

9134

Diag. Cht. No. 1207-2.

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. PE-10-2-70 Office No. H-9134

LOCALITY

State Massachusetts

General locality Coast of Massachusetts Bay

Locality Lynn Harbor - ^{Winthrop Harbor} Logan Airport

1970

CHIEF OF PARTY

CDR. Bruce I. Williams

LIBRARY & ARCHIVES

DATE Mar. 11, 1980

USCOMM-DC 87022-P66

9134

AREA 1

Charts

13270 Apr 8 5-21-80 ← ty

13272 Apr 8 5-12-80 ← ty

13274-B

13275 Apr 8 4-27-80 low

13267

HYDROGRAPHIC TITLE SHEET

H-9134

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.

PE-10-2-70

State Massachusetts

General locality ~~Coast of Massachusetts Bay~~

Locality Lynn Harbor - ~~Logan Airport~~ - Winthrop Harbor

Scale 1:10,000 Date of survey 9 June 70 - 10 September 70

Instructions dated 14 May, 1970 Project No. OPR-473

Vessel Launches and skiffs of NOAA Ship PEIRCE

Chief of party CDR Bruce I. Williams

Surveyed by Lt. Rolland, ENS Richards, ENS Hudes, and CST J D Lewis

Soundings taken by echo sounder, hand lead, pole Echo sounder, leadline, pole

Graphic record scaled by Ship personnel

Graphic record checked by Ship personnel

Protracted by Ship personnel Automated plot by _____

Soundings penciled by Ship personnel

oundings in ~~fathoms~~ feet at MLW ~~MLW~~

REMARKS: Amended Project Instructions dated 14 May, 1970 supersedes all
all previous instructions.

HDEG Cat. 1

Applied to state 3/21/80
[Signature]

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY PE-10-2-70 (h-9134)

1970 FIELD SEASON

USC&GSS PEIRCE

SCALE 1:10,000

BRUCE I. WILLIAMS

CHIEF OF PARTY

A. PROJECT

This survey was accomplished under Project OPR-473, Cape Ann to Cape Cod Massachusetts. Amended instructions dated 14 May, 1970 supersede all previous instructions.

B. AREA SURVEYED

The general locality is Massachusetts Bay. The area surveyed included Lynn Harbor and Winthrop Harbor. The Lynn Harbor portion of the survey is bounded on the east along Longitude $70^{\circ}56' 10''$ W by contemporary survey H-9133. It junctions on the south along Latitude $42^{\circ}24.5'$ by survey H-6863. The Winthrop Harbor section junctions on the south along Latitude $42^{\circ}20.5'$ by survey H-6643 and H-7066.

Hydrography commenced on June 7, 1970 and was completed on September 10, 1970.

Hydrography covered all inshore navigable areas.

C. SOUNDING VESSEL

Hydrography was accomplished using launches and skiffs. Positions taken from launch PE-2 are inked in blue. Skiff positions are inked in green.

D. SOUNDING EQUIPMENT

Raytheon 723 fathometers were employed for sounding. Launch PE-2 used fathometers 259 and 260. Depths were recorded up to 52 feet.

Sounding with the skiff was accomplished using a 16 foot graduated pole. Where possible skiff work was verified by running crosslines with launch and fathometer.

Bar checks were taken 3 times a day if wind and sea conditions permitted. Bar check results were tabulated and a mean fathometer correction at each depth was determined. These values were graphed and the fathometer correction at given depths were picked from the graph in 0.2 foot increments.

SOUNDING EQUIPMENT (Cont)

The initial on the fathogram was held at 1.0 feet for this survey. The actual transducer depth on PE-2 is 1 foot 10 inches. In accordance with the memo from Chief, Engineering Division, dated May 22, 1966, the fathometer initial should be set 1 foot less than the actual transducer draft to compensate for line and component loses. The initial cannot be maintained at 0.8 feet as it should be. Any correction to be applied for actual draft varying from set initial is absorbed by bar checks.

There were no fathometer phase corrections on this survey. All depths were obtained on A scale with the exception of one sounding on day 222.

E. SMOOTH SHEET

The field records for this survey will be transmitted to the Atlantic Marine Center, ATTN CFN31, for smooth processing as per memorandum from Director, AMC, dated 26 March, 1970. Field records were encoded on punched tapes designed for computer use. As per memorandum dated 11 June 1969 from Director, Pacific Marine Center, a single on time position and sounding tape was utilized to record all data gathered by launches. Data collected by skiff was recorded in conventional sounding volumes. Data was then punched on two separate tapes; a position tape providing position information obtained from 3 point visual fixes, and a sounding tape containing depths. Various corrector tapes (tide, velocity, TC/TI) were logged and are to be integrated with the on time data tapes during smooth plotting. Tapes were produced in an ASCII code and single indicator formats were used.

The on time logging system does not permit the use of the special indicator codes 500, 600, and 900. Detached positions were logged as a miss (0000 for depth) and a note made on the original printout as to the feature plotted.

F. CONTROL

Visual control was used for all survey work. Three-point sextant fixes were utilized on triangulation and photogrammetric points. The fixes were plotted by plastic three arm protractor.

Photogrammetric signals were located in the field by Photogrammetric Field Party 62, E. W. Hartford, Chief of Party, and identified on photographs. The signal positions were radially plotted and pricked on the following photogrammetric compilations: (See ...)

Incomplete Manuscript T-12388	compilation complete pending field edit Nov. 1967
Incomplete Manuscript T-12981	
Incomplete Manuscript T-12984	compilation complete pending field edit Nov. 1967
Incomplete Manuscript T-12985	
Incomplete Manuscript T-13242	

F. CONTROL (cont)

Signal positions were then transferred from these T sheets to the boat sheet. Signal WAY #747 was found to be incorrectly plotted on T-13242 and was replotted on July 25 as a hydro signal using sextant cuts to triangulation stations. The fix data for locating the signal is on the abstract for launch PE-2 on day 206.

To accomplish automated smooth processing, positions of the signals used were scaled in degrees, minutes, and meters of latitude and longitude. Scaling was done from the most accurate source document available. T sheets were used for all photo signals.

Triangulation stations used for control as signals were placed on the boat sheet using geographic positions listed as adjusted North American Datum 1927.

G. SHORELINE

Shoreline inked in black was transferred to the boat sheet from blue line manuscripts of the photogrammetric compilations listed in section F. Revised shoreline inked in red, was transferred as noted on the boat sheet.

The low water line was determined by running the launch as close to shore as possible at high tide, by walking the shoreline at low tide, and by skiff work at all stages of tide.

H. CROSSLINES

Crosslines were run at 9% of the total mileage of sounding lines. Crossings were in acceptable agreement.

I. JUNCTIONS

The junctions for this survey are with the following surveys: H-6643, H-7066, H-6863, and H-9133. The soundings and depth curves junctioned well with contemporary survey H-9133. The soundings and depth curves will also agree favorably with H-6863 as soon as velocity corrections are applied. Agreement was not found with H-7066 as the area appears to be used as a spoil area for U. S. Army Corps of Engineers dredge material. The northern part of H-6643 did not show agreement either. The Corps of Engineers have enlarged the dredged anchorage area here. The survey was continued south until an acceptable junction was obtained.

J. COMPARISON WITH PRIOR SURVEYS

The following presurvey review items are discussed in detail:

Item 65. Investigation showed that the marina is now complete. The new shoreline created by the fill is shown on the boatsheet as are the positions of the marinas floats and pilings. The photo manuscript T-12981 should be consulted to alter the charted shoreline.

J. COMPARISON WITH PRIOR SURVEYS (Cont.)

Item 66. Investigation showed the channel is not presently dredged to 22 feet. The area in question ($42^{\circ}27'$, Long. $70^{\circ}57'10''$) was fully developed and the channel in this area had a depth of 18 feet. The main channel into Lynn Harbor was also adequately developed and it showed a controlling depth of 21 feet leading to an 18 foot turning basin. The statement on the chart saying the area is dredged to 22 feet should be removed and H-9134 smooth soundings put in its place. The boat sheet soundings were not corrected for velocity.

