

9646

Diagram No. 1210-4

NOAA FORM 78-35A

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

DESCRIPTIVE REPORT

Type of Survey . . . Hydrographic

Field No. WH-10-8-76

Registry No. H-9646

LOCALITY

State Massachusetts

General Locality Buzzards Bay

Sublocality Knox Point to Kettle Cove

19 76-77

CHIEF OF PARTY

CDR J.W. Carpenter

LIBRARY & ARCHIVES

DATE October 10, 1989

☆U.S. GOV. PRINTING OFFICE: 1985-568-054

9646

GP

13230
13218

13229 die

Carlog
Sign off on
form in back

HYDROGRAPHIC TITLE SHEET

H 9646

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-10-8-76

State Massachusetts

General locality Buzzards Bay

Locality Kettle Cove, Naushon Island to Knox Point, Nashawena Island

Scale 1: 10,000

Date of survey Sept. Oct. 1976 ^{JUN 9--NOV 13} ₁₉₇₇

Instructions dated January 16, 1976

Project No. OPR-503-WH-76

Vessel NOAA Ship WHITING

Chief of party CDR. J. W. Carpenter

Surveyed by CDR J. Carpenter, LCDR D. Wilson, LT. D. Yeager, LTJG J. Gofus, Ens. N. Konchuba, G. Barone, D. Goodrich, J. Rubino

Soundings taken by echo sounder, ~~hand lead, etc.~~

Graphic record scaled by WHITING Personnel

Graphic record checked by WHITING Personnel

Protracted by VERIFIED BY N/A D.V. MASON

Automated plot by SYNETICS 1201

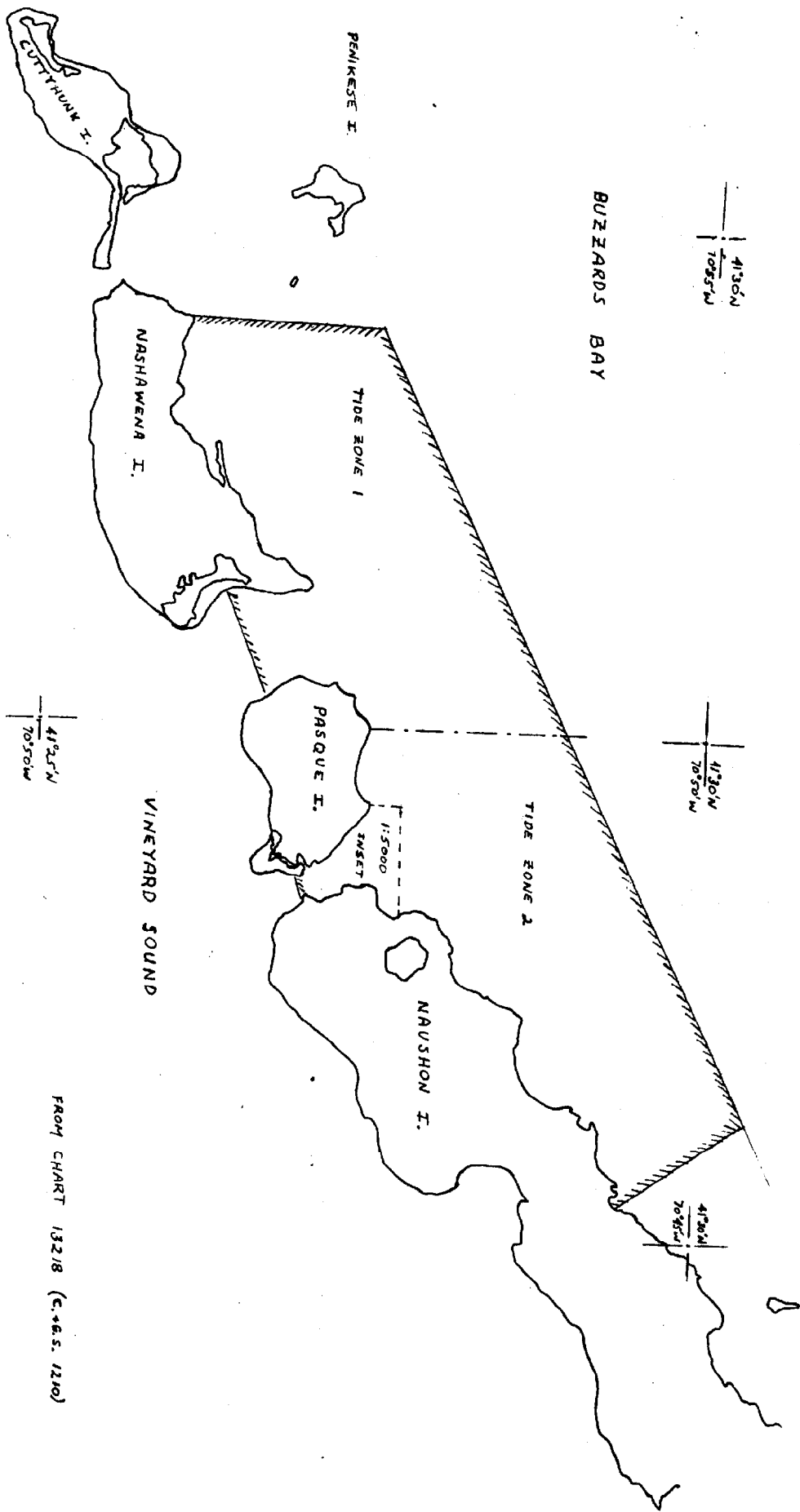
Soundings penciled by N/A

Soundings in ~~XXXXXX~~ feet at MLW ~~MLLW~~

REMARKS: All times are G. M. T.

Always Surf G. MYERS 10/12/89

JRW 10/16/91



FROM CHART 13218 (C. & G. S. 1210)

DESCRIPTIVE REPORT

WH-10-8-76
K - Sheet
H-9646

A. PROJECT INSTRUCTIONS

This survey was conducted by the Launches and personnel of the NOAA Ship WHITING in accordance with project instructions OPR-503-WH-76, dated January 13, 1976, as amended by change numbers 1, 2, and 3 dated January 22, 1976; April 7, 1976; and April 15, 1976 respectively. All work done on this survey was done in accordance with the Provisional Hydrographic Manual.

B. AREA SURVEYED

The area covered by this survey is located in the southern part of Buzzards Bay, Massachusetts. Specifically, the survey covers the waters due north of Nashawena, Pasque, and Naushon Islands from the shoreline to approximately one mile off shore; from Long. $70^{\circ}45'20''$ W to $70^{\circ}54'00''$ W. Quick's Hole and Robinson's Hole were also surveyed to junction with the work done on the south side of the Islands by the NOAA Ship WHITING in 1966. The area was surveyed at a scale of 1:10,000 with the exception of Robinson's Hole which was done at 1:5,000. Most of the survey work was done by Launch WH-2 (Hull No. 1207, EDP No. 2932) on 24-26 August (J.D. 237-239), 30-31 August (J.D. 243-244), and 10-13 September (J.D. 254-257). This launch was also used to survey in Robinson's Hole on 7 October (J.D. 281) and 19-20 October (J.D. 293-294). Some survey work in Quick's Hole was done by Launch WH-1 (Hull 1206; EDP No. 2931) on 14 September

(J.D. 258) and all bottom samples were done by this launch on 11 September (J.D. 255). Some inshore surveying was done with Skiff WH-3 (EDP No. 2933) on 14 September (J.D. 258). This skiff was also used on 29-30 September (J.D. 273-274), to survey part of Robinson's Hole. The bottom in the survey area is mostly sandy, with large pinnacle rocks extending to or near the surface. The shoreline of the Elizabeth Island^s bounding this survey is characterized by bluffs with a few sandy beaches separated by long stretches of boulder-strewn shore.

C. SOUNDING VESSEL

The survey of this area was accomplished by the Launches and skiff of the NOAA Ship WHITING. Launch WH-2 (EDP No. 2932) did most of the survey work, Launch WH-1 (2931) did some surveying in Quick's Hole and all of the bottom samples on this survey, Skiff WH-3 (2922) did some close inshore surveying and part of the 1:5,000 scale survey in Robinson's Hole. Launch WH-1 is equipped with a digital control unit (DCU) which necessitates reformatting all data acquired with this Launch. Data obtained with the skiff was recorded in the sounding volumes and logged manually.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Launch WH-2, equipped with a Raytheon Model DE-723 Echo Sounder Serial Number 37018, did most of the survey work, operating in depths of 1 to 130 feet. Launch WH-1, equipped with a Raytheon Model DE-723 Echo Sounder Serial Number 37010, surveyed

in depths from 4 to 45 feet. Skiff WH-3 was equipped with a Raytheon Model DE 719-B, Serial Number 3747, with a side mounted transducer survey in depths of 1 to 45 feet.

Operators of the Model DE-723 Echo Sounders made frequent checks of initial, stylus and A-F scale. Bar checks were taken daily or as weather permitted. Operators of the Model DE 719-B Echo Sounder, checked constantly to assure that both calibration marks were properly aligned. In order to observe the calibration mark at the zero mark, the initial was set to the draft of the transducer. This was necessary because the initial trace covers the calibration mark if set at zero. Since the draft was included on the Graphic Record, no value for draft is included on corrector tapes. Since the size of the skiff precluded bar checks, direct comparisons using a sounding pole were obtained as a check on analog readings. Since the draft of the transducer varied daily according to the crew of the skiff, the draft of transducer was measured directly by sounding pole daily with the skiff operating at different speeds to obtain accurate readings.

Velocity corrections to Echo Soundings were obtained by TDC Casts. Several TDC Casts taken throughout the survey area were in excellent agreement, so the TDC Cast taken on J.D. 257 was selected as representative and was used as the basis for the velocity corrections applied to all soundings on this survey. Differences between the bar check results and the TDC results were analyzed graphically and were determined to be within the limits prescribed in the Provisional Hydrographic Manual as being

insignificant. An abstract of corrections to Echo Soundings and a listing of the velocity corrections tape are included in the Appendix. TDC Casts were computed using RK530 and a draft of 1.5 ft. was input in all cases since the draft of both launches was the same. Settlement and squat data for Launch 1²⁹³¹ was determined during the Buzzards Bay Project, settlement and squat data for Launch 1207, Launch 2²⁹³², was determined by the NOAA Ship MT MITCHELL IN January 1976. Values for settlement and squat are abstracted in Appendix and applied on TC/TI tape furnished with this survey.

E. HYDROGRAPHIC SHEETS

The field sheets were prepared on board the NOAA Ship WHITING using the automated plotting system. The main 1:10,000 sheet projection was plotted with a skew of 28° as laid out in instructions from the Atlantic Marine Center. The 1:5,000 scale inset of Robinson's Hole was plotted with a 0° skew. The field records will be sent to Atlantic Marine Center for verification and smooth plotting. The field sheets are plotted with predicted tides and are corrected for the mean draft of the survey vessels, but settlement and squat corrections have not been applied.

