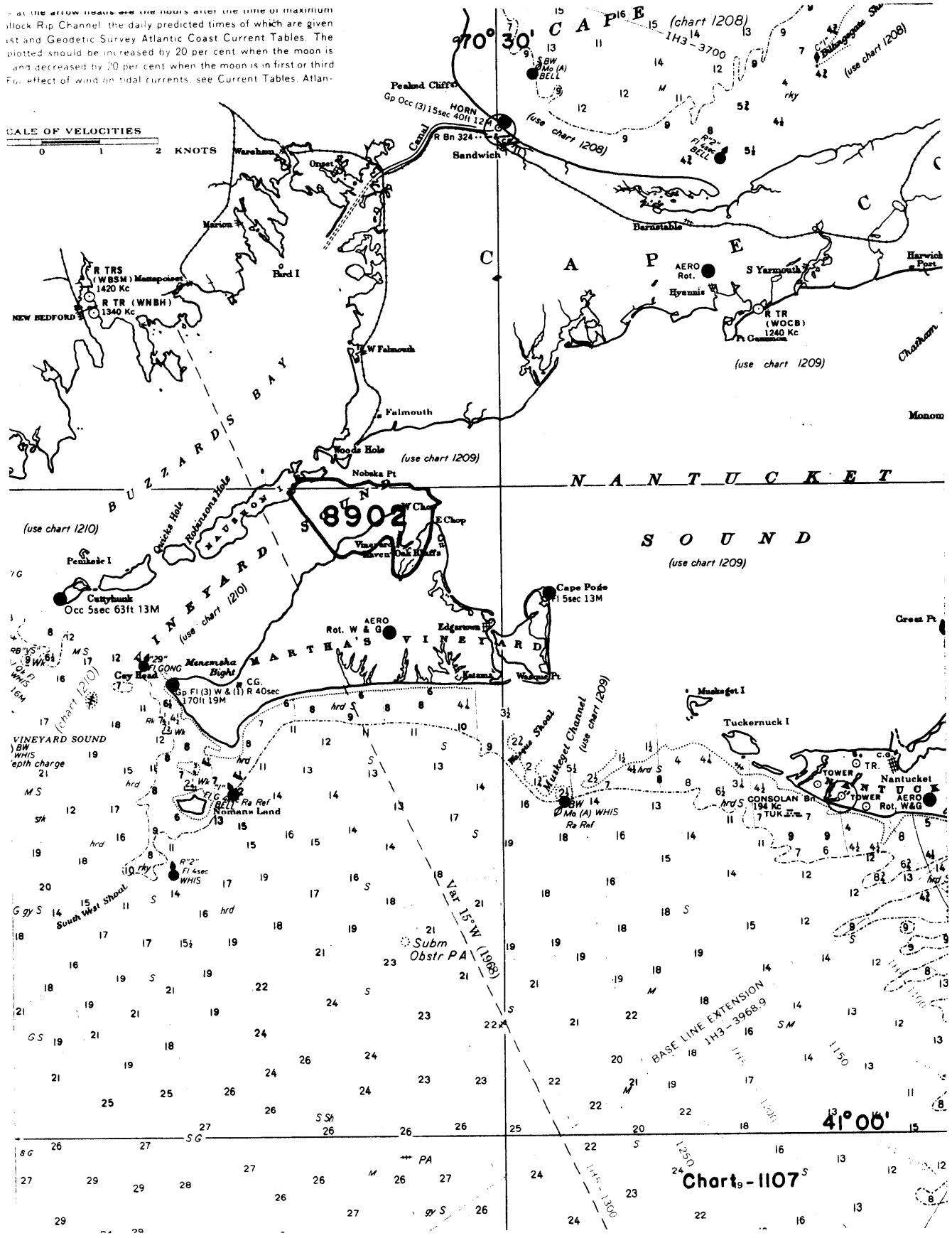
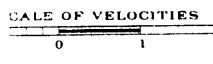
The present survey is a good basic survey and no additional field work is required at this time. A wire-drag investigation of the rocky pinnacles northward of West Chop including Alleghany Rock should be accomplished at an opportune time in the future.

Examined and Approved:

  
\_\_\_\_\_  
Chief  
Marine Chart Division

  
\_\_\_\_\_  
Associate Director  
Office of Marine Surveys  
and Maps

At the arrow heads are the hours after the time of maximum flood Rip Channel, the daily predicted times of which are given in the first and Geodetic Survey Atlantic Coast Current Tables. The plotted should be increased by 20 per cent when the moon is full and decreased by 20 per cent when the moon is in first or third quarter. For effect of wind on tidal currents, see Current Tables, Atlantic Coast.