Item 67. The survey of the area showed only one rock covered 1 foot at MLW. Also the foul area was determined to be less extensive than the chart now shows. The area was investigated during a -1 foot tide (1 foot below MLW) on day 175 with a skiff. Visual inspection showed only one rock awash at this time. In the opinion of the hydrographer, this investigation has not disproved ~~the existence~~ of the second rock and that it should remain as charted. It is recommended that the foul area be revised to conform with the revised foul area as shown on the boat sheet and on the photo manuscript T-12981. $42^{\circ}25'19.5''N$, $70^{\circ}58'35.45''W$

Item 68. The development of the area of the Pines River near Lat. $42^{\circ}26'22''$, Long. $70^{\circ}58'28''$ verified that the area is shoaling and that the channel has a controlling depth of 3 feet. It is recommended that the old channel soundings be deleted and that the soundings from H-9134 smooth sheet replace them.

Item 69. The western channel of the Saugus River was surveyed and showed a controlling depth of 8 feet to the Foxhall Bridge. From this point the Saugus River shoals to 3 feet at the turning basin 0.75 miles upstream at the Saugus River Yacht Club. It is recommended that the charted depths be deleted and the H-9134 smooth sheet soundings replace them.

Item 70. Black Rock Channel was investigated and the survey showed that it has shoaled to a controlling depth of 5 feet at Lat. $42^{\circ}25'55''$ Long. $70^{\circ}56'40''$. The hydrographer recommends that the words "Rep shoaled to 5 ft" be deleted and that the channel soundings from H-9134 smooth sheet be entered.

Item 71. The remains of the channel marker were found to exist and the location is marked by a rock symbol on the boat sheet. The remains bare 5 feet at MLW. The three rocks to the north were searched for on day 253. Two rocks were found and pole soundings were taken. The first rock was covered 1.5 feet at MLW. The second was covered 4 feet at MLW. The existence of the third rock is not disproved by this investigation.

J. COMPARISON WITH PRIOR SURVEYS (Cont.)

Item 72. This area was fully developed by 50 meter spacing and the extent of the foul area determined. Eleven rocks were located by skiff in the foul area with the highest one bare 2 feet at MLW. The covered 1/2 foot rock located at Lat. $42^{\circ}25'05''$, Long. $70^{\circ}58'17''$, was located and the depth verified. The 3 foot sounding at Lat. $42^{\circ}25'04''$, Long. $70^{\circ}58'00''$, was located and its depth verified. It is recommended that the charted foul area be altered and represented as shown on the boat sheet.

The 2 foot rock named "Old Harry" and marked as a questionable sounding at Lat. $42^{\circ}25'21''$, Long. $70^{\circ}56'30''$, was located and its depth verified. A development was run at 25 meter spacing in north-south and east-west directions. Another rock was located further north with a depth of 3 feet at Lat. $42^{\circ}25'22''$, Long. $70^{\circ}56'28''$. If the scale of the chart allows, it is recommended that these 2 rocks be shown as isolated rocks.

The 17 foot sounding marked questionable at Lat. $42^{\circ}25'04''$, Long. $70^{\circ}56'50''$, was developed with 60 meter spacing and was shown not to be the shoalest depth. A 14 foot least depth was found at Lat. $42^{\circ}25'04''$, Long. $70^{\circ}56'51''$. The 14 foot depth should be charted, the 17 foot sounding removed.

The 19 foot sounding marked questionable at Lat. $42^{\circ}25'00''$, Long. $70^{\circ}56'56''$, was developed with 60 meter spacing and was shown not to be the shoalest depth. A 16 foot least depth was discovered at Lat. $42^{\circ}25'00''$, Long. $70^{\circ}56'57''$. The 16 foot depth should be charted, the 19 foot sounding removed.

Item 87. The wrecks located in the vicinity of Lat. $42^{\circ}22'44''$, Long. $71^{\circ}00'57''$, were searched for by PFP 62. They reported the existence of one of the wrecks. Shoreline manuscript shows three wrecks in this area.

Item 88. The wreck located in the vicinity of Lat. $42^{\circ}22'39''.8$, (note, presurvey review item 88 reads Lat. $70^{\circ}22'39''.8$) Long. $70^{\circ}59'40''$, was not found. The wrecks presence has not been disproven by this survey and more development or wire drag is required to find or disprove the wreck's location.

Item 89. The wreck located in the vicinity of Lat. $42^{\circ}20'58''.6$, Long. $71^{\circ}00'17''.8$, was found in rotting condition. Its highest point bares 3 feet at MLW and is located at Lat. $42^{\circ}20'59''$, Long. $71^{\circ}00'17''$. The wreck is of wooden construction and is approximately 200 feet long. The wreck should remain charted. Pos # 3353 Day 218

Item 90. Winthrop Harbor was observed to have experienced extensive dredging and filling by the Corps of Engineers and the Massachusetts Department of Public Works presumably in connection with modifications to runways at nearby Logan International Airport. In addition the once dredged area near Winthrop Head at Lat. $42^{\circ}22'15''$, Long. $70^{\circ}58'25''$, is presently showing signs of instability as local residents report slumping of the surrounding area and a rising in the dredged area.

J. COMPARISON WITH PRIOR SURVEYS (Cont.)

The 22 foot sounding marked questionable at Lat. $42^{\circ}22'44''$, Long. $70^{\circ}00'33''$; was developed at 20 meter spacing. The least depth observed was 10 feet at Lat. $42^{\circ}22'44''$, Long. $70^{\circ}00'33''$. The 10 foot sounding was observed on two separate occasions. The hydrographer recommends that the 22 foot sounding be deleted and that the 10 foot sounding be charted.

The 27 foot sounding marked questionable at Lat. $42^{\circ}22'46''$, Long. $70^{\circ}59'49''$; was developed at 40 meter spacing in an E-W direction and 50 meter spacing in a N-S direction. The least depth observed was 26 feet at Lat. $42^{\circ}22'47''$, Long. $70^{\circ}59'49''$. The 26 foot sounding is uncorrected for velocity which is approximately 1.2 feet at 25 feet. The hydrographers opinion is that the 27 foot sounding should remain as charted unless it differs from the final smooth sheet value.

The 26 foot sounding marked questionable at Lat. $42^{\circ}22'41''$, Long. $70^{\circ}59'50''$; was investigated at 40 meter spacing. The shoalest depth found was a 25 foot sounding at Lat. $42^{\circ}22'41''$, Long. $70^{\circ}59'49''$. The 25 foot sounding is uncorrected for velocity which is approximately plus 1.2 feet at 25 feet. The 26 foot sounding should remain as charted unless it differs from the final smooth sheet value.

The 16 foot questionable sounding at Lat. $42^{\circ}21'31''$, Long. $70^{\circ}58'55''$, was superseded by the 11 foot questionable sounding obtained on a February 1967 survey (BP-72990) by the Massachusetts Bureau of Public Works.

The 11 foot sounding marked questionable at Lat. $42^{\circ}21'33''$, Long. $70^{\circ}58'54''$, in the February 9, 1968 updating of Presurvey Review OPR-473, was developed at 75 meter spacing. The shoalest depth found was a 9 foot least depth at Lat. $42^{\circ}21'34''$, Long. $70^{\circ}58'55''$. The entire area has changed drastically due to spoil being dumped. The previously charted depths should be deleted and the soundings from H-9134 smooth sheet should be charted in their place.

The 19 foot questionable sounding at Lat. $42^{\circ}23'33''$, Long. $70^{\circ}59'51''$, was investigated at 40 meter spacing. The shoalest depths observed were two 21 foot soundings at Lat. $42^{\circ}23'34''$, Long. $70^{\circ}59'52''$, and at Lat. $42^{\circ}23'32''$, Long. $70^{\circ}59'51''$. After velocity correctors are applied, these soundings should be placed on the chart in place of the 19 foot sounding.

The 9 foot sounding marked questionable at Lat. $42^{\circ}21'26''$, Long. $70^{\circ}58'47''$; was developed at 40 meter spacing in a N-S direction. The 9 foot sounding was not found. The least depth recorded was a 12 foot sounding at Lat. $42^{\circ}21'26''$, Long. $70^{\circ}58'47''$. In the opinion of the hydrographer the 9 foot shoal sounding has been disproven and the 12 foot sounding should be charted in its place.

J. COMPARISON WITH PRIOR SURVEYS (Cont.)

The 5 foot sounding marked questionable at Lat. $42^{\circ}21'05''$, Long. $70^{\circ}58'38''$, was developed at 40 meter spacing with lines running N-S and 70 meter spacing with lines running E-W. The least depth found was a 6 foot sounding at Lat. $42^{\circ}21'05''$, Long. $70^{\circ}58'40''$. The opinion of the hydrographer is that the 5 foot sounding has been disproven and the 6 foot sounding should be charted instead.