F. CONTROL STATIONS

All control stations on this survey were established or recovered by Photo Party 62, using third order or better

methods, with the exception of Station Fuss which was located by WHITING personnel using the Theodolite three-point fix with check method. Since this was a temporary station, it was not monumented.

G. HYDROGRAPHIC POSITION CONTROL

The main scheme hydrography was run on courses 000° and 180° in Range-Range mode using Del Norte Systems. In the southeast portion of Quick's Hole, terrain blocked the signals so this area was surveyed by the Range-Azimuth method using Del Norte and a wild T-2 Theodolite. This Range-Azimuth technique was also used to survey the small bay in the area of "The Neck" on the northern side of Nashawena Island. A complete abstract of stations and equipment used along with correctors is included in the Appendix.

The 1:5,000 scale inset of Robinson's Hole was controlled by visual methods. On the northern portion of this area, the length of the lines in conjunction with the strong currents present in the area made it very difficult to steer straight lines. In order to overcome this problem and provide the helmsman, a continuous reference for steering the lines in this area was conducted using the automated Range-Range Program RK111 to provide the steering indicator, however, all the actual control of the hydrography was strictly by visual means.

Del Norte rates were checked in the field by positioning the launch as close as possible to a known fixed aid, Cuttyhunk

Harbor Harbor north jetty light and comparing readings with computed correct distances after J.D. 254.

Del Norte rates were checked in the field using three-point sextant fixes. Del Norte units were calibrated using a baseline distance every other week. Some interference of the Del Norte signals caused by the NOAA Ship PEIRCE operated Del Norte units on the same frequency resulted in erroneous positions (flyers). These erroneous positions were corrected since accurate positions could be resolved by interpolating time and course between reliable positions. In instances of prolonged interference, the lines affected were resurveyed at a later time, after rejecting poor data.

Field calibration abstracts showing observed corrections as well as average correctors obtained and applied to corrector tapes and the results of baseline calibrations are all included in Appendix. Final corrector abstract showing actual corrections applied to tapes is included also and should be considered the final abstract since corrections on this abstract were derived from the field abstract.

H. SHORELINE

The shoreline details shown on the field sheet are from shoreline manuscripts, TP-00774, Robinson's Hole, and TP-00775, Nashawena Island. Field edit of this area was conducted by Photo Party 62.

I. CROSSLINES

On the 1:10,000 scale survey conducted with electronic control, there were 18.9 Nautical miles of crosslines. This amounted to 8.7% of the miles of sounding line run. Agreement between crosslines and main scheme lines was excellent with differences of less than 1 foot throughout the entire survey. On the 1:5,000 scale survey, conducted with visual control, there were two nautical miles of crosslines. This amounted to 6.5% of the miles of sounding line. The agreement between the crosslines and the main scheme lines was very good considering the extreme irregularity of the bottom.

J. JUNCTIONS

This survey junctions with contemporary WHITING surveys: WH-10-7-76, H-9645, on the east; and WH-10-9-76 on the west. On the north side of the survey junction is with PE-20-1-76, H-9615. In Quick's Hole this survey junctions with H-8904; in Robinson's Hole the junction is with H-8903; both these surveys were conducted by the NOAA Ship WHITING in 1966.

Agreement with WH-10-7-76 was excellent with differences of one foot or less except in the extreme northwestern area where because of the sloping bottom differences were as much as 2 feet.

On the north, the agreement with survey H-9615, PE-20-1-76, was very good in most areas with differences of 2 feet or less. Some larger differences are present in the area of the shoal near Lat. $41^{\circ}27'50''$, Long. $70^{\circ}51'50''$. However, both surveys found a least depth of 25 feet in the same location so discrepancies are

attributed to the rapid slope of the bottom in this area. Several differences of 3 to 5 feet are also present in the area.

In Quick's Hole, the agreement with Survey H-8904 is very good considering the irregular bottom of the area, depth contours are continuous.

In Robinson's Hole the agreement with Survey H-8903 was very good considering the extreme irregularity of the bottom in this area.

K. COMPARISONS WITH PRIOR SURVEYS

The area surveyed is covered by two prior surveys: west of Robinson's Hole the prior survey is H-2267, September 1896; to the east the prior survey is H-2268, October 1896. Agreement with H-2267 is very good with differences of two feet or less throughout the area. For the most part, the prior survey appears to be consistently shoaler. On the eastern half of the survey, the agreement with Survey H-2268 is very good with differences of two feet or less with this prior survey also being consistently shoaler.

There were seven numbered pre-survey review items on this survey; these are detailed as follows:

P.S.I. 8 consists of three rocks located by a resident of the area in chart letter 896 of 1935. Only one of these rocks is on this survey. It is a ³ foot depth at Lat. $41^{\circ}27.54'$,
Long. $70^{\circ}49.26'$. *LOCATION ON T-SHEET*
15.6' *32.4"*

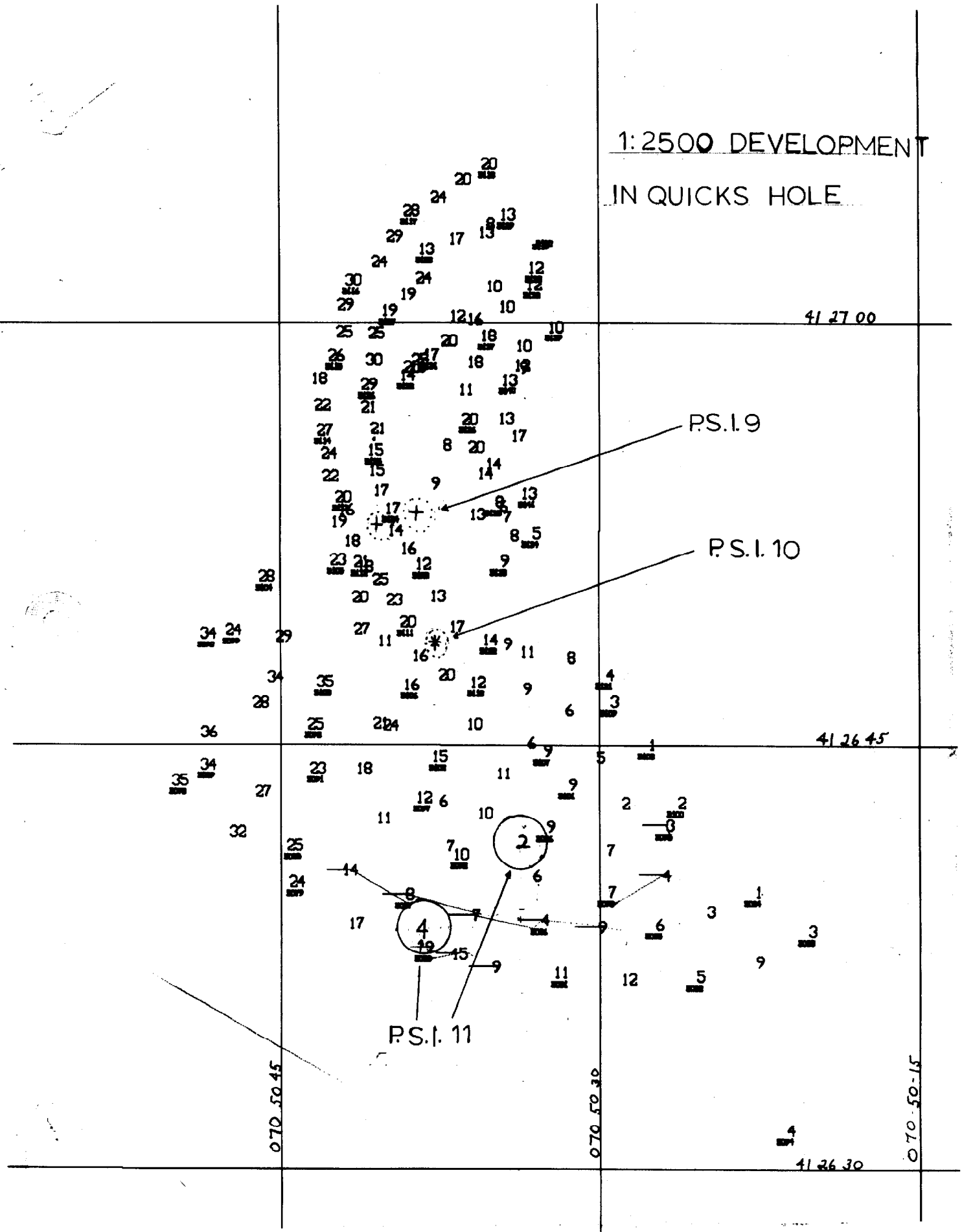
This rock is within the area of the Robinson's Hole 1:5,000 survey. No evidence of this rock was found after drift searching in the area. However, it is recommended that they be retained for charting purposes, pending a wire-drag survey.

P.S.I. 9 consists of two submerged rocks charted at Lat. $41^{\circ}26'.88''$ ^{52.8"}, Long. $70^{\circ}50'.66''$ ^{39.6"} from T-12498 (1961-62). This area was extensively developed in search of these rocks, in addition to the main scheme lines in the area. Development controlled by the Range-Azimuth method was conducted and then Launch WH-1 attempted to locate the rocks by repeatedly drifting over the area. The least depths resulting from these developments were a pair of 9 foot soundings at Lat. $41^{\circ}26'53''$, Long. $70^{\circ}50'37''$, approximately 70 meters east of the charted position. It is recommended that these submerged rocks be retained on all charts pending a final disposition by wire-drag. *There is a 8ft sndg Lat $41^{\circ}26'55''$ Long. $70^{\circ}50'38''$.*

P.S.I. 10 is a rock awash charted at Lat. $41^{\circ}26'.78''$ ^{46.8"}, Long. $70^{\circ}50'.63''$ ^{37.8"}, probably from T-1938 (1889). The presurvey review states that this feature does not appear on any more recent topographic surveys. No rock was visible in this area even when the predicted tide was as much as .4 foot below mean low water. Intense development, controlled by Range-Range, Range-Azimuth, and drifting through the area, was conducted. The least depth in the vicinity was a $7\frac{1}{2}$ foot sounding at Lat. $41^{\circ}26'46''$, Long. $70^{\circ}50'35''$, approximately 90 meters southeast of the charted position. It is recommended that the rock awash be deleted from the chart and the $7\frac{1}{2}$ foot sounding be added.

1:2500 DEVELOPMENT

IN QUICKS HOLE



P.S.I. 11 consists of four shoals charted from prior surveys as follows:



<u>SDG (Ft.)</u>	<u>Lat.</u>	<u>Long.</u>	<u>Survey</u>
6	41°26' ^{36"} 8'	70°51'.2''	H-1802 10' shoalest depth from this survey.
5	41°26'. ^{26.40} 44'	70°50'.38'' 22.8''	H-163 8 to 12 feet shoal depths in this area.
4	41°26'. ^{38.4"} 64'	70°50'.63'' 37.8''	H-2355 8 ft shoalest depth in this area.
2	41°26'. ^{41.4"} 69'	70°50'.66'' 39.6''	H-1802 8/9 ft shoalest depths in this area.