Charts:

- 260 - Part appd after Verification, before Review & Inspection 9/26/68
- 261 - Part appd after Verification, before Review & Inspection 9/26/68
- 270 - Part appd after Verification before Review & Inspection 9/26/68
- 264 - Part appd after Verification before Review 10/5/68
- 114SC - Part appd after Verification before Review 10/5/68
- 348 - Partly applied 12-17-68

H-8907

Development

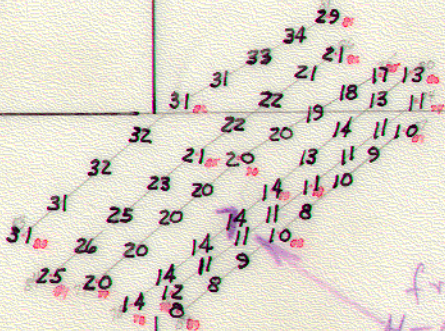
Strips

INSIDE THIS  
POUCH

- 260 - Part appd after Review before Insp. 8-20-69
- 348 - Full appd after Ver. & Review before Insp. 12/2/68
- 259 - Part app after V+R before Insp. 12/2/68

78-79 "ab"  
17-18 "h"  
64-65 "t"  
72-73 "ab"  
38-39 "h"

41° 29' 00"



Allegheny  
Rock



5

from  
H-1832 (1887)

Presurvey Review Item #6  
Development of 7 ft. shoal (rock).

WH-10-1-66 "ab" day

Aug. 18, 1966

Lab # 2

70° 36' 30"

92 "t"

57

60

49

63

41

58 53

101-102  
"ab"

36

19

47

44

39

35

19

24

35

57

43

42

from  
H-1832 (1887)

19

20

19

15

14

14

14

12

12

10

9

9

9

9

9

9

9

9

9

9

9

Alleghany Rock

Note 91-92 "t"  
vol. 12, p. 70

96-97 "ab"  
vol. 17, p. 17

91 "t"

(3 not identified)

Pre-Survey Review Item #3

41°29'00"

Development of Alleghany Rock

WH-10-1-66 "ab" day

Aug. 18, 1966

Lch # II

70° 36'00"





41°29'00"

← FE 4 1960

10 12 14 21 23 28 30 36.  
 6 7 9 12 16 20 23 26 27 30 31 33.  
 6 7 8 11 14 19 24 26 28.  
 6 7 8 9 11 15 18 24 26 27 23 23.  
 10 12 16 22 23 24 23 22.  
 10 12 16 22 22 21 22 22 22.

1" ad"  
Vol. 18  
P. 3

2" ad"

43" ad"  
Vol. 18, P. 12

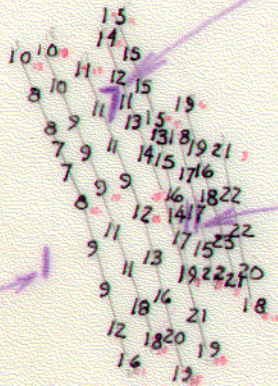
Rock Development  
Lch #II  
Aug. 23, 1966  
WH-10-1-66  
"ad" day. 41°28'30"

70° 36'

Pre-Survey Item #7 70° 35'

41°29'

9 ← FE 4 1960



pos. 1 "ad" → \*

pos. 2 "ad" → |

43 "ad"

Vol. 18, P. 12

Rock Development  
 Lch. #II  
 Aug. 23, 1966  
 WH-10-1-66  
 "ad" day.

41°28'30"

70°36'

Pre-Survey Item #17 70°35'

RECORD OF APPLICATION TO CHARTS

Continued from  
Inside Back Cover  
H8902

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO.