The 11 foot questionable sounding at Lat. $42^{\circ}20'44''$, Long. $70^{\circ}57'47''$, was developed at 40 meter spacing with lines running in a N-S direction. An 11 foot least depth was found at Lat. $42^{\circ}20'45''$, Long. $70^{\circ}57'49''$.

The 6 foot questionable sounding at Lat. $42^{\circ}20'37''$, Long. $70^{\circ}58'37''$, was developed by 7 radiating lines which crossed the area in question on variable courses. A least depth of 8 feet was located at Lat. $42^{\circ}20'38''$, Long. $70^{\circ}58'38''$. The area has been dredged by the Corps of Engineers and the hydrographer believes they may have removed the 6 foot sounding and that the development has disproved its existence.

The 2 foot questionable sounding at Lat. $42^{\circ}21'04''$, Long. $70^{\circ}59'32''$, was investigated at 40 meter spacing. A least depth of 2 feet was observed at Lat. $42^{\circ}21'04''$, Long. $70^{\circ}59'31''$.

The 2 foot questionable sounding at Lat. $42^{\circ}21'03''$, Long. $70^{\circ}59'49''$, was developed at 30 meter spacing. Three least depth soundings of 2 feet were located in the area. The locations are as follows:

Lat. $42^{\circ}21'03''$	Long. $70^{\circ}59'50''$
$42^{\circ}21'01''$	$70^{\circ}59'47''$
$42^{\circ}21'05''$	$70^{\circ}59'47''$

The 2 foot sounding now charted is representative of the area and should remain charted.

The 20 foot questionable sounding charted at Lat. $42^{\circ}20'44''$, Long. $71^{\circ}00'05''$, was developed at 50 meter spacing. The least depths observed were a 9 foot sounding at Lat. $42^{\circ}20'44''$, Long. $71^{\circ}00'05''$, and two 8 foot soundings at Lat. $42^{\circ}20'44''$, Long. $71^{\circ}00'08''$, and Lat. $42^{\circ}20'43''$, Long. $71^{\circ}00'07''$. The extreme southwestern area of the boat sheet has been used by the Corps of Engineers as a spoil area and as a result all presently charted depths should be replaced by H-9134 smooth sheet soundings.

The 24 foot questionable sounding charted at Lat. $42^{\circ}20'41''$, Long. $71^{\circ}00'17''$, was developed at 50 meter spacing with lines running in an E-W direction. Many shoaler soundings were located throughout the development, the two shoalest being a 15 foot sounding at Lat. $42^{\circ}20'40''$, Long. $71^{\circ}00'15''$, and a 14 foot sounding at Lat. $42^{\circ}20'42''$, Long. $71^{\circ}00'17''$.

No comparison with Corps of Engineers prior surveys was made after completion of this survey.

K. COMPARISON WITH THE CHART

Comparison with C&GS chart 248, print date March 28, 1970 corrected thru NM 13/70, showed extensive filling has taken place in the Winthrop Harbor area of the boat sheet. The areas that show extensive fill are located as follows;

<u>Latitude</u>	<u>Longitude</u>
42°20'50"	71°00'00"
42°21'10"	70°59'20"
42°21'20"	70°58'20"
42°21'30"	70°58'40"
42°22'00"	70°59'40"
42°22'50"	71°00'10"
42°22'30"	71°00'40"

This comparison as well as information from local inhabitants indicate that slumping is taking place in the area surrounding Winthrop Head. Two obstructions charted at Lat. 42°22'08".5, Long. 70°59'53", and Lat. 42°20'49", Long. 70°57'50", were not found by the hydrographer and deemed no longer to exist. A ten foot sounding was found at Lat. 42°22'44", Long. 71°00'03", near previously charted depths of 38 and 22 feet. The hydrographer feels that the ten foot sounding is there and should be charted although it was not verified by leadline. The obstructions charted at Lat. 42°22'40", Long. 70°59'40", and Lat. 42°22'50", Long. 70°59'40", were not found. The existence of these features has not been disproven by this survey. There are many boats moored in these two areas. The 9 foot charted sounding adjacent to buoy C "3" was not found. However the hydrographer feels its existence has not been disproven and it should remain charted. The obstruction charted at Lat. 42°22'08", Long. 70°59'22" no longer exists and should be removed.

10 5/8
NOT ON SHEET
by surrounding hydro

Comparison with C&GS chart 240, print date Nov. 11, 1968 corrected thru NM 7/69 showed that silting and filling has occurred at Lat. 42°27'.0, Long. 70°57'.3, Lat. 42°26'.4 Long. 70°58'.4, and Lat. 42°27'.4 Long. 70°56'.7. The pilings charted at Lat. 42°25'.0, Long. 70°58'.4 no longer exist.

L. ADEQUACY OF THE SURVEY

This survey is complete and adequate to supersede all prior surveys except in the specific areas mentioned in sections J and K of this report.

M. AIDS TO NAVIGATION

The comparison with Volume 1 Coast Guard Light List and C&GS charts 240 and 248 revealed the following inadequacies:

a-Buoy N "4" (page 90 Light List) Saugus River Approach Channel is off its charted location and requires repositioning. It is presently located at Lat. 42°25'32".5 Long. 70°57'41"; its charted position is Lat. 42°25'34".5 Long. 70°57'38".5.

M. AIDS TO NAVIGATION (cont)

- b-Buoy N "2" (page 93 Light List) in Winthrop Channel is improperly charted. This is a red buoy and should be charted on the right side of the channel as entered from seaward; it is now charted on the left side of the channel at Lat. $42^{\circ}21'48''$ Long. $70^{\circ}58'42''$. The Coast Guard has correctly positioned the buoy on the right side of the channel at Lat. $42^{\circ}21'48''$ Long. $70^{\circ}58'40''$.
- c-Buoy C "3" (page 93 Light List) in Winthrop Channel is incorrectly charted. The charted location Lat. $42^{\circ}21'50''$ Long. $70^{\circ}58'39''$ is now too shoal. The Coast Guard has presently positioned the buoy at Lat. $42^{\circ}21'59''$ Long. $70^{\circ}58'37''$. The charted position should be changed to agree with the present location of the buoy.
- d-Buoy N "4" (page 93 Light List) in Winthrop Channel is charted and positioned improperly. This is a red buoy and should be charted and placed on the right side of the channel as entered from seaward. The buoy is presently charted at Lat. $42^{\circ}22'00''$ Long. $70^{\circ}58'33''$ and positioned at Lat. $42^{\circ}22'00''$ Long. $70^{\circ}58'32''$ which are both on the left side of the channel as entered from seaward. In the opinion of the hydrographer the buoy should be charted and positioned at Lat. $42^{\circ}22'00''$ Long. $70^{\circ}58'26''$.
- e-Buoy C "1" (page 93 Light List) in Chelsea Point Channel is improperly positioned at Lat. $42^{\circ}21'47''$ Long. $70^{\circ}59'15''$ and improperly listed in the Light List at Lat. $42^{\circ}21.8$ Long. $70^{\circ}59.2$. The buoy's charted position at Lat. $42^{\circ}21'48''$ Long. $70^{\circ}59'17.5$ defines the channel better. It is recommended that the Coast Guard relocate the buoy to agree with the charted position and amend the Light List to read Lat. $42^{\circ}21.8$ Long. $70^{\circ}59.3$.
- f-Buoy N "4" (page 93 Light List) charted in Lat. $42^{\circ}21'53''$ Long. $70^{\circ}59'22.5$ in Chelsea Channel is poorly located and should be changed to agree with the Coast Guards present positioning of the buoy at Lat. $42^{\circ}21'54''$ Long. $70^{\circ}59'31''$.
- g-Buoy C "5" (page 93 Light List) charted position Lat. $42^{\circ}21'59''$ Long. $70^{\circ}59'47''$ in Chelsea Channel has become too shoal and should be changed to agree with the Coast Guards recent positioning of the buoy at Lat. $42^{\circ}21'59''$ Long. $70^{\circ}59'44''$.