Evidence of the 6 foot sounding, consisting of a side echo to a depth of 6 feet not connected to the bottom, was obtained. This sounding was approximately 45 meters southwest of the charted position. Therefore, it is recommended that this sounding be retained.

✓ No conclusive evidence of the 5 foot sounding was found after development. However, a ^{8/12}10 foot soundings was found and due to the extreme irregularity of the bottom in this area, it is recommended that the 5 foot sounding be retained until a wire drag of the area can be made. *see additional work Report p.6*

✓ No conclusive evidence of the 4 foot sounding was found at its charted location. A ⁸8 foot depth was recorded at this position and a 4 foot sounding was found approximately 130 meters east of the charted location. Due to irregularity of the bottom in the area, it is recommended that this sounding be retained for charting purposes until positively disproven by a wire-drag survey. *see additional work Descriptive Report p.6*

✓ No conclusive evidence of the 2 foot sounding was found at its charted location. The least depth found was a ⁸8 foot depth

approximately ³⁰40 meters ^{NE}south of the charted location. A ~~2-foot~~ sounding was found ~~approximately 115 meters east-northeast of the charted location.~~ It is recommended that this sounding be retained pending a wire-drag survey of this area. *AHH soundings was located at 41°26'49.49" 70°50'33.37"*

P.S.I. 12 consists of a non-dangerous sunken wreck, position approximate, charted at Lat. 41°27.^{54"}20', Long. 70°50.^{49.8"}83' from H.O. Notice to Mariners 49 of 1967. Indications of this wreck were found approximately 215 meters north of the charted position. A thorough investigation yielded a least depth of 9⁶ feet at Lat. 41°28'02.^{50.75 (Pos # 1304)}02" Long. 70°50'51". Weather conditions precluded confirmation by divers, however, in the light of the depth of the wreck, it is recommended that this non-dangerous wreck be charted at this least depth location.

P.S.I. 60 consists of three submerged dolphins charted in the vicinity of Lat. 41°26.^{09.6"}16', Long. 70°52.^{46.8"}78', on the basis of reviewed photogrammetric manuscript T-12498 (1961-62). These dolphins were sighted above the surface during hydrographic operations and they do exist, however, this item was covered in the field edit, which was done by Photo Party 62. The field edit report should be consulted for details of location and condition of these dolphins. -- *No dolphins appear on TP-00775 final review Sept 1984. Shookst Sndg in area 05*

P.S.I. 61 consists of ruins and a dolphin in the vicinity of Lat. 41°27.^{02"}02', Long. 70°48.^{31.8"}53' from H-8903 (1966). This feature is located in Robinson's Hole and is located on the field sheet *one pile located Pos 7074*

of this area. The ^{* pile} dolphin is ^{bare 1ft} awash at mean low water and is approximately 2 meters north of the main pier ruins. It does exist and should be retained as charted. ^{Pier ruins on TP-sheet 00774} * Pos # 7074 @ LAT 41°27'01.00" Long 70°48'32.52"

There are several dashed circled areas on the pre-survey review and these are discussed below.

The shoal in the vicinity of Lat. 41°27'50", Long. 70°51'50", was found as charted and the soundings should be retained. In addition, a least depth of ³⁴ ~~26~~ feet was found at Lat. 41°27'48"³³ Long. 70°51'48"³³ and it is recommended that this depth be charted in the future. ^{Pos # 255+3 LAT 41°27'48.33" Long 70°51'48.38"}

After intensive development, ~~no~~ indications of Lone Rock, the ³ ~~8~~ foot sounding at Lat. 41°27'41"³⁶ Long. 70°51'17"^{16.29} was found. Due to the extreme irregularity of the bottom, it is recommended that this feature be retained ^{charted with 3ft from the current survey.} until its existence can be positively disproven by wire drag. ^{Pos # 5259}

The 18 foot sounding at Lat. 41°27'37"⁰⁷ Long. 70°51'12"^{18??} was not found; however, a ⁷ ~~18~~ foot sounding was found approximately 60 meters southwest and a 19 foot sounding was found about 60 meters northwest of the charted position. It is recommended that this feature be retained. ^{Shoalest s/dgs are from 15 to 17 feet in this area.}

In the area of the 30 foot sounding at Lat. 41°27'27", Long. 70°51'24", the least depth found was ³⁷ ~~35~~ feet. In addition, a ³³ ~~32~~ foot sounding was found approximately 130 meters southeast of the charted position. It is recommended that this feature be retained. ^{33ft at Lat 41°27'23.26 Long. 70°51'20.90"}

The small shoal (least depth ²⁸ 27 feet) in the vicinity of
Lat. 41°27'14", Long. 70°51'09"* and the ^{**}23 foot sounding at
Lat. 41°27'06", Long. 70°51'09", were both found as charted and
should be retained. ^{*28ft found at LAT 41°27'12.67" LONG. 70°51'09.52"}
^{**24ft found at Lat 41°27'09.46" LONG. 70°51'09.46"}

The shoal area in Quick's Hole from Lat. 41°26'48" to
41°27'08" along Long. 70°50'48", was found as charted. Two
least depths were found; a ^{1.63"} 18 foot sounding at Lat. 41°27'02",
Long. 70°50'46", ^{45.21"} and a ⁸ 17 foot sounding at Lat. 41°26'53", ^{44"}
Long. 70°50'46". ^{45.27" Pos # 1090 3rd} It is recommended that these soundings be charted
in the future.

The 9 foot and 12 foot soundings at Lat. 41°27'47",
Long. 70°48'19" and Lat. 41°28'13", Long. 70°48'02", respectively,
should be retained for charting. The 8 foot and 10 foot depths
charted at Lat. 41°27'20", Long. 70°48'40", were found at that
location and should be retained as charted.

The rock awash charted at Lat. 41°27'15", Long. 70°48'42"
was not found. A 3 foot sounding was found approximately
30 meters southwest of the charted position. It is recommended
that this feature be charted as a submerged rock.

The [?]6 foot sounding charted at Lat. 41°27'27", Long.
70°48'32" was not found; however, because of the irregularity
of the bottom, it is recommended that this feature be retained.

The 18 foot sounding at Lat. 41°27'02", 70°48'30" was not
found. It is recommended that this feature be retained pending
a wire-drag survey to positively determine its presence.

The 8 foot sounding charted at Lat. 41°27'05",
Long. 70°48'25" was not found, but it is recommended that this
feature be retained.

The 5 foot sounding charted at Lat. 41°27'02",
Long. 70°48'26" was found. The least depth found at this posi-
tion was 3 feet and it is recommended that this depth be charted
in the future.

L. COMPARISON WITH THE CHART

This survey was compared with the 27th edition of Chart
13230, 1:40,000 scale. The agreement of the survey with the chart
was very good with differences of 2 feet or less throughout the
survey area. The only larger discrepancy was with the 41 foot
sounding at Lat. 41°28'40", Long. 70°49'31"; the shoalest soundings
found in this area were of ⁴⁸~~47~~ feet.

The non-dangerous wreck, position approximate, charted at
Lat. 41°27'^{24"}~~90'~~, Long. 70°50'^{49.8'}~~83'~~, was found at Lat. 41°28'02"92"
Long. 70°50'^{50.75"}~~51"~~ with a least depth found of ⁹⁶~~94~~ feet. It is
recommended that this change be made on all charts.

M. ADEQUACY OF SURVEY

This survey is sufficiently complete and adequate to warrant
its use to supersede all prior surveys for charting, with the
recommendations for charting prior survey items as noted previously
in Sections K and L of this report.

N. AIDS TO NAVIGATION

There were no non-floating aids to navigation on this survey. All floating aids to navigation were located and compared with the latest edition of the Light List (1976) and the latest edition (27) of the Chart N.O. 13230. There were no discrepancies with either publication. All aids to navigation appear adequate; it should be noted that several of the buoys in Robinson's Hole are towed under during maximum stages of tidal currents.

O. STATISTICS

	<u>WH-2932</u>	<u>WH-2931</u>	<u>WH-2933</u>
Total Positions	1597	141	169
Sounding Lines (N.M.)	236.6	23.3	13.9
Tide Stations	5		
Bottom Samples	27		

P. RECOMMENDATIONS

As previously stated in Sections K and L of this report, it is recommended that a wire-drag survey be conducted in this area to obtain positive dispositions on those pre-survey review items whose existence was not definitely verified or disproven.

Q. AUTOMATED DATA PROCESSING

The following programs were used for automated data acquisition and processing on this survey:

FIELD TIDE NOTE

6/13/77

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 Form 362

Tide Station Used (NOAA Form 77-12): Cuttyhunk

Period: August 24 - October 20, 1976

HYDROGRAPHIC SHEET: H-9646

OPR: 503

Locality: Buzzards Bay, Mass.

Plane of reference (mean ~~low~~ low water): 4.2 ft.

Height of Mean High Water above Plane of Reference is
3.4 ft.

Remarks: Zone direct.

Don Spiller
Chief, Tides Branch

Field Tide Note

Field tide reduction of soundings was based on predicted tides from Newport, RI, corrected for the area using the preliminary zoning and correctors supplied by Tides Division, Rockville, and were interpolated by PDP8/E computer using RK 500. Tide correctors were applied by area: correctors for the area west of Long. 70°50'W were high water +0 minutes, low water +4 minutes, height ratio 1.06; for the area east of Long. 70°50'W, high +11 minutes, low +21 minutes, height ratio 1.11. All times of both predicted and recorded tides are GMT.

Tides were recorded at four sites to control hydrography. Type of gage and period of operation were as follows:

<u>Site</u>	<u>Type of Gage</u>	<u>Location</u>	<u>Period</u>
Penikese	Bristol Bubbler S/N 72A-2232	Lat. 41°27'02" Long. 70°55'17"	25 June - 9 Aug. 10 Aug - 7 Oct.
Quick's Hole Middle	Metercraft S/N 7601-7536-15 S/N 7601-7536-17	Lat. 41°26'57" Long. 70°51'57"	8 July - 1 Sept. 1 Sept. - 20 Oct.
Quick's Hole North	Metercraft S/N 7601-7536-30	Lat. 41°26'35" Long. 70°51'20"	15 Muly - 7 Oct.
Kettle Cove	Metercraft S/N 7601-7536-31 S/N 7601-7536-33	Lat. 41°28'47" Long. 70°46'26"	23 Aug. - 1 Sept. 1 Sept. - 20 Oct.
Cuttyhunk	Metercraft	Lat. 41°25'30" Long. 70°55'06"	21 June - 20 Oct.