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
1209	10-9-69	Jrene Beeler	<del>Full Part</del> <sup>before</sup> Part <del>Before</del> After Verification Review Inspection Signed Via 260 Drawing No. 6 without application to cht 264
261	4-20-70	Jrene Beeler	Full <del>Part Before</del> <sup>before</sup> After Verification Review Inspection Signed Via Drawing No. Minor revision of sdgs + curves for full agreement after review
348	4-21-70	Jrene Beeler	Full <del>Part Before</del> <sup>before</sup> After Verification Review Inspection Signed Via Drawing No. Full revision (See History #20 Item #1)
260	4-21-70	Jrene Beeler	Full <del>Part Before</del> <sup>before</sup> After Verification Review Inspection Signed Via 261 Drawing No. 6; cht 348 Dwg #20; Extensive revision
249	4-22-70	Jeffrey Stuart	<del>Full Part Before</del> <sup>before</sup> Part After Verification Review Inspection Signed Via Drawing No. Applied thru larger scale Charts
348	8-5-70	Jrene Beeler	Full <del>Part Before</del> <sup>before</sup> After Verification Review Inspection Signed Via Drawing No. Retained <sup>50m</sup> sdgs + Rks from H8170 + H6348
261	8-6-70	Jrene Beeler	<del>Full Part Before</del> <sup>before</sup> After Verification Review Inspection Signed Via Drawing No.
	7-28-70	Curtis L. Beeler	
260	8-6-70	Jrene Beeler	Full <del>Part Before</del> <sup>before</sup> After Verification Review Inspection Signed Via 261 Drawing No. 6 and cht 348 #19
264	8-10-70	Jrene Beeler	Full <del>Part Before</del> <sup>before</sup> After Verification Review Inspection Signed Via 264 Drawing No. 7 and cht 260 Dwg #6
114-5C	8-14-70	James Chahard	Full <del>Part Before</del> <sup>Reviewing complete</sup> After Verification Review Inspection Signed Via Drawing No. Revised sdgs & curves thru cht. 249 Dwg #32 & Cht. 264 Dwg #6 & app'd partial inspection changes
259	12-4-70	Jennifer M. O'Connor	Full After Verification Review Before Inspection <del>Inspected</del> <del>previously applied to cht 261 #6 and cht 264 #19</del>
114-5C	1-18-71	Hebeador Radda	Full after V&R before inspection (Deleted 45 sdg and Added 48 sdg)
114-5C	1-21-71	R.D. Sanodini	Part after V&R before inspection - Revisions from inspection changes of smooth sheet. Dwg. #7 (CEE)

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8902

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
264	1/71	R. Sanschi	<del>Full Part Before</del> After Verification Review <del>Inspection</del> Signed Via Drawing No. 7 - Revisions from <sup>partial</sup> inspection changes of Smooth Sheet thru SL-114 (Proof) #249 Aug #33.
<del>1209</del> 249	1/71	R. Sanschi	<del>Full Part Before</del> After Verification Review <del>Inspection</del> Signed Via Drawing No. 33. Revisions from partial inspection changes of smooth sheet thru SL-114 (Proof).
1209	4/71	R. Sanschi	<del>Full Part Before</del> After Verification Review <del>Inspection</del> Signed Via Drawing No. Applied overlap area of 1210 Dr #52
1209	5/71	K. GEAN	<del>Full Part Before</del> After Verification Review <del>Inspection</del> Signed Via Drawing No. APPLIED REVISIONS THRU CHART 264 DRAW #7
260	8/71	K. GEAN	Full Part Before After Verification Review <del>Inspection</del> Signed Via Drawing No. 6 EXAM & APPLIED CRITICAL CORRECTIONS
259	9/21/71	J.H. Eaton	Full <del>Part Before</del> After Verification Review <del>Inspection</del> Signed Via Drawing No.
348	10-6-72	J. Bailey	Full <del>Part Before</del> After <del>Verification Review</del> <del>Inspection</del> Signed Via Drawing No. 21 fully applied
260	2-21-73	J. Bailey	Full <del>Part Before</del> After <del>Verification Review</del> <del>Inspection</del> Signed Via Drawing No. 8 fully applied Applied in part thru: Drug 348 #21
261	3-28-73	J. Bailey	Full <del>Part Before</del> After <del>Verification Review</del> <del>Inspection</del> Signed Via Drawing No. Fully Applied. IN PART THRU CHT. 260 AND IN PART DIRECTLY.
264	4-3-73	J. Bailey	Full <del>Part Before</del> After Verification Review <del>Inspection</del> Signed Via Drawing No. 8 Appl. thru Drug 260 #8, DRUGS: 261 #8 and directly.
114 SC PAGES C & E	5-27-73	DL Polillo	Fully Applied after inspection DRUG CHT 264, DRUGS #8
249	6-25-73	J. Bailey	Fully Applied thru Drug. 114-SC #10 (Pages C and E)
1209	8-73	O Chipman	Fully applied after insp. thru Chart 264. #8
1210	10-31-73	J. Bailey	Fully Applied after Insp. thru DRUG. 1209 #40X