N. STATISTICS

	Launch PE-2	Skiff #3
Number of Positions	1710	495
Nautical miles of sounding line	238.2	13.7
Area surveyed in Square miles	6	
Bottom samples taken	28	

O. MISCELLANEOUS

A 3 foot depth was observed at Lat. $42^{\circ}21'47''$ Long. $70^{\circ}59'09''$ on day 220 between position numbers 1693 and 1694 and again in the same area on day 222 between position numbers 1743 and 1744. On the basis of these two soundings the area was searched for 3 hours to find the shoalest point on this feature. The search involved dragging a buoyed wire rope 50 meters wide at a depth of 10 feet below the

O. MISCELLANEOUS

surface at low tide as well as a search with the fathometer. Neither method relocated the shoal area. The hydrographer believes the feature does not exist. Local boaters whose boats draw more than 3 feet transit the area continually and none have encountered the shoal.

P. RECOMMENDATIONS

The hydrographer recommends that the following features be further investigated:

- a) The nine foot sounding charted near buoy C "3" was not found. The area requires further development to either prove or disprove the existence of 9 foot sounding.
- b) Presurvey Review Item # 67 should be reinvestigated to determine if one or two rocks exist in this area. The hydrographer feels the area has been sufficiently investigated however to indicate the boundaries of the foul area.
- c) Presurvey Review Item # 71 should be reinvestigated to determine if two or three rocks exist in the area. The present survey has not disproven the existence of the third rock.
- d) Presurvey Review Item 88 should be reinvestigated, possibly using wire drag methods, to determine if the wreck charted there still exists. Its existence was not disproven by this survey.

Q. REFERENCES TO REPORTS

Report on Landmarks for Charts and Fixed Aids to Navigation, NOAA Ship PEIRCE, 1970 Field Season.

Coast Pilot Report, NOAA Ship PEIRCE, 1970 Field Season.

Echo Sounder Report, NOAA Ship PEIRCE, 1970 Field Season.

Season's Report, NOAA Ship PEIRCE, 1970 Field Season.

Letter to 1st Coast Guard District listing buoys mislocated
Respectfully submitted,

Thomas W. Richards

Thomas W. Richards
ENS NOAA

Approved and Forwarded

Bruce I. Williams

Bruce I. Williams

CDR NOAA

APPROVAL SHEET

FIELD NUMBER PE 10-2-70

Field work and data processing on this survey was under my immediate daily supervision. The Boat Sheet and all records have been reviewed and approved by me. It is believed this survey is complete and adequate to supersede prior surveys except as specified in Sections J and K.



Bruce I. Williams
CDR NOAA
Chief of Party

3/11/75

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

Tide Station Used (NOAA Form 77-12): Boston, Massachusetts

Period: June 7 - September 10, 1970

HYDROGRAPHIC SHEET: H-9134

OPR: 473

Locality: Boston Harbor and Broad Sound

Plane of reference (mean ~~lower~~ low water): 3.6 ft.

Height of Mean High Water above Plane of Reference is

9.0 ft. (Broad Sound)

9.4 ft. (Boston Harbor)

Remarks: Recommended zoning:

Range Ratio:

Apply x 0.95 in Broad Sound.

Apply x 0.99^{.97 used} in Boston Harbor (west of a line
from the southern point of Deer
Island to northern point of
Long Island.

James R. Hubbard
for Chief, Tides Branch

ABSTRACT OF VELOCITY CORRECTIONS

Velocity Table #1

This table applies to all work done in Lynn Harbor with fathometer #260 on launch PE-2.

This table is used for the following dates:

0740 June 9 thru 0811 23 June (day 160 thru 174)
0812 June 23 (day 174) thru July 21 (day 202)
1153 Sept. 10 (day 253) thru 1159 Sept. 10 (day 253)
1216 Sept. 10 (day 253) thru end of day

Velocity Table #2

This table applies to all work done in Lynn Harbor and Winthrop Harbor with fathometer #259 on launch PE-2.

This table is used for the following dates:

0800 July 22 (day 203) thru 1450 July 24 (day 205)

Velocity Table #3

This table applies to all work done in Winthrop Harbor with fathometer #260 on launch PE-2 prior to rephasing of fathometer #260.

This table is used for the following dates:

0902 July 25 (day 206) thru 1157 July 26 (day 207)

Velocity Table #4

This table applies to work done in Winthrop Harbor with fathometer #260 on launch PE-2 after rephasing. This table applies from day 208 thru day 222.

Velocity Table #5

This table applies to all skiff work accomplished on H-9134 and to all leadline soundings taken from launch PE-2.

This table is used for the following dates:

June 7 (day 158) thru August 11 (day 223)
for skiff #3 work
0811 23 June (day 174) thru 0812 23 June for launch
1159 Sept 10 (day 253) thru 1216 Sept 10 for launch

ABSTRACT OF VELOCITY CORRECTIONS

VELOCITY TABLE 1

Depth (to)	Corr.
1.3	0.0
3.8	0.2
10.0	0.4
20.0	0.6
30.0	0.8
40.0	1.0
49.8	1.2
59.4	1.4
9999.9	1.6

VELOCITY TABLE 2

Depth (to)	Corr.
1.8	0.0
5.2	0.2
8.4	0.4
12.0	0.6
20.2	0.8
37.5	1.0
54.2	1.2
9999.9	1.4

VELOCITY TABLE 3

Depth (to)	Corr.
1.3	0.0
3.7	0.2
6.2	0.4
8.8	0.6
15.0	0.8
25.0	1.0
30.0	1.2
32.5	1.4
35.6	1.6
43.4	1.8
99999.9	2.0

VELOCITY TABLE 4

Depth (to)	Corr.
1.0	0.0
3.3	0.2
6.1	0.4
9.9	0.6
15.5	0.8
22.8	1.0
30.0	1.2
37.3	1.4
44.5	1.6
51.7	1.8
9999.9	2.0

VELOCITY TABLE 5

Depth (to)	Corr.
9999.9	0.0

ABSTRACT OF TRA CORRECTIONS

The TRA corrector is a combination of several factors and applies only to depths taken by electronic methods. All skiff work has a zero TRA value and is logged on the TC/TI tape as such. The TRA correction is applied to the soundings on the survey through the use of the TC/TI tape.

TRA is defined as follows:

TRA	Transducer Draft	Fathometer speed correctio
	Instrumental Error	Phase Correction
	Settlement and Squat	Initial Correction

Transducer Draft

No transducer draft correction was applied to this survey as any error is compensated for by the use of bar checks in the determination of the velocity correction tables.

Instrumental Error

Velocity corrections for both fathometers were obtained by bar checks. Any instrumental error is corrected by these checks.

Settlement and Squat

Previous determinations of this factor indicate that a -0.2 foot correction should be applied to all soundings taken at launch speeds of 1500 and 1800 rpm's. Therefore -0.2 foot was used in the TRA for all soundings on this survey. Refer to Report on Corrections to Echo Soundings, OPR-473, 1970 Field Season.

Fathometer Speed Correction

No data was obtained for this correction. Any constant error was absorbed by using bar checks to obtain velocity corrections.

Phase Correction

No phase comparisons were made during this survey. All depths were taken on A scale with the exception of one sounding on day 222. No phase correction was applied.

INITIAL CORRECTORS SHEET FE-10-2-70 (H-9134)

The following corrections are applied to the indicated days of work for launch FE-2.

<u>DAY</u>	<u>TIME FROM</u>	<u>CORR</u>	<u>DAY</u>	<u>TIME FROM</u>	<u>CORR</u>
160	074000	0.0	205	082800	0.2
	094700	-0.1		083945	0.0
	095345	0.0	206	090230	-0.2
	123230	-0.1		092530	0.0
	124000	-0.2	207	000000	0.0
	133330	-0.1	208	000000	0.0
	134830	-0.2	209	083700	0.2
	135730	-0.1		102640	0.0
	140700	0.0	210	082830	0.0
161	075100	-0.1		134515	-0.2
	075345	0.0		134645	0.0
	083330	-0.1	216	000000	0.0
	094615	0.0	217	000000	0.0
	102500	-0.1	218	000000	0.0
	114705	0.0	219	000000	0.0
	115315	-0.1	220	000000	0.0
	120800	0.0	222	000000	0.0
168	000000	0.0	253	000000	0.0
169	000000	0.0			
170	000000	0.0			
171	000000	0.0			
172	000000	0.0			
173	000000	0.0			
174	000000	0.0			
176	000000	0.0			
202	000000	0.0			
203	000000	0.0			
204	080000	0.0			
	083145	0.2			
	083230	0.0			
	083315	-0.2			
	083630	0.0			
	102700	0.2			
	103215	0.0			
	104500	0.2			
	104610	0.0			
	125708	-0.2			
	125745	0.0			
	140245	0.2			
	140830	0.0			