GEOGRAPHIC NAMES LIST

Geographic Names List

Knox Point

Nashawena Island

North Point

Lone Rock

Felix Ledge

Quicks Hole

Pasque Island

Robinsons Hole

Naushon Point

Westend Pond

Naushon Island

Crescent Beach

Rams Head

Kettle Cove

LIST OF STATIONS

COMPLETE SIGNAL TAPE LISTING
 OPR-503-76 WH10-8-76 (H-9646)

100	6	41	36	50518	070	55	37620	254	0000	000000	DIKE, 1976*
102	6	41	37	22468	070	55	32369	139	0000	000000	ST JAMES CH
104	6	41	35	34214	070	55	42693	254	0000	000000	TP01
106	6	41	36	00017	070	54	49218	254	0000	000000	TP02
108	6	41	35	34340	070	55	41335	254	0000	000000	TP03
110	6	41	35	00952	070	56	51936	254	0000	000000	DART, 1976
112	6	41	35	19590	070	56	28226	139	0000	000000	PADANARAM CH
114	6	41	34	50490	070	51	22422	254	0000	000000	TATER, 1976
116	6	41	38	30252	070	53	12327	139	0000	000000	F. HAVEN WTR TR
118	6	41	34	26398	070	56	23229	139	0000	000000	PAD BKWTR LT
											(1976)
120	6	41	36	13285	070	53	42887	139	0000	000000	BUT FLT LH
122	6	41	34	40951	070	51	46667	139	0000	000000	BLK RK DCN
124	6	41	33	19287	070	55	56695	139	0000	000000	BAREKNEE
126	6	41	32	24234	070	55	58761	139	0000	000000	ROUND HILL LT
											(RADOME)
128	6	41	32	24248	070	55	50472	254	0000	000000	GREEN EGG
130	6	41	31	47229	070	56	56005	254	0000	000000	FIRE 1976
131	6	41	31	46619	070	56	55949	254	0000	000000	FIRE OFFSET
132	6	41	30	52195	070	57	15188	254	0000	000000	HEAD, 1976
134	6	41	35	05538	070	57	22760	254	0000	000000	DART OFFSET
136	6	41	30	43663	070	59	07018	139	0000	000000	BARNEYS JOY RM 4
138	6	41	32	24003	070	55	50503	254	0015	000000	GREEN 1940
139	6	41	32	23871	070	55	50825	254	0015	000000	GREEN OFFSET
140	6	41	35	00950	070	49	27429	139	0014	000000	WEST IS. TOWER B471
142	6	41	32	16723	070	55	19151	139	0000	000000	DUMPLING LT
144	6	41	33	23229	070	56	08299	254	0000	000000	TP 05
146	6	41	31	49835	070	58	23299	254	0000	000000	POTO, 1976
148	6	41	31	42737	070	58	42843	139	0000	000000	LLOYDS 1940
150	6	41	31	52567	070	58	53044	139	0000	000000	PASS, 1936
152	6	41	32	37921	070	59	35181	254	0000	000000	SLOCUM, 1976
154	6	41	32	44013	070	59	36550	254	0000	000000	BEND, 1976
156	6	41	32	48937	071	03	36492	254	0000	000000	POISON, 1976
158	6	41	33	31106	071	02	39323	254	0000	000000	FROG, 1976
160	6	41	33	31107	071	00	39153	254	0000	000000	MAN, 1976
162	6	41	34	05243	071	03	27124	254	0000	000000	BLURP, 1976
164	6	41	27	03516	070	55	26254	139	0000	000000	PENIKESE 1948
166	6	41	24	58578	070	56	54723	139	0000	000000	GOSNOLD MON
168	6	41	26	01443	070	54	32921	254	0000	000000	NOX
170	6	41	25	37442	070	55	17362	243	0000	000000	SAN
172	6	41	25	13628	070	56	23320	139	0000	000000	CUTTYHUNK USE
174	6	41	23	47128	071	02	32152	139	0000	000000	BUZZARDS BAY TWR
176	6	41	24	51800	070	57	32348	139	0000	000000	CUTTYHUNK LT
178	6	41	25	29983	070	55	02823	254	0000	000000	CUTTY HBR N JETTY L CAL
180	6	41	25	38347	070	54	17735	243	0000	000000	PIC, 1976
182	6	41	25	21795	070	54	41474	243	0000	000000	DUN, 1976
184	6	41	25	53458	070	55	41799	243	0000	000000	HUN, 1976

* Stations not used on H-9646

186	6	41	20	54002	070	50	07728	139	0000	000000	GAY HEAD LT HSE, 1975
188	6	41	25	47391	070	54	14595	243	0000	000000	RUB, 1976*
190	6	41	25	29213	070	54	23443	243	0000	000000	ANT, 1976
192	6	41	25	15509	070	56	01014	254	0000	000000	CUTTYHUNK WTR TWR
194	6	41	32	07622	070	58	06729	254	0000	000000	ART, 1976
196	6	41	32	20414	070	58	13719	254	0000	000000	EON, 1976
198	6	41	32	37649	070	58	31004	254	0000	000000	BALL, 1976
200	6	41	32	25269	070	58	05123	254	0000	000000	FEZ, 1976
202	6	41	32	07483	070	58	09634	254	0000	000000	BIZZ, 1976
204	6	41	26	57274	070	50	04579	139	0000	000000	PASQUE, 1844-
206	6	41	26	56504	070	50	30016	254	0000	000000	FUSS, 1976-
208	6	41	26	15130	070	52	46732	139	0000	000000	NECK, 1948-
210	6	41	25	38798	070	55	38549	243	0000	000000	PON, 1976
212	6	41	25	35580	070	55	54321	243	0000	000000	ROD, 1976
214	6	41	27	18870	070	48	27800	243	0000	000000	JIP PHOTO, 1976
216	6	41	27	01920	070	48	22910	243	0000	000000	RAT 76-
218	6	41	27	11150	070	48	44250	243	0000	000000	BEG 76-
220	6	41	27	21980	070	49	03030	243	0000	000000	POR 76-
222	6	41	27	30890	070	48	28060	243	0000	000000	ROB 76-
224	6	41	27	00860	070	48	21200	243	0000	000000	BIN 76-
226	6	41	26	52410	070	48	10320	243	0000	000000	SON 76-
228	6	41	27	29970	070	49	15600	243	0000	000000	TIR 76-
230	6	41	27	18150	070	48	50860	243	0000	000000	COV 76-
232	6	41	27	00000	070	48	32200	243	0000	000000	QUE, 1976-
234	6	41	26	36860	070	48	37190	243	0000	000000	PAS 76
236	6	41	38	29282	070	45	56313	139	0000	000000	ANGEL,
238	6	41	27	47979	070	48	11402	139	0000	000000	WES, 1976-
240	6	41	27	39625	070	48	09150	139	0000	000000	DAVE, 1976-
242	6	41	27	35730	070	48	14140	139	0000	000000	ROCK, 1976-
244	6	41	37	51087	070	41	40931	139	0000	000000	CLEVELAND LDGE
246	6	41	38	56423	070	39	20291	139	0000	000000	NOBSKA PT. LTHS 103

* Stations not used on H-9646

BOTTOM SAMPLES

NOAA FORM 75-44
(11-72)

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

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

VESSEL	2931	PROJ. NO.		YEAR	WEIGHT SAMPLER	APPROX. TRACTION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesion, density, etc.)	OBS. INIT.
		WH-10-8-76	76								
SERIAL NO.	DATE	LATITUDE	LONGITUDE	DEPTH (Fathoms)							
5000	255	41/26/50.5	70/54/21.9						S., Gr., bkn. SH.		
5001	"	41/26/15.1	70/54/13.7					gn	gy. S., Gr. Sh.		
5002	"	41/26/45.4	70/53/45.8						gr. M.		
5003	"	41/27/16.2	70/54/20.2						gr. M.		
5004	"	41/27/12.7	70/53/19.2						gr. M.		
5005	"	41/26/13.2	70/53/19.2						gr. M.		
5006	"	41/26/44.4	70/52/49.7						gr. M.		
5007	"	41/26/50.6	70/51/45.0						fne. S		
5008	"	41/27/15.5	70/52/16.8						gy. M.		
5009	"	41/27/44.6	70/51/43.2						gy. S. & SH. <input checked="" type="checkbox"/> <i>2 q 7</i>		
5010	"	41/27/13.3	70/51/14.6						br. S., SH. <input checked="" type="checkbox"/>		
5011	"	41/26/32.2	70/50/35.6						fne. br. S <input checked="" type="checkbox"/>		
5012	"	41/27/47.4	70/50/45.9						Hard Bottom	No Sample	
5013	"	41/27/45.2	70/49/44.7						gy. M <input checked="" type="checkbox"/>		
5014	"	41/28/15.0	70/50/17.7						gy. M. <input checked="" type="checkbox"/>		
5015	"	41/28/13.1	70/49/23.2						gy. M. <input checked="" type="checkbox"/>		
5016	"	41/27/45.2	70/48/44.7						SH. <input checked="" type="checkbox"/>		

Use more than one line per sample if necessary.

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

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

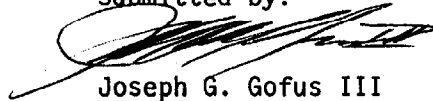
VESSEL	2931	PROJ. NO.		YEAR	WEIGHT OF SAMPLER	APPROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, denting, cutter, size, no. of bottom reflect f.e., slope, plain, deposition, etc.)	OBS. INIT.
		WH-10-8-76	76								
SERIAL NO.	DATE	LATITUDE	LONGITUDE	DEPTH (Fathoms)							
5017	255	41/28/15.0	70/48/11.4						gy. M.		
5018	"	41/28/45.6	70/48/46.3						bk. M.		
5019	"	41/29/10.3	70/49/19.5						bk. M. & SH.		
5020	"	41/29/18.8	70/48/13.0						bk. M.		
5021	"	41/29/17.0	70/47/12.5						bk. M.		
5022	"	41/29/53.2	70/46/39.0						bk. M.		
5023	"	41/29/17.2	70/46/16.7						Seaweed		
5024	"	41/29/43.4	70/45/43.9						bk. M.		
5025	"	41/30/14.2	70/46/11.8						bk. M.		
5026	"	41/28/4.6	70/46/43.4						gy. S.		
5027	"	41/28/44.6	70/47/47.3						bk. M.		

Use more than one line per sample if necessary.

APPROVAL SHEET

Approval Sheet

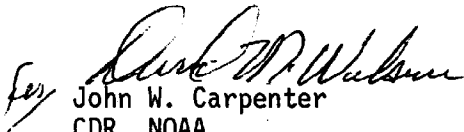
Submitted by:



Joseph G. Gofus III
LTJG, NOAA

Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to ensure completeness of the survey and that all work was done in accordance with the instructions.