TC/TI TAPE PRINTOUT
PE 10-2-70, OPR 473
LAUNCH PE-2

H- 9134

000000	0	0000	0000	160	000000	000000
074000	0	1002	0001	160	000000	000000
094700	0	1003				
095345	0	1002				
103230	0	1003				
107000	0	1004				
103330	0	1003				
134830	0	1004				
135730	0	1003				
140700	0	1002				
000000	0	0000	0000	161	000000	000000
075100	0	1003	0001	161	000000	000000
075345	0	1002				
083330	0	1003				
094615	0	1002				
102500	0	1003				
114745	0	1002				
115315	0	1003				
120800	0	1002				
000000	0	0000	0001	168	000000	000000
052600	0	1002	0001	168	000000	000000
000000	0	1002	0001	169	000000	000000
000000	0	1002	0001	170	000000	000000
000000	0	1002	0001	171	000000	000000
000000	0	1002	0001	172	000000	000000
000000	0	1002	0001	173	000000	000000
000000	0	1002	0001	174	000000	000000
001100	0	0000	0005	174	000000	000000
051200	0	1002	0001	174	000000	000000
000000	0	1002	0001	176	000000	000000
000000	0	1002	0001	202	000000	000000
000000	0	1002	0002	203	000000	000000
000000	0	1002	0002	204	000000	000000
083145	0	0000				
083230	0	1002				
083315	0	1004				
083630	0	1002				
102700	0	0000				
103215	0	1002				
104500	0	0000				
104610	0	1002				
125708	0	1004				
125745	0	1002				
140245	0	0000				
140830	0	1002				
000000	0	1002	0002	205	000000	000000
082800	0	0000				
083945	0	1002				
000000	0	1002	0003	206	000000	000000
090230	0	1004				
092530	0	1002				
000000	0	1002	0003	207	000000	000000
000000	0	1002	0004	208	000000	000000
000000	0	1002	0004	209	000000	000000
083700	0	0000				
102640	0	1002				
000000	0	1002	0004	210	000000	000000

TC/TI TAPE PRINTOUT
PE 10-2-70, OPR 473
Skiff #3-2

H- 9134

000000	0	0000	0005	158	000000	000000
000000	0	0000	0005	159	000000	000000
000000	0	0000	0005	175	000000	000000
000000	0	0000	0005	190	000000	000000
000000	0	0000	0005	191	000000	000000
000000	0	0000	0005	192	000000	000000
000000	0	0000	0005	196	000000	000000
000000	0	0000	0005	205	000000	000000
000000	0	0000	0005	218	000000	000000
000000	0	0000	0005	219	000000	000000
000000	0	0000	0005	220	000000	000000
000000	0	0000	0005	221	000000	000000
000000	0	0000	0005	223	000000	000000

ABSTRACT OF DAILY CONSECUTIVE POSITION NUMBERS BY VESSEL

<u>DATE</u>	<u>DAY #</u>	<u>POSITIONS</u>	<u>REMARKS</u>
June 9 1970	160	0001 0007	Launch PE-2
9	160	0011 0073	
9	160	0078 0122	
9	160	0127 0133	
10	161	0134 0213	
17	168	0214 0241	
17	168	0246 0265	
18	169	0266 0270	
18	169	0273 0286	
18	169	0290 0344	
19	170	0345 0435	
19	170	0438 0442	
19	170	0445 0451	
20	171	0452 0553	
21	172	0554 0612	
21	172	0614 0636	
22	173	0637 0692	
23	174	0693 0706	
23	174	0710 0715	
23	174	0717 0795	
25	176	0796 0855	
July 21	202	0856 0888	
22	203	0889 0963	
23	204	0964 1095	
24	205	1096 1127	
24	205	1133 1139	
24	205	1144 1172	
25	206	1173 1235	
26	207	1236 1276	
26	207	1279 1285	
27	208	1286 1336	
27	208	1339 1352	
28	209	1353 1414	
29	210	1415 1426	
29	210	1428 1465	
August 4	216	1466 1489	
5	217	1490 1527	
5	217	1531 1578	
6	218	1579 1622	
7	219	1623 1662	
8	220	1663 1700	
10	222	1701 1744	
Sept. 10	253	1745 1752	

ABSTRACT OF CONSECUTIVE POSITION NUMBERS BY VESSEL

<u>DATE</u>	<u>DAY #</u>	<u>POSITIONS</u>		<u>REMARKS</u>
June	7	158	3001 3027	Skiff #3, missing 3013, 3016
	8	159	3028 3030	
	8	159	3032 3048	missing 3039
	24	175	3049 3100	
July	9	190	3101 3167	
	10	191	3168 3180	
	10	191	3187 3245	
	11	192	3246 3300	missing 3279
	15	196	3301 3317	
	15	196	3319 3320	
	24	205	3321 3324	
August	6	218	3325 3356	
	7	219	3357 3391	
	8	220	3392 3427	missing 3405, 3426 duplicate 3392's
	9	221	3428 3449	
	9	221	3451 3473	
	9	221	3475 3477	
	11	223	3478 3496	

- 23 -

List of Stations on H-9134 (PE-10-2-70)

Name used in Hydrographic Survey	EDP#	Origin of Station
Abe	466	Winthrop Methodist Church Spire 1934
Ace	361	T-12388
Aha	634	Little Nahant Cupola 1919
Air	111	T-13242
Ali	629	Lynn First Universalist Church Tower 1934
Amp	355	T-12984
Amy	017	Army East Stack 1934
And	633	Sandy Point Light 1954
Ant	311	Deer Island Metropolitan Sewage Plant Stack 1902
Arm	442	T-12981
Art	343	T-12984
Bal	389	T-13242 (photo-extention)
Bag	444	T-12981
Bed	347	T-12984
Big	313	Deer Island Black Cupola 1908
Box	404	T-12984
Bum	637	B ² S ² 1943
But	363	T-12388
Cab	365	T-12388
Car	315	Winthrop Light 1934
Cod	406	T-12984
Con	226	T-12981
Cup	635	Nahant Coast Guard Cupola 1919
Cut	446	T-12981
Dee	301	Deer Island Lighthouse 1902
Dim	367	T-12388
Dip	448	T-12981
Doc	359	T-12388
Dog	408	T-12984
Dud	317	T-13242
Dom	302	T-12984
Ebb	303	T-13242
Egg	450	T-12981
End	232	T-12981
Eva	410	T-12984
Fag	218	T-12981
Fen	216	T-12981
Fix	305	D P Taylor (USE) 1943
Fly	029	Castle Island Monument 1934
Fog	452	T-12981
For	236	Black Marsh Channel Light 1954
Fox	412	T-12981
Fry	375	T-12981
Gab	206	T-12985
Gag	454	T-12981
Gas	631	Lynn Gas Company Chimney 1934
Gay	201	T-12985
Gin	414	T-12981

Name used in Hydrographic Survey	EDP#	Origin of Station
Gus	307	Great Faun Stone Beacon 1860
Hex	456	T-12984
Hub	309	T-13242
Hut	416	T-12981
Ice	254	Revere Police Tower 1934
Ide	007	T-13242
Ion	248	Lynn Radio Station WLYN Radio Mast 1958
Ire	627	Lynn Catholic Church Spire 1934
Ite	240	White Rocks Light 1954
Ivy	418	T-12981
Jaw	420	T-12981
Jay	323	T-13242
Jet	707	T-13242
Jog	319	T-13242
Jug	458	T-12984
Kid	422	T-12981
Lad	460	T-12984
Lit	345	T-12984
Log	424	T-12981
Low	349	T-12984
Lug	321	T-13242
Max	426	T-12981
Met	228	T-12981
Nip	325	T-13242
Nix	760	T-12985
Nor	210	T-12981
Nut	428	T-12981
Oak	430	T-12981
Off	351	T-12984
Old	327	T-13242
Pad	329	T-13242
Far	204	T-12984
Pig	432	T-12981
Pil	234	T-12981
Pin	250	Point of Pines 1934
Pip	260	Winthrop Head Standpipe 1915
Pol	202	T-12985
Pot	212	T-12981
Rag	220	T-12981
Ram	230	T-12981
Red	222	T-12981
Rim	331	T-13242
Rot	757	Logan Airport Radar Antenna 1962
Rum	434	T-12981
Run	727	T-13242
Sam	371	T-12988
Sax	353	T-12984
Sow	208	T-12984
Sox	333	T-13242
Tac	252	Revere Beach Stack 1949
Tal	379	Walworth Stack No. 3 1934
Tan	335	T-13242
Tap	377	Lynn G B West Stack 1916
Tax	373	T-12388