Approved/Forwarded



John W. Carpenter
CDR, NOAA
Commanding Officer, NOAA Ship WHITING

DESCRIPTIVE REPORT TO
ACCOMPANY SPECIAL INVESTIGATIONS

OPR-503-WH-77

A. PROJECT INSTRUCTIONS

Section 4.10 of Project Instructions OPR-503-WH-77 dated 15 March 1977 provides for additional work in 1977 to complete surveys not finished in 1976 by the NOAA Ships PIERCE and WHITING. For this purpose the WHITING was provided with a list of additional work to be completed by Processing Division, Atlantic Marine Center (see appendix). The WHITING also investigated a reported rock off Nashwena Island in last year's survey area.

B. AREA SURVEYED

The area surveyed includes several different sections of Buzzards Bay, Massachusetts. Investigations for this report were done in the general areas of Knox Point; Quick's Hole and vicinity; Robinson's Hole and vicinity; north shore of Naushon Island; West Falmouth Harbor and vicinity; approaches to Mattapoissett Harbor; areas east, south, and west of West Island; and approaches to New Bedford Harbor. The areas surveyed contains investigations within the limits of surveys H-9646, H-9647, H-9661, and H-9678. The survey was conducted from June 9, 1977 (Julian Day 160) to November 13, 1977 (Julian Day 317). H-9628

C. SOUNDING VESSELS

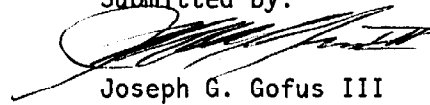
WHITING survey launches 1203 and 1202, and skiff WH4 performed all survey investigations. EDP numbers were 2931, 2932, and 2933 respectively.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Launches 1203 and 1202 were equipped with Raytheon 723D Fathometers, serial numbers 37010 and 37018 respectively. Skiff WH-4 used a Raytheon 719 fathometer, serial number 5497. Transducer draft of launch 1203 was measured at 2.0 feet while 1202 was measured at 1.3 feet (see Section J). These values are entered on corrector tapes. TRA of the WH-4 fathometer (typically around 0.8 feet) was measured each day and adjusted for by the internal draft correction on the fathometer; thus TRA is logged on the corrector tapes as 0.0.

Approval Sheet

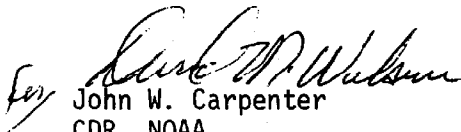
Submitted by:



Joseph G. Gofus III
LTJG, NOAA

Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to ensure completeness of the survey and that all work was done in accordance with the instructions.

Approved/Forwarded



John W. Carpenter
CDR, NOAA
Commanding Officer, NOAA Ship WHITING

Settlement and squat data for the launches is taken from May 1977 trials run in Brunswick, Georgia. Settlement and squat correction is not made for the skiff hydrography since the skiff always ran at a slow speed and was not considered to be different than the transducer depth previously discussed. Velocity corrections were taken from a number of different sources. If a regular survey was being run in adjacent areas at the same time, the velocity corrections from this survey were used in plotting the special investigation. For Julian Days 160, 163, 176, and 178, corrections for the appropriate launch were obtained from WH-10-9(76-77) (H-9668). For Julian Day 225, corrections from WH-10-1-77 (H-9712) were used. For Julian Day 317, velocity corrections from 1976 work of H-9668 were used; the reason for using these corrections is that this work was done in an adjacent area during the same period last year. No adjacent survey was available for Julian Days 303-307. For this reason velocity corrections were based on an average of 5 bar checks. Corrections were graphed and scaled off as shown in the appendix.

Since all work done by WH-4 was very shoal, no velocity corrections were applied to these soundings.

E. HYDROGRAPHIC SHEETS

A total of seven field sheets (one of which contains four separate development plots) were prepared for this report. Sheets were drawn up by WHITING personnel using a Houston Instruments DP-3-5 roll plotter, serial number 5557-6. Due to the varying density of soundings, some are plotted at 1:5000 scale while others are at 1:10000. The sheets are as follows.

<u>NAME</u>	<u>SCALE</u>	<u>SURVEY</u>	<u>JULIAN DAYS</u>	<u>VESSEL</u>	<u>POSITION NUMBERS</u>
Quick's Hole	1:5000	<u>H-9646</u>	160	2931	4000-4089
			163	2931	4090-4104
			176	2932	1-125
Robinson's Hole	1:5000	<u>H-9646</u>	178	2932	127-174
H-9646 Developments	1:5000	<u>H-9646</u>	163	2931	4105-4294
			317	2931	6000-6012
West Falmouth Harbor	1:10000	H-9661	215	2933	6805-6819
			225	2931	1228-1291
Approaches to New Bedford Harbor	1:10000	H-9628	303	2931	1-136
			304	2931	137-228
West Island and Vicinity	1:10000	<u>H-9647</u>	305	2931	229-320
			305	2931	360-366
			306	2931	637-676

SETTLEMENT AND SQUAT TRIALS

7 MAY 1977

*before
2.25
1.3
after
2.0*

Trials were run at State Dock, Brunswick, Georgia using Level No. C&GS-90. The level rod was held over the transducer location. Results are the average of one run toward the observer and one run away at the designated speeds.

	<u>SPEED (RPM)</u>		
	<u>1000</u>	<u>1500</u>	<u>1800 (FULL)</u>
2932 Launch 1202	-0.13feet	-0.25feet	-0.25 feet
2931 Launch 1203	-0.14feet	-0.26feet	-0.27 feet
		- .3	

Corrections for settlement and squat are made on the TC/TI tape. Periods of reduced speed during actual hydrography are noted on the printouts. The annotation "reduced speed" means 1500 RPM, except when otherwise noted. All range/azimuth work was run at reduced speed, except as noted.

*3
1*

(3)

<u>NAME</u>	<u>SCALE</u>	<u>SURVEY</u>	<u>JULIAN DAYS</u>	<u>VESSEL</u>	<u>POSITION NUMBERS</u>
West Island and Vicinity (cont'd)	1:10000	H-9647	307	2931	689-717
			307	2931	719-720
			310	2933	3000-3116 ✓
			316	2933	3117-3204
Nye Ledge	1:10000	H-9647	305	2931	320-359
			306	2931	677-688
			307	2931	718

Velocity corrections, tide corrections, and static draft corrections have been applied to the soundings. Tide corrections are based on predicted tides from Newport, R.I. corrected according to zoning furnished by Oceanographic Division (C 331) their correspondence of January 15, 1976.

F. CONTROL STATIONS

The following were used as electronic and/or visual control stations:

<u>ELECTRONIC CONTROL NUMBER</u>	<u>NAME</u>	<u>SOURCE</u>	<u>USE (see key)</u>
1	Joy Reference Mark 4	Vol 1	1
3	Radome (Round Hill Light)	Vol 1	4,5
<u>5</u>	West Island Tower B41S41	Vol 1	1,2,4
7	But, 1977	PP62	1
9	Bird Island Lighthouse	Vol 1	4
11	Cleveland Ledge Lighthouse	Vol 1	4
13	Wing's Neck Lighthouse	Vol 1	4
19	Nye's Neck Water Tank	Vol 1	4
21	Chass	Vol 1	3
33	Wood's Hole Water Tank	Vol 1	4
43	Fess, 1977	WHITING	2
46	Duck, 1977	WHITING	2
47	Lamb	Vol 1	3
85	Bri, 1976	PP62	2
<u>401</u>	Walcott USE	Vol 1	1
<u>403</u>	Tater, 1976	PP62	1
405	Black Rock Beacon	Vol 1	4
407	Butler Flats Lighthouse	Vol 1	4
409	Fairhaven Water Tank	Vol 1	4
411	New Bedford Radio Tower	PP62	4
<u>413</u>	New Bedford Fort	Vol 1	1
<u>417</u>	TP-01, 1976	PP62	1
421	Cormorant Rock Beacon	Vol 1	3,4

<u>ELECTRONIC CONTROL NUMBER</u>	<u>NAME</u>	<u>SOURCE</u>	<u>USE (see key)</u>	
<u>423</u>	Mat 2 Reference Mark 1	Vol 1	1	1
<u>425</u>	Angel	Vol 1		1
<u>427</u>	Ned Point Lighthouse	Vol 1		4
<u>431</u>	Ram 2, 1976	PP62		2
<u>433</u>	Nashwena Island Monument	Vol 1		5
<u>435</u>	Cuttyhunk Wind Generator, 1977	PP62		5

Station Uses: 1 = Electronic (Range/Range)
 2 = Electronic (Range/Azimuth)
 3 = Range/Azimuth Initial
 4 = Calibration Object
 5 = Visual Signal

Station Fess, 1977 and Duck, 1977 were established by WHITING personnel by three point fix with check angle.

Joy RM 4 and Mat 2 RM 1 are reference marks whose position was computed using AM407 and the distance and direction furnished in the station description. In both cases the original station was not recovered. Bri, 1976 and Ram 2, 1976 were also used by NOAA Ship PIERCE in 1976.

For other sources, "Vol. 1" means the source is the published control for Buzzard's Bay, and "PP62" means the control was established in 1976 or 1977 by Photo Party 62, Robert S. Tibbits, Chief of Party.

G. HYDROGRAPHIC POSITION CONTROL

Range/range, range/azimuth, and visual methods of control were used during these investigations. Julian Days 215, 310 and 316 were range/azimuth, Julian Day 317 visual, and all other work range/range. Visual calibrations were obtained daily during range/range operations. These calibrations were three point fixes with check angles; normally several fixes with inverse distances of 5 meters or less were obtained. In addition, every two weeks the system was calibrated along a baseline of known length according to procedures described in the Del Norte manual. It should be noted that on Julian Days 303-307 frequent station changes took place during the course of operations.

H. SHORELINE

Shoreline on the sheets was taken from shoreline manuscripts:

TP-00768, May 1974; TP-00769, April 1976; TP-00770, May 1976; and TP-00774, December 1975. Shoreline on the 1:5000 Robinson's Hole sheet was taken from a commercial enlargement of the appropriate shoreline manuscript.

1. SPECIAL INVESTIGATION ITEMS

The following is a description of the special investigation items as described in the memo "Additional Work - Buzzard's Bay - PIERCE and WHITING" from Processing Division, Atlantic Marine Center (see appendix). All referenced depths are corrected to MLW.

H-9646 (WH-10-8-76)

1. Robinson's Hole: This area was investigated on J.D. 178 by launch 1202. Only one rock was seen awash in the area (position 127). Developments with 5 meter line spacing were run over the area of the other charted rocks, producing soundings as shoal as 2 feet. No detached positions on submerged rocks were taken due to strong currents and difficulty in judging visually where the shoalest areas were. From discussions with local residents, there seems little doubt that other submerged rocks are present. Recommend retention as charted.

2. Lone Rock ($41^{\circ} 27.9'N$, $70^{\circ} 51.2'W$) This item was developed extensively, a dive was made to determine least depth on Julian Day 166. The feature is a huge solitary rock with a least depth of 4.2 feet corrected to MLW.

3. North Rock ($41^{\circ} 27.1'N$, $70^{\circ} 51.2'W$) Additional lines were run in the vicinity of North Rock.

4. (a) There is no 9 foot sounding either charted or found on H-9646 at $41^{\circ} 29.3'N$ and $70^{\circ} 46.7'W$. However, the 9 foot sounding at $41^{\circ} 29.3'N$ and $70^{\circ} 46.3'W$ was developed at 50 meter spacing. Least depth found was 7 feet, 3rd sounding out of position 4273.

(b) The 18 foot sounding at $41^{\circ} 29.0'N$ and $70^{\circ} 47.15'W$ was developed at 50 meter spacing. Least depth found was 18 feet, 1st sounding out of position 4229.

(c) The charted 12 foot sounding at $41^{\circ} 28.3'N$ and $70^{\circ} 48.02'W$ was developed at 50 meter spacing. A 13 foot sounding was found at this location, 5th out of position 4145. Recommend retention as charted.

5. Quäck's Hole - Wire sweep and dive was judged impractical due to strong currents in this area. However, all presurvey review items were redeveloped. PSI 9 - The two submerged rocks at

(6)

^{52.8"}
41° 26.88'N, 70° 50.66'W were not found with 25 meter line spacing. There are no rocks awash in the immediate area. Recommend deletion.
PSI 10 - The rock awash at 41° 26.78'N, 70° 50.63'W was not found or seen with 25 meter spacing. Recommend deletion.
PSI 11 (a) - The charted 6 foot sounding at 41° 26.6N, 70° 51.2'W was not found with 25 meter spacing. Recommend deletion.

(b) - The charted 5 foot sounding at 41° 26.44'N, 70° 50.38'W was not found; however, a 9 foot rock was found at position 69. Due to such shoal indications, retention is recommended.

(c) - A 5 foot sounding was found 55 meters E of the charted 4 foot sounding at 41° 26.64'N, 70° 50.63'W. Retention recommended.

(d) - A 4 foot sounding was found 40 meters S of a charted 2 foot sounding at 41° 26.69'N, 70° 50.56'W. Retention recommended.

6. The charted rock at 41° 27.8'N, 70° 48.4'W was concretely verified at the 2nd sounding out of position 4178.

H-9647

7. (a) Least depth of Randall Rock, 41° 38.6'N, 70° 46.8'W, was measured by divers as 100 feet. Randall Rock is not a solitary rock but rather a pile of large boulders. Due to poor visibility, it is possible that a shoaler rock exists than the one leadlined. Recommend retention of 7 foot sounding.

(b) Least depth of Snow Rock, 41° 38.4'N, 70° 47.5'W, was measured as 8.3 feet by divers. Due to poor visibility, recommend retention of 5 foot sounding.

(c) Gallatin Rock, 41° 38.0'N, 70° 47.2'W was measured as 10.3 feet by divers, as charted.

(d) Least depth of Nye Ledge, 41° 37.2'N, 70° 46.4'W, was found as 10 feet on 50 meter sounding line spacing, 5th sounding out of position 334. Recommend retention as charted.

8. Cormorant Rock was developed as close as safely possible on Julian Day 305, position 360-366, and on Julian Day 306, position 637-648.

9. (a) Area southeast of West Island was surveyed on Julian Day 316.

(b), (c), and (d) the vicinity of Ram Island, entrance to Brant Island Cove, and the area northeast of Whale Rock were done on Julian

(7)

Day 310.

(d) and (e) Pine Island Pond and the northeast inlet to Brant Island Cove were not surveyed. Pine Island Pond is very shallow and probably bares at low water.

10. Not surveyed.

11. (a) The charted 12 foot sounding at $41^{\circ} 34.2'N$, $70^{\circ} 48.8'W$ was developed at 50 meter spacing. A 13 foot sounding was found 70 meters NW of this position, on the 1st sounding out of position 279. Retention recommended.

(b) A 14 foot sounding (3rd out position 300) was found 80 meters E of a charted 12 foot sounding at $41^{\circ} 34.3'N$, $70^{\circ} 48.9'W$. Retention of charted sounding recommended.

(c) A 7 foot sounding (2nd out position 310) was found 50 meters W of a charted 6 foot sounding, $41^{\circ} 34.5'N$, $70^{\circ} 49.0'W$. Retention of charted sounding recommended.

12. Two developments of shoal indications were done south of West Island. Least depths were 16' (4th out position 257) and 17 feet (2nd out position 244).

13. The charted sunken rock at $41^{\circ} 36.96'N$, $70^{\circ} 48.08'W$, was developed at 20 meter spacing. No evidence of a sunken rock was found either visually or on the fathogram. Due to the irregular nature of the bottom, retention is recommended.

14. The sunken ledge at $41^{\circ} 38.2'N$, $70^{\circ} 47.8'W$, was developed at 50 meter spacing. A 5 foot least depth was obtained at 1st sounding out of position 703. Recommend retention as charted.

15. Hiller Cove work is included with H-9724.

H-9661

16. Hydrography south of the West Falmouth Harbor bridge was done on Julian Day 215.

17. Additional lines southwest of Little Island were done on Julian

Day 225.

18. The charted 30 foot sounding at $41^{\circ} 35.7'N$, $70^{\circ} 39.7'W$, was developed at 50 meter spacing. No indication of this sounding was found; deletion recommended.

19. No "Holiday off Silver Beach" was seen on the PIERCE sheets.

H-9628

21. A line around Little Black Rock as close as possible was run on Julian Day 303.

22. Several developments were run at 50 meter spacing on Negro Ledge on Julian Days 303 and 304. A 17 foot least depth was found for the charted 16 foot sounding at $41^{\circ} 32.9'N$, $70^{\circ} 51.9'W$ on the 3rd sounding out of position 158. A 14 foot sounding on position 164 was found at the charted 14 foot sounding for Hursell Rock, $41^{\circ} 32.8'N$, $70^{\circ} 51.9'W$. A 17 foot least depth was found the 2nd sounding out of position 17 in the location of a charted 19 foot sounding at $41^{\circ} 32.8'N$, $70^{\circ} 52.2'W$. A 20 foot least depth (3rd out of position 28) was found at the charted 21 foot sounding, $41^{\circ} 32.6'N$, $70^{\circ} 52.1'W$.

23. The charted 18 foot rock at $41^{\circ} 35.4'N$, $70^{\circ} 52.9'W$, was developed at 50 meter spacing. Least depth found was 19 feet, 2nd sounding out of position 221. Retention of 18 foot sounding recommended. Ambient depth at N "10" is 25 feet; therefore a 26 foot sounding was not searched for.

24. Least depth on Packet Rock, $41^{\circ} 34.8'N$, $70^{\circ} 52.2'W$, was found as 9 feet (4th out of position 79) on 50 meter spacing. Due to the irregular nature of the bottom, retention of the charted 5 foot sounding is recommended.

25. Mosher Ledge, $41^{\circ} 33.9'N$, $70^{\circ} 51.4'W$, was developed at 50 meter spacing and a least depth of 8 feet obtained on the 1st sounding out of position 115. Due to the irregular nature of the bottom, retention of the 6 foot sounding is recommended.

26. PSI 40 (2), 18 foot rock, $41^{\circ} 32.2'N$, $70^{\circ} 53.62'W$, was developed at 50 meter spacing and a least depth of 25' obtained at the 1st sounding out of position 203. Based on examination of the

fathograms the rock is probably there; retention recommended.

27. PSI 42, 32 foot reported sounding at $41^{\circ} 33.6'N$, $70^{\circ} 51.6'W$, was picked up on the 2nd sounding out of position 124, least depth 34 feet. Recommend retention of 32 foot charted sounding.

28. Henrietta Rock, $41^{\circ} 34.3'N$, $70^{\circ} 52.2'W$, was the subject of considerable development and a dive. Least depth by leadline and fathogram was 11 feet. Feature appears substantially as charted.

29. A detached position was taken 3 meters west of Egg Island. No remnants of the beach were seen at low water; the shoalest object was a rock 0.2 feet above the water line at the time of observation. Recommend charting as rock awash.

30. Great Ledge, $41^{\circ} 32.4'N$, $70^{\circ} 53.8'W$, was developed at 50 meter spacing. A least depth of 5 feet was obtained at position 187 and position 196. No breakers were observed; however, work was run at high tide. Recommend retention of 1 foot sounding.

H-9644

31. PSI 5: Instructions from Processing Division state "Divers and wire sweep required." However, Pre-Survey Review instructions state: "No specific investigation of this reported wreck required." Therefore no special investigation was done. Due to time constraints, no special investigations on H-9644 were done.

J. MISCELLANEOUS ✓

It should be noted that this survey was done essentially in two parts. Sheets 1-4, on the eastern half of the bay, were done early in the season; data is labelled "Special Investigations." Sheets 5-7, on the western side, were done from Julian Days 303-316. This data was labelled "Pierce Pick-ups" at the time, since all work on these sheets is from NOAA Ship PIERCE sheets of 1976.

Due to the fact that these investigations were done concurrently with other surveys, duplicate and omitted position numbers are common. Close attention should be paid to the breakdown shown in Section E.

The investigation on Julian Day 317 is in response to a report of a rock off Knox Point by the caretaker of Nashwena Island, Mr. Alan P. Wilcox. This rock, known locally as "Centerboard Rock", was investigated using visual control and its existence verified

(see sounding volume). A message was sent to Coast Guard District 1 on November 18, 1977 (enclosed) and a Dangers to Navigation Report sent to Marine Surveys and Maps Division (C3) through AMC.

Between Julian Days 225 and 303 the transducer on Launch 1203 was remounted, changing TRA from 1.3 feet to 2.0 feet.

U.S. DEPARTMENT OF COMMERCE
August 9, 1978 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 845-2660, Newport, RI.

Period: June 9-27 and November 13, 1977

HYDROGRAPHIC SHEET: H-9646

OPR: 503


Locality: Buzzards Bay, Massachusetts

Plane of reference (mean ~~lower~~ low water): 1.67 ft.

Height of Mean High Water above Plane of Reference is
3.4 ft.

Remarks: Recommended zoning:

Apply +10 minute time correction and range ratio x0.97.