Name used in Hydrographic Survey	EDP#	Origin of Station
Tex	224	T-12981
Too	242	Black Rocks Light 1954
Tow	246	Lynn Radio Station Tower 1958
Try	770	T-12985
Tub	438	T-12981
Urn	238	Upper Turn Light 1954
Vat	628	Lynn Observatory 1916
Vim	337	T-13242
Wal	214	T-12981
War	339	T-12981
Was	357	T-12388
Way	747	Sextant cuts 25 July 70
Wax	440	T-12981
Wes	341	T-12984
Why	200	T-12984
Win	464	Wintrop Boston Radio Center Tower 1943
Zoo	244	T-12985

Signal List Tape
 PE-10-2-70 (H-9134)
 OPR-473

246	42	26	0243	070	59	0627	TOP
248	42	27	0320	070	58	1147	TON
250	42	26	0847	070	57	0937	TIN
254	42	24	1555	070	59	0550	TOE
252	42	24	1611	070	59	0637	TOD
260	42	22	0122	070	58	0127	TIP
404	42	24	0674	070	59	0686	TOX
406	42	24	1090	070	59	0672	TOE
408	42	25	0403	070	59	0272	TOE
410	42	25	1547	070	58	0924	TOA
412	42	26	1276	070	57	1095	FOX
414	42	27	0055	070	57	0366	SIN
416	42	27	0422	070	56	1312	PUT
418	42	26	1334	070	57	1307	IVY
420	42	26	0997	070	58	0036	JAW
422	42	26	1341	070	58	0033	KID
424	42	26	1140	070	58	0100	LOG
426	42	26	0930	070	58	0203	MAX
428	42	26	0410	070	58	0509	NUT
430	42	26	1603	070	58	0470	OAK
432	42	27	0112	070	58	1025	PIG
434	42	26	1835	070	58	1119	ROM
438	42	27	0130	070	59	0109	TUB
440	42	27	0360	070	58	0584	WAX
442	42	27	0959	070	58	0650	AR4
444	42	27	0734	070	59	0055	EAG
446	42	27	0560	070	59	0423	CUT
448	42	27	0618	070	59	0219	DIP
450	42	27	1107	070	59	0195	EGG
452	42	27	1086	070	59	0454	FOG
454	42	26	0902	070	57	1117	GAG
770	42	24	1466	070	55	0591	TRY
760	42	25	0200	070	56	0137	NIX
201	42	25	0565	070	56	0324	GAY
202	42	25	0854	070	56	0312	HOL
204	42	25	0978	070	56	0405	PAB
206	42	25	1271	070	56	0201	GAB
208	42	26	0346	070	56	0408	SOE
210	42	26	0946	070	56	0598	NOR
212	42	26	1678	070	56	0472	POT
214	42	27	0207	070	56	0404	WAL
216	42	27	0589	070	56	0533	FFN
218	42	27	0807	070	56	0586	EAG
220	42	27	0860	070	56	0742	RAG
222	42	27	1245	070	56	0828	RED
224	42	27	0777	070	56	1017	TEX
226	42	27	0905	070	56	1114	CON
228	42	27	1035	070	56	1033	MET
230	42	27	1010	070	56	0928	BAM
232	42	27	0865	070	56	0921	END
234	42	27	0848	070	56	0828	PIL
235	42	25	1557	070	56	0089	COE
234	42	26	0124	070	56	0116	ARA
638	42	26	1055	070	56	0735	AND
236	42	26	1661	070	56	0765	POE
238	42	27	0322	070	56	0753	URN
239	42	27	1422	070	56	0426	ALI

OK on tape

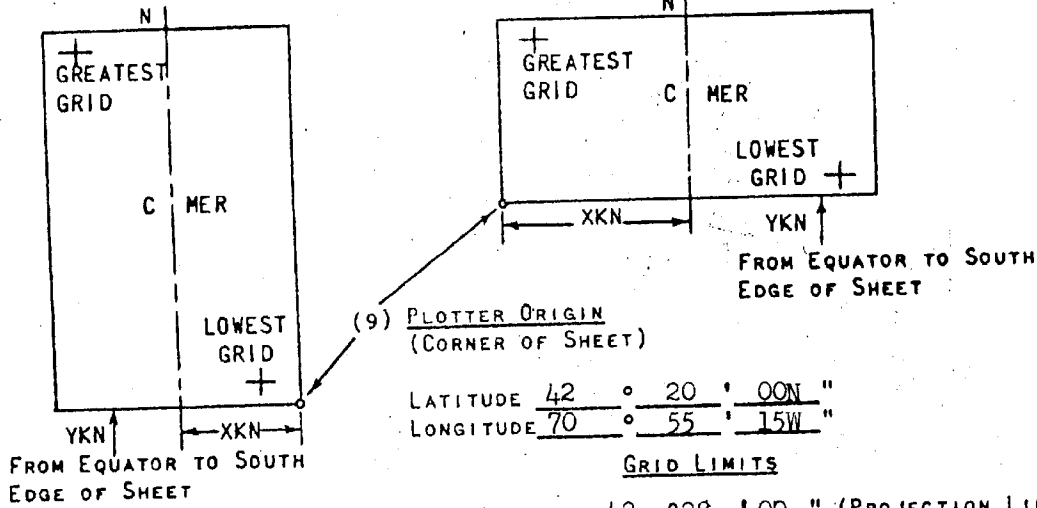
627	42 25 0087	070 56 0666	IRE
628	42 28 0139	070 56 1119	VAT
631	42 27 0441	070 57 0153	GAS
8 40	42 25 1016	070 57 0378	ITE
242	42 25 1825	070 56 1247	TOO
244	42 25 0397	070 55 1757	ZOO
200	42 25 0433	070 56 0254	WHY
456	42 26 0191	070 58 0671	HEX
458	42 25 1506	070 58 1158	JUG
460	42 25 1571	070 59 0114	LAD
464	42 25 0720	070 59 0172	WIN
466	42 22 1106	070 59 0036	ABE
301	42 20 0713	070 57 0413	BBE
303	42 20 1142	070 57 0543	BBE
305	42 20 1263	070 57 0344	FIX
307	42 21 0525	070 56 0755	GUS
309	42 20 1674	070 57 0978	HUB
311	42 20 1760	070 57 0792	ANT
313	42 21 0410	070 57 0890	BIG
3 15	42 21 1290	070 58 1113	CAR
317	42 21 1252	070 58 0531	DUD
319	42 21 1428	070 58 0366	JOG
321	42 22 0185	070 58 0492	LUG
323	42 22 0460	070 58 0378	JAY
325	42 22 0563	070 58 0390	NIP
327	42 22 0534	070 58 0462	OLD
329	42 22 0572	070 58 0622	PAD
331	42 22 0130	070 59 0335	RIM
333	42 22 0298	070 59 0634	SOX
3 35	42 22 0426	070 59 0911	TAN
337	42 22 0795	070 59 1109	VIM
3 39	42 21 1307	070 59 0431	WAR
707	42 21 0544	070 59 1065	JET
727	42 21 0277	070 59 0509	RUN
747	42 20 1665	070 59 0025	WAY
629	42 20 0625	071 00 0891	FLY
017	42 20 1245	071 01 0829	AMY
111	42 22 0859	071 00 0206	AIR
757	42 21 1256	071 00 0851	ROT
341	42 23 0150	070 59 0130	WES
343	42 23 0060	070 59 0800	ART
345	42 22 1769	070 59 0913	LIT
349	42 22 1565	070 59 0778	LOW
351	42 22 1768	070 59 1205	OFF
353	42 22 1104	070 59 0794	SAX
355	42 22 1037	070 59 1035	AMP
357	42 22 1727	071 00 0008	WAS
359	42 23 0029	071 00 0432	DOC
361	42 23 0044	071 00 0963	ACE
363	42 22 1571	071 00 1017	BUT
365	42 22 1551	071 00 1298	CAR
367	42 22 0739	071 00 0907	LIM
347	42 22 1681	070 59 0770	BED
371	42 22 0751	071 01 0494	SAM
373	42 23 0701	071 00 0502	TAX
375	42 26 1516	070 58 1050	FRY
377	42 26 1773	070 58 0585	TAP
379	42 20 0656	071 01 1374	TAL
107	42 22 0584	070 58 1033	IDE
389	42 21 1710	071 01 0138	BAL
6 37	42 25 0346	070 55 1322	BUM
302	42 23 0643	070 58 0245	EOM