7062 Chief, Tides Branch

SPECIAL INVESTIGATIONS

SIGNAL TAPE

001	6	41	30	43663	070	59	07018	139	0000	000000	JOY RM 4
003	6	41	32	24234	070	55	50761	139	0000	000000	ROUND HILL LT.
005	6	41	35	00950	070	49	27429	139	0011	000000	WEST ISLAND TWR (H 9661)
007	6	41	40	35480	070	42	59940	139	0000	000000	BUT, 1977 (H 9661) X
009	6	41	40	09099	070	43	04241	139	0000	000000	BIRD IS. LT.
011	6	41	37	51087	070	41	40931	139	0000	000000	CLEV. LDG. LT.
013	6	41	40	48508	070	39	42260	139	0000	000000	WING'S NK LT.
019	6	41	38	26928	070	39	00933	139	0000	000000	NYES NECK WTR TK ✓
021	6	41	36	15171	070	38	57000	139	0000	000000	CHASS (TWR)
033	6	41	31	33071	070	39	43352	139	0000	000000	WOODS HL WTR TK ✓
043	6	41	26	56551	070	50	29892	139	0000	000000	FESS, 1977 X
046	6	41	27	30377	070	48	28302	139	0000	000000	DUCK, 1977 X
047	6	41	27	18084	070	49	30388	139	0000	000000	LAMB
085	6	41	35	53977	070	38	34784	139	0000	000000	BRI, 1976 (H 9661)
401	6	41	35	37389	070	54	05185	139	0000	000000	WALCOTT USE ✓
403	6	41	34	59490	070	51	22422	139	0000	000000	TATER, 1976 X
405	6	41	34	40951	070	51	46667	139	0000	000000	BLACK RK BN
407	6	41	36	13285	070	53	42007	139	0000	000000	BUTLER FLATS LH ✓
409	6	41	38	30252	070	53	12307	139	0000	000000	F'HVN WTR TK ✓
411	6	41	37	20892	070	55	07145	139	0000	000000	N.B. RADIO TWR
413	6	41	37	26509	070	54	10524	139	0000	000000	N.B. FORT
417	6	41	35	34214	070	55	40690	139	0000	000000	TP-01, 1976 X
421	6	41	36	16611	070	47	32295	139	0000	000000	CORMORANT RK BN
423	6	41	37	42955	070	48	07929	139	0000	000000	MAT 2 RM 1 ✓
425	6	41	38	29282	070	45	56313	139	0000	000000	ANGEL
427	6	41	39	02756	070	47	46211	139	0000	000000	NED PT LH
431	6	41	37	06173	070	48	18813	139	0000	000000	RAM 2, 1976 X
433	6	41	25	36395	070	52	36417	139	0000	000000	NASHWENA IS MON
435	6	41	25	08301	070	56	03159	139	0000	000000	CUTTYHUNK WIND GEN



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY

Date: November 29, 1977
To: C3
From: Commanding Officer, NOAA Ship Whiting *Juc*
Subject: Dangers to Navigation Report

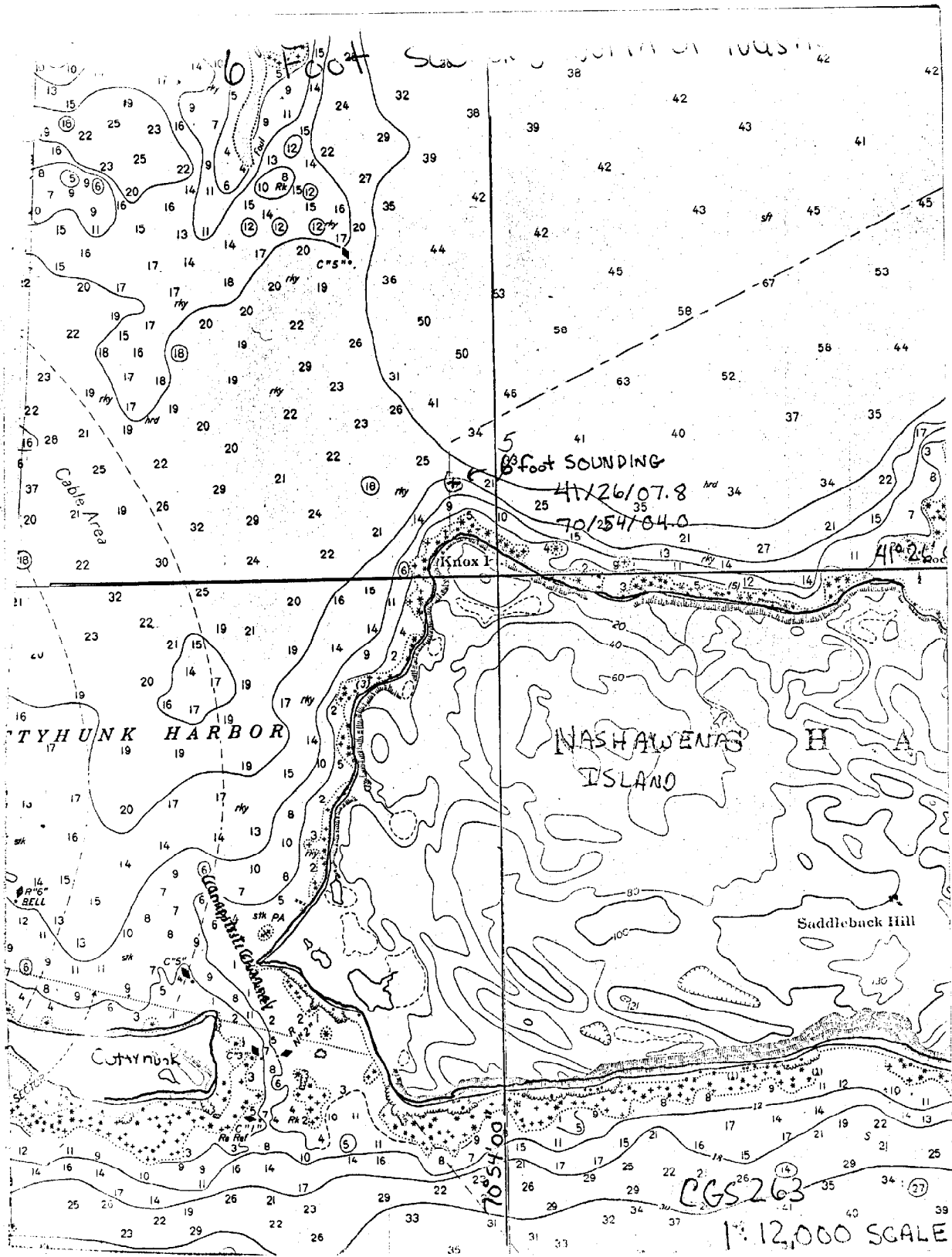
Hydrographic survey H-964⁴⁶5 (Nov. 1977), conducted by the NOAA Ship Whiting, discovered a ~~8~~⁶ foot sounding .1 miles north of the northwest tip of Nashawena Island, Buzzards Bay, Massachusetts.

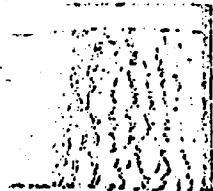
Location of the sounding is:

Latitude 41° 26' 07.⁶⁸8'' N
Longitude 70° 54' 04.²⁷0'' W

The sounding is presently charted on NOS 13230 as 13 feet. The sounding was located by means of visual hydrography. A report was filed to Coast Guard District 1 to incorporate into their Local Notice to Mariners.







1 AM XC
1
02

FI DE AMC

R 181357Z NOV 77
FM NOAA SHIP WHITING/WTEW
TO CCGDONE BOSTON MA
BT

UNCLAS

LOCAL NOTICE TO MARINERS INFORMATION
HYDROGRAPHIC SURVEYS BY THE WHITING HAVE LOCATED THE FOLLOWING DANGERS TO NAVIGATION.

1. AN UNCHARTED ROCK COVERED BY ^{Five} SIX FEET OF WATER AT MEAN LOW WATER LOCATED: NOS CHARTS 13229 AND 13230 AT LATITUDE 41 DEGREES 26 MINUTES 27.8 SECONDS NORTH AND LONGITUDE 70 DEGREES 54 MINUTES 04.0 DEGREES WEST. THIS POSITION IS APPROXIMATELY ONE TENTH OF A NAUTICAL MILE NORTH OF KNOX POINT ON NASHAWENA ISLAND. THIS ROCK IS JUST EAST OF A CHARTED 13 FOOT SOUNDING AND IS KNOWN LOCALLY AS CENTERBOARD ROCK.
2. AN EXTENSIVE AREA OF UNCHARTED SHOALING LIES EAST OF HOG ISLAND CHANNEL LIGHT NUMBER 8 (LIGHTLIST NUMBER 657); NOS CHARTS 13229, 13230 AND 13236. THIS SHOALING CAN BEST BE DESCRIBED AS BEING CONTAINED WITHIN

IN A CIRCLE WITH A 0.4 NAUTICAL MILE RADIUS CENTERED AT LATITUDE 41 DEGREES 42 MINUTES 24 SECONDS NORTH AND LONGITUDE 70 DEGREES 38 MINUTES 37 SECONDS WEST. SOUNDINGS WITHIN THE CIRCLE ARE AS MUCH AS 10 FEET SHOALER THAN CHARTED SOUNDINGS AND REACH A MINIMUM DEPTH OF 0 FEET NEAR THE CENTER OF THE CIRCLE.

BT
C TO 37 SECONDS IN PARA 2

TOO: 18/1414Z NOV 77 DC
DE FI R AJ

APPROVAL SHEET

Submitted by:

David M. Goodrich

David M. Goodrich

Lt.(j.g.), NOAA

Supervision of field and office work on this hydrographic survey was continuous on a day to day basis to ensure completeness of the survey and that all work was done in accordance with the Project Instructions.

Approved/Forwarded:

Dink R Taylor

for John W. Carpenter

Cdr., NOAA

Commanding, NOAA Ship WHITING



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

ATLANTIC MARINE CENTER
Atlantic Hydrographic Section
439 West York Street
Norfolk, VA 23510-1114

September 28, 1989

MEMORANDUM FOR: Users of Hydrographic Survey H-9646
FROM: *pa R. W. Samick* Commander Christopher B. Lawrence, NOAA
Chief, Atlantic Hydrographic Section
SUBJECT: Processing Buzzards Bay Surveys
REFERENCE: Memorandum from Commander Russell C. Arnold,
dated December 27, 1988, Processing Buzzards Bay
Surveys

Office Processing of survey H-9646 at the Atlantic Marine Center was limited only to the verification phase of the survey field data. The hydrographic data are presented on a smooth sheet which includes shoreline transferred from field edited and office reviewed Shoreline Manuscripts. Conflicts between the Shoreline Maps and the hydrographic data were resolved on the smooth sheet. Notes were added in pencil to the Descriptive Report from verification. Internal quality control checks were performed on the verification process.

Evaluation & Analysis (including an Evaluation Report), final Inspection, and Approval were not accomplished for survey H-9646. The data presented should only be used to supplement the presently charted hydrography. This survey is not considered adequate to supersede the charted hydrography without a detailed comparison and evaluation of the prior surveys and charted data. The digital records/files for this survey are considered incomplete.

The Atlantic Hydrographic Section recommends that copies of this survey and the accompanying data not be sold to the public without noting that it is preliminary data. Users of these survey data should exercise caution.

cc:
N/CG24
N/CG243
N/CG2441



VERIFIER'S REPORT

HYDROGRAPHIC SURVEY H-9646

conti:

Part III - JUNCTIONS

10. A standard junction could not be effected with junctional surveys H-9615 (1976) to the north and H-9668 (1976-77) to the east, respectively, because the junctional surveys are archived at National Ocean Service (NOS) headquarters in Rockville, Maryland. Adjustments to the depth curves will have to be made by the chart compiler on the chart during chart compilation.

Part VIII - AIDS TO NAVIGATION

27. It was noted during verification that the hydrographer failed to locate two floating aids to navigation in the survey area. These are "CUTTYHUNK LIGHTED BELL BUOY #7 and the lighted "R/B "buoy at Lone Rock.



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

DEC 27 1988

MEMORANDUM FOR: Lieutenant Commander William Wert, NOAA
Chief, Hydrographic Surveys Branch

FROM: *Russell C. Arnold*
Commander Russell C. Arnold, NOAA
Chief, Hydrographic Surveys Branch

SUBJECT: Processing of Wire Drag/Item, Buzzards Bay
Surveys

Per our December 1, 1988, meeting in Norfolk, I think we are in agreement that the subject surveys, most of which are now 5-15 years old, are well past due for processing. Obviously, your resources are not adequate to conduct full verification of these surveys without compromising other processing goals; a modified approach seems warranted to get these surveys off your inventory.

Buzzards Bay Surveys

Based on a cursory look at two of these surveys, they are not of sufficient quality to supersede the prior surveys in the area; many soundings and features from these prior surveys will need to be carried forward. These surveys do appear adequate, however, to provide supplemental information for charting.

I propose that you expend effort as outlined in your attached December 16, 1988, memo through verification of smooth sheet only. No evaluation and analysis need be done on these surveys. Sufficient priority should be given to this task such that all survey records and recommendations arrive in Rockville by June 30, 1989.

Wire Drag/Item Surveys

Attached is a prioritized list (supersedes 12/9/88 list) of surveys remaining in your inventory. Most of these surveys were conducted in areas where resurvey activity is scheduled in the near future (e.g., Long Island Sound, Rhode Island Sound, Calcasieu, Pascagoula). A cursory look at these surveys may be sufficient. We are primarily looking for information to update AWOIS. Unverified field recommendations may be adequate; we are willing to expand field resurvey effort to resolve items in lieu of waiting for full verification of prior surveys, which has historically resulted in recommendations for considerable resurvey work anyway. I believe that we are currently using better, more conclusive methods to resolve items more efficiently than ever before.



It is understood that our 6-month processing goal for current surveys will have to be temporarily relaxed to accomplish even modified processing of older surveys. However, current requirements for timely preprocessing examinations remain in effect as does the special request to process WHITING side scan sonar records in preparation for HECK's New Jersey Coast project.

Attachments

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H-9646

INSTRUCTIONS - This form serves to identify items of a checklist in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

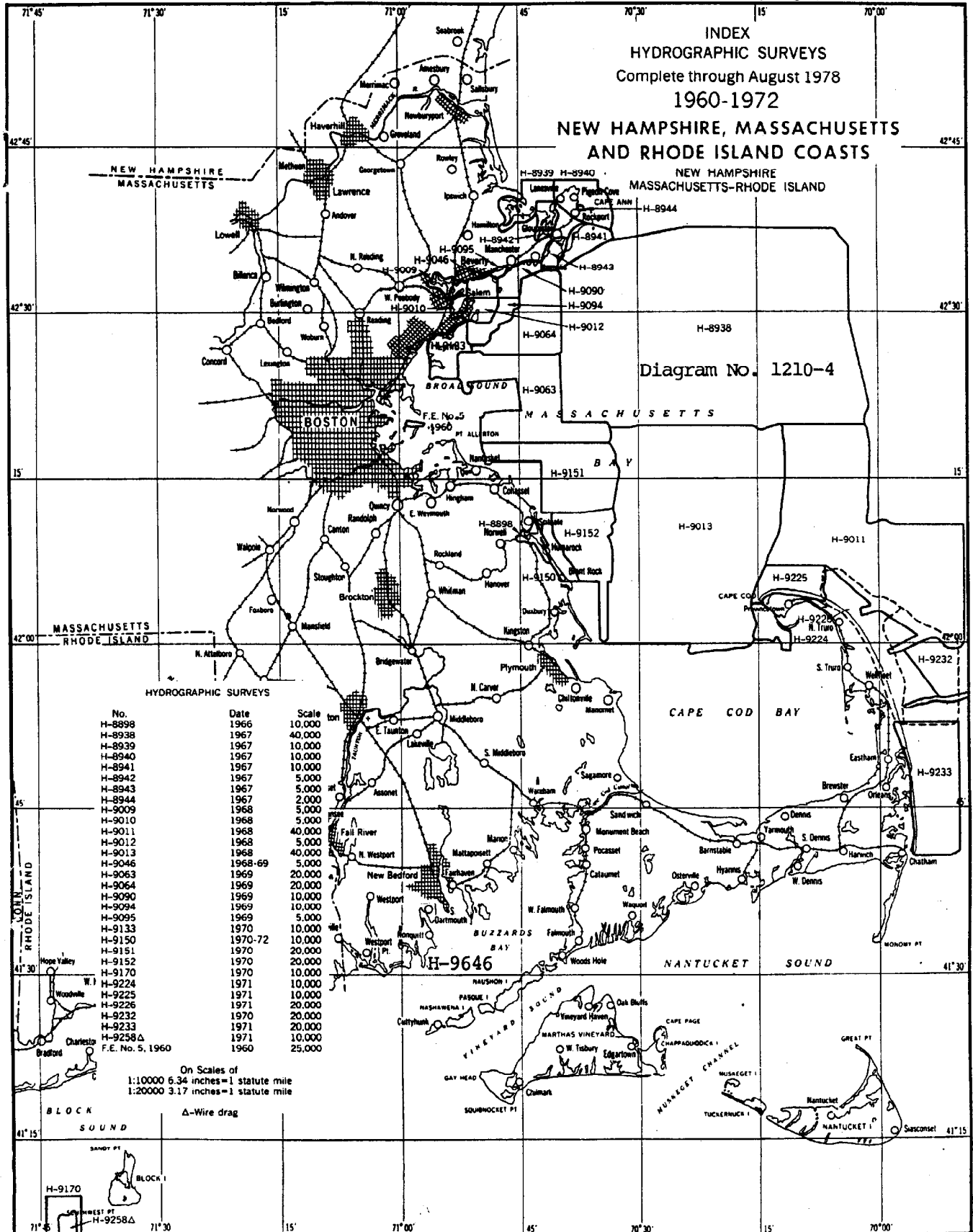
R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p>Note: The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>	X		<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of Butt junctions and areas which are SUPERSEDED.</p>		X
<p>Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>	X		<p>Part IV - VOLUMES 11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None</p>	X	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	X		<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks X (b) line turns X (c) position values of beginning and ending of lines X (d) bar check or velocity correctors X (e) time recording X (f) notes or markings on fathograms X (g) was reduction of soundings accurately done? X (h) was scanning accurate? X (i) were peaks at uneven intervals missed? X (j) were stamps completed? X (k) references to adjacent features X</p>	X	
<p>Part II - SHORELINE AND SIGNALS 4. Source of shoreline signals Remarks Required: -- List all surveys a. Give earliest and latest dates of photographs April 1974 b. Field inspection date none c. Field Edit date Sept 1977 d. Reviewed-XXXXXX Sept/Oct 1984 The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	X				
<p>6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>	X		<p>Part V - MACHINE PLOTTING 13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	X	
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>	X				
<p>Part III - JUNCTIONS Note: Make a cursory comparison preliminary to inking soundings in area of overlap. 8. All junctions of contemporary or overlapping sheets were compared and overlapping curves were made identical. Remarks Required: -- None</p>	X		<p>14. The plotting of all unsatisfactory crossings was verified. Remarks Required: -- None</p>	X	
<p>9. The notation in slanted lettering "JOINS H--- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>	X		<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>	X	

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	X		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	X	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	X		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	X	
Part VI - SOUNDINGS 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	X		Part IX - BOAT SHEET 28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	X	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	X		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	X	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	X		Part X - GENERAL 30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	X	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	X		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	X	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	X		32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	X	
Part VII - CURVES 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.	X		33. The bottom characteristics are adequately shown. Remarks Required: -- None	X	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	X X X		Part XI - NOTES TO THE REVIEWER 34. Unresolved discrepancies and questionable soundings.	X	
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	X		35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	X	
			36. Supplemental information.	X	
Verified by D. V. MASON Checked by L.G. CRAM			Date 09/29/89		

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 62 R



INDEX
HYDROGRAPHIC SURVEYS
Complete through August 1978
1960-1972
NEW HAMPSHIRE, MASSACHUSETTS
AND RHODE ISLAND COASTS

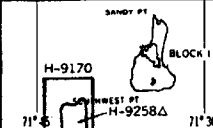
Diagram No. 1210-4

HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8898	1966	10,000
H-8938	1967	40,000
H-8939	1967	10,000
H-8940	1967	10,000
H-8941	1967	10,000
H-8942	1967	5,000
H-8943	1967	5,000
H-8944	1967	2,000
H-9009	1968	5,000
H-9010	1968	5,000
H-9011	1968	40,000
H-9012	1968	5,000
H-9013	1968	40,000
H-9046	1968-69	5,000
H-9063	1969	20,000
H-9064	1969	20,000
H-9090	1969	10,000
H-9094	1969	10,000
H-9095	1969	5,000
H-9133	1970	10,000
H-9150	1970-72	10,000
H-9151	1970	20,000
H-9152	1970	20,000
H-9170	1970	10,000
H-9224	1971	10,000
H-9225	1971	10,000
H-9226	1971	20,000
H-9232	1970	20,000
H-9233	1971	20,000
H-9258Δ	1971	10,000
F.E. No. S. 1960	1960	25,000

On Scales of
1:10000 6.34 inches=1 statute mile
1:20000 3.17 inches=1 statute mile

Δ-Wire drag



MARINE CHART BRANCH
RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9646

EXAMINED FOR NM

GDBU
9MS RW APP-1 3-22-90

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
13229'E	4-18-91	<i>William S. [Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No. 24 PARTIALLY APPLIED
13229'D	4-18-91	<i>William S. [Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No. 24 Partially Applied
13230	7-27-92	DM MCAUNDEN	Full Part Before After Marine Center Approval Signed Via EXAMINED FOR Drawing No. ⁹⁹ CRITICAL CORRECTIONS
13218	12-17-92	<i>[Signature]</i>	Full Part Before After Marine Center Approval Signed Via Drawing No. 69
13230	6/30/93	<i>John Bunker</i>	Full Part Before After Marine Center Approval Signed Via Survey re-examined for Drawing No. 50 critical corrections-no further application NECESSARY
13218	6/30/93	<i>John Bunker</i>	Full Part Before After Marine Center Approval Signed Via Survey re-examined for Drawing No. 67 critical corrections-no further application NECESSARY Thru chart 13230
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.
			Full Part Before After Marine Center Approval Signed Via Drawing No.