FORM # 1

FIG. 15

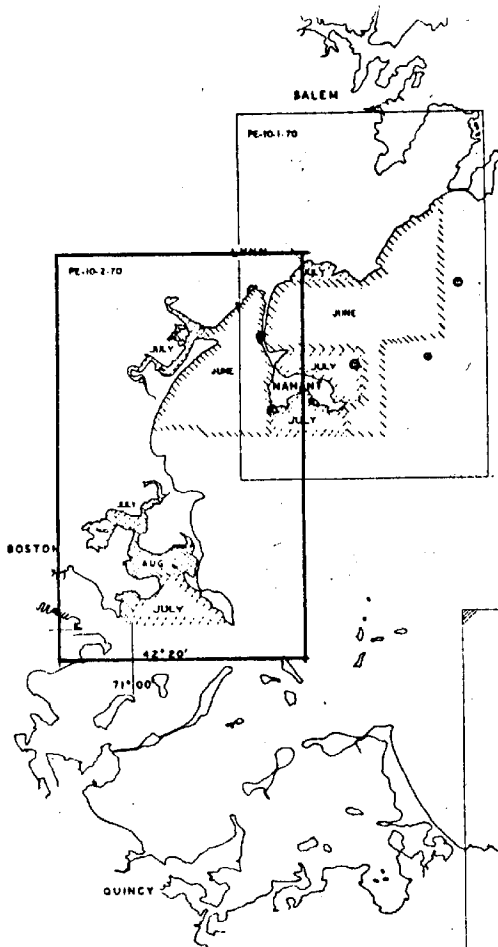
PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION

- (1) PROJECT No. OPR 473 (4) REQUESTED BY Lt. J. O. Rolland
 (2) H No. 9134 (5) SHIP OR OFFICE PEIRCE
 (3) FIELD No. PE 10-2-70 (6) DATE REQUIRED April 10, 1970
 (7) VISUAL (8) ELECTRONIC (FILL OUT FORM #3)
 (10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1) 4464.41 METERS
 OR WEST EDGE (NYX = 0).
 (11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE
 OF SHEET. 4,688,448.25 METERS
70° 58' 30"
 (12) CENTRAL MERIDIAN
 (13) SURVEY SCALE 1: 10,000
 (14) SIZE OF SHEET (CHECK ONE) 60 36x34 42x60 OTHER
 (15) NYX, ORIENTATION OF SHEET (CHECK ONE)
 NYX = 1 NYX = 0

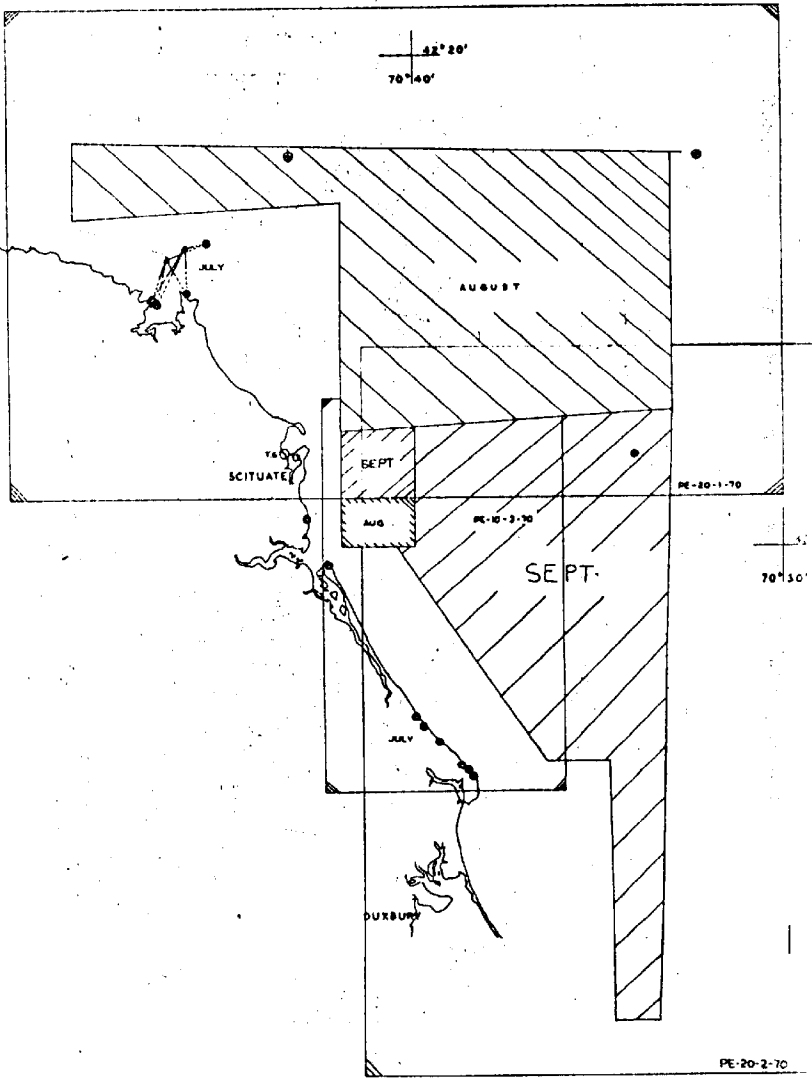


LIST G.P. OF ALL STATIONS TO BE PLOTTED ON THIS PROJECTION ON THE BACK OF THIS FORM. (DEG., MIN., METERS)

- GRID LIMITS
- (16) GREATEST LATITUDE 42° 28' 00" (PROJECTION LINE
 (17) LOWEST LATITUDE 42° 20' 30" INTERVAL, PAGE 4
 (18) DIFFERENCE ° 7' 30" HYDRO MANUAL)
 (19) 0' 30" "
 (20) 15 YSN
 (21) GREATEST LONGITUDE 71° 02' 00"
 (22) LOWEST LONGITUDE 70° 55' 30"
 (23) DIFFERENCE ° 06' 30"
 (24) 0' 30" "
 (25) 13 XSN



COAST & GEODETIC SURVEY—DON A. JONES, DIRECTOR
 MONTHLY PROGRESS SKETCH—OPR 473
 CAPE ANN TO CAPE COD
 USC & GSS PEIRCE—CDR BRUCE I. WILLIAMS COMDG.
 FIELD SEASON 1970
 SCALE CHART 1207



APPENDIX G

ABSTRACT OF STANDARD FORMAT COLUMN HEADINGS

Raw Data ("On Time") Tape

Time	Ind	Sdg	Pos#	Day	Left Angle	Right Angle	Left Ctr Obj	Rt Obj
120000	1	0100	2500	212	090120	088450	0601 411	448

Position Tape

Time	Ind	Sdg	Pos#	Day	Left Angle	Right Angle	Left Ctr Obj	Rt Obj
134430	0	0000	2500	212	090120	088450	0601 411	208

Sounding Tape

Time	Ind	Sdg	Vel. Tab.	Day	Left Angle	Right Angle	Left Ctr Obj	Rt Obj	Spec Ind
142415	1	0225	0002	212	000000	000000	0000 000	500	

TRA Correction/Table Indicator (TC/TI) Tape

Time	Ind	TRA	Vel. Tab.	Day	Left Angle	Right Angle
105200	0	1003	0002	189	000000	000000

Tide Tape

Time	Ind	Tide	Day	Left Angle	Right Angle
090100	0	0064 0000	135	000000	000000

Velocity Correction Tape

Depth	Ind	Vel. Corrn	Vel Table	Day	Left Angle	Right Angle
000100	0	0004	0003 000		000000	000000

Signal List Tape

EDP#	Latitude			Longitude			Name
	°	'	Meters	°	'	Meters	
100	42	31	0892	070	50	0451	CAT

Field Number PE 10-2-70

ABSTRACT OF HYDROGRAPIC DATA LOCATED ON THE SURVEY

<u>POSITION NUMBER</u>	<u>OBJECT</u>
693	Piling 1½ feet at 080230
694	Rock covered 4 feet at 081130
704	Red Nun Buoy "12"
796	fne br S
797	fne br S
798	fne P
799	fne br S
800	fne br S
801	fne br S
802	fne br S w/ M
803	fne br S w/ M
804	fne br S w/ P
805	fne br S w/ bk M
806	bk M
889	White whistle buoy "C"
890	Black can buoy "1"
891	Black whistle buoy "5"
953	Red Nun buoy "2"
1201A	Location of Signal Way-747
1579	fne bk M
1580	fne bk M
1581	fne bk M
1582	Wd
1583	Wd
1584	fne bk M
1585	fne bk M
1586	Crs P brk Sh
1587	fne br M
1588	fne bk M
1589	fne gn gy M
1590	fne gy M
1591	fne gy M
1623	br M brk Sh
1624	fne gy S Sh
1625	fne bk M
1626	fne bk M Grs
1749	Rock covered 4 feet at 120700
1750	Rock covered 5½ feet at 121500

All other objects were located by skiff & recorded in skiff volumes #1 & #2 and are on the position tape for the skiff.

(see additional D.P.'s in back of Sounding printout)

10-2-70

Buoy Location Comparison Between Boat Sheet and Charts 240 & 248

Buoy #	Boat Sheet Location	Charted Location	Comments
Lynn			
R "2" Bell	70-57-12; 42-25-12	70-57-12; 42-25-11	OK
Qk Fl N "4"	70-57-12; 42-25-24.5	70-57-12; 42-25-24.5	OK
N "6"	70-57-11; 42-25-31	70-57-10.5; 42-25-30	OK
N "10"	70-56-45; 42-26-04.5	70-56-46; 42-26-04	OK
C "13"	70-56-31; 42-26-46	70-56-31; 42-26-47	OK
N "2"	70-57-30.5; 42-25-22	70-57-31.5; 42-25-21	OK
N "4"	70-57-41; 42-25-32.5	70-57-38.5; 42-25-34.5	Coast Guard should move buoy to charted loc.
C "5"	70-57-33; 42-25-55.5	70-57-34; 42-25-56	OK
C "7"	70-57-29; 42-26-12.5	70-57-28; 42-26-12	OK
C "9"	70-57-34; 42-26-27.5	70-57-34; 42-26-28	OK
Qk Fl N "10"	70-57-37.5; 42-26-33	70-57-37; 42-26-33	OK
N "12"	70-57-51; 42-26-35	70-57-50; 42-26-36	OK
Winthrop			
N "2"	70-59-29; 42-20-25	70-59-31; 42-20-26	OK
W "A" Gong	70-57-35; 42-20-38	70-57-35; 42-20-38	OK
W C "B"	70-57-43; 42-20-44	70-57-42; 42-20-44	OK
W "C" Ra Ref Fl 4 sec.	70-58-55; 42-22-33	70-58-56; 42-22-33	OK
C "1"	70-58-59; 42-20-35	70-58-58; 42-20-34	OK
C "3"	70-58-47; 42-20-58	70-58-48; 42-20-57.5	OK
N "4"	70-58-45; 42-21-00	70-58-44; 42-21-01	OK
B "5" Whistle Fl 4 sec.	70-58-45; 42-21-12.5	70-58-46; 42-21-13	OK
N "6"	70-58-40; 42-21-26	70-58-41; 42-21-27	OK
C "7"	70-58-42.5; 42-21-25	70-58-44; 42-21-26	OK
N "2"	70-58-40; 42-21-48	70-58-42; 42-21-48	Coast Guard has placed this red buoy on the southeast side of the channel the charted loc. should be changed to boat sheet location

10-2-70

Buoy Location Comparison cont.

	Boat Sheet Location	Charted Location	Comments
C "3"	70-58-37; 42-21-50	70-58-39; 42-21-49-----	charted loc. should be changed to boat sheet location
N "4"	70-58-32; 42-22-00	70-58-33; 42-22-00-----	this red buoy is on the west side of the channel it should be on the east side at 70-58-26; 42-22-00
C "5"	70-58-27; 42-22-10	70-58-27; 42-22-10	OK
C "1"	70-59-15; 42-21-47	70-59-17.5; 42-21-48-----	charted Guard. should have buoy to charted location
N "2"	70-59-17; 42-21-52	70-59-17.5; 42-21-52	OK
N "4"	70-59-31; 42-21-54	70-59-27.5; 42-21-53-----	charted loc. should be changed to boat sheet location
C "5"	70-59-44; 42-21-59	70-59-47; 42-21-59-----	charted loc. should be changed to boat sheet location
N "6"	70-59-42.5; 42-22-00	70-59-43; 42-22-01	OK
C "7"	70-59-58; 42-22-15	70-59-58; 42-22-15	OK
N "8"	70-59-56; 42-22-15	70-59-56; 42-22-14	OK
C "9"	70-59-50; 42-22-38	70-59-50; 42-22-38	OK
N "10"	70-59-49; 42-22-36	70-59-48; 42-22-37	OK

H-9134

GEOGRAPHIC NAMES

Name on Survey	Source of Name									
	A	B	C	D	E	F	G	H	K	
										1
										2
										3
										4
										5
										6
										7
										8
										9
										10
										11
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										24
										25

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION			AMOUNT
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS (with one overlay)			150
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS			2
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES						2-misc. data
CAHIERS	2-with printouts					
VOLUMES	3					
BOXES			1-Smooth			

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS		
	PRE-VERIFICATION	VERIFICATION	TOTALS
POSITIONS ON SHEET			2205
POSITIONS CHECKED		217	
POSITIONS REVISED		39	
SOUNDINGS REVISED		462	
SOUNDINGS ERRONEOUSLY SPACED		-	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		-	
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	20		
VERIFICATION OF CONTROL		17	
VERIFICATION OF POSITIONS		166	
VERIFICATION OF SOUNDINGS		130	
COMPILATION OF SMOOTH SHEET		60	
APPLICATION OF TOPOGRAPHY		40	
APPLICATION OF PHOTOBATHYMETRY		-	
JUNCTIONS		2	
COMPARISON WITH PRIOR SURVEYS & CHARTS		NA	
VERIFIER'S REPORT		2	
OTHER		8	
TOTALS	20	425	445

Pre-Verification by D. Calland, W.H. Guy	Beginning Date 12/13/74	Ending Date 04/15/75
Verification by R. Cram, J. Wilson	Beginning Date 11/15/75	Ending Date 05/15/79
Verification Check by B.J. Stephenson	Time (Hours) 18	Date 02/11/80
Marine Center Inspection by	Time (Hours)	Date
Quality Control Inspection by	Time (Hours)	Date
Requirements Evaluation by	Time (Hours)	Date

2. Control and Shoreline

a. The origin of the control is adequately described in the descriptive report.

b. The shoreline originates from final reviewed photogrammetric manuscripts T-12981, T-12984, T-1985, T-12988 and T-13242 of 1965-69.

3. Hydrography

a. Depths at crossings are in good agreement.

b. The standard depth curves were adequately delineated.

c. The development of the bottom configuration is considered adequate; however, because of the irregularities of the bottom configuration additional lines would have been more desirable.

4. Condition of Survey

The smooth sheet and accompanying boatsheet, hydrographic records, and reports are adequate to conform to the requirements of the Hydrographic Manual, with the following exceptions:

a. The sounding volume indexes were not filled out.

b. The developments of the Presurvey Review Items could have been

accomplished more effectively with additional lines.

5. Junctions

An adequate junction has been effected with H-9133 (1970) in the vicinity of $42^{\circ}24.7'N$, $70^{\circ}56.0'W$. The junctions with the other junctional surveys will be discussed during review of this survey.

6. Comparison with Prior Surveys

a. Not applicable, will be accomplished during review.

7. Comparison with Charts

Not applicable, will be accomplished during review.

8. Compliance with Instruction

Not applicable, will be discussed during review.

9. Additional Field Work

Not applicable, will be discussed during review.

NOTE TO REVIEWER

PSI - The dashed circled 12-foot soundings charted at Lat. $42^{\circ}21'43.0\text{N}$, Long. $70^{\circ}58'49.0\text{W}$ were not discussed in the Descriptive Report.

APPROVAL SHEET
FOR
SURVEY H- 9134

- A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 2-20-80

Signed:



Title: Chief, Verification Branch

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

Hydrographic Index No. 62 P

