NOAA FORM 76-35
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

<table>
<thead>
<tr>
<th>Type of Survey</th>
<th>Shoreline (Photogrammetric)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>PH-6601</td>
</tr>
<tr>
<td>Map No.</td>
<td>T-12976</td>
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<tr>
<td>Classification No.</td>
<td></td>
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<tr>
<td>Edition No.</td>
<td></td>
</tr>
<tr>
<td>Field Edited</td>
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LOCALITY

<table>
<thead>
<tr>
<th>State</th>
<th>Massachusetts</th>
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<tbody>
<tr>
<td>General Locality</td>
<td>Boston to Plum Island</td>
</tr>
<tr>
<td>Locality</td>
<td>Marblehead Harbor</td>
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</table>

1965 TO 1968

Alfred C. Holmes, Director, AMC

REGISTRY IN ARCHIVES

DATE

★ U.S. GOVERNMENT PRINTING OFFICE: 1972-781-152
DESCRIPTIVE REPORT - DATA RECORD
T-12976

PROJECT NO. (III):
PH-6601

FIELD OFFICE (III):

PHOTOMGRAMMETRIC OFFICE (III):
Atlantic Marine Center, Norfolk, VA

CHIEF OF PARTY

OFFICER-IN-CHARGE
Alfred C. Holmes, Director, AMC

INSTRUCTIONS DATED (III) (IV):
Field - Aug. 4, 1965
Field - Aug. 19, 1965 Provisional instructions, Aerial photography
Office - Oct. 8, 1965 Instructions, Aerotriangulation
Office - Jan. 27, 1966
Office - Feb. 2, 1966 Instructions, Aerotriangulation
Office - Apr. 28, 1966
Field - May 20, 1966 Supplement I
Office - July 11, 1966 Supplement I

METHOD OF COMPILATION (III):
Wild B-8 and Graphic

MANUSCRIPT SCALE (III):
1:5,000

STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):
1:7,50000 Pantographed

DATE RECEIVED IN WASHINGTON OFFICE (IV):

DATE REPORTED TO NAUTICAL CHART BRANCH (IV):
SEPT. 1975

APPLIED TO CHART NO.

DATE:

DATE REGISTERED (IV):

GEOGRAPHIC DATUM (III):

NA 1927

VERTICAL DATUM (III):

MEAN SEA LEVEL EXCEPT AS FOLLOWS:
Elevations shown as (2) refer to mean high water
Elevations shown as (3) refer to sounding datum
I.e., mean low water or mean lower low water

REFERENCE STATION (III):
Marblehead Lighthouse 1914

LAT.:

42°50'19.7"N (592.0m)

70°50'03.0"W (69.7m)

LONG.:

ADJUSTED

UNADJUSTED

STATE:
Massachusetts

ZONE:
Mainland

PLANE COORDINATES (IV):
y = 549,243.66 Ft.
x = 779,542.98 Ft.

MAN NUMERALS INDICATE WHETHER THE ITEM IS TO Be ENTERED BY (III) FIELD PARTY, (IV) WASHINGTON OFFICE.

WHEN ENTERING NAMES OF PERSONNEL ON THIS RECORD GIVE THE SURNAME AND INITIALS, NOT INITIALS ONLY.
## DESCRIPTIVE REPORT - DATA RECORD

**T-12976**

### FIELD INSPECTION BY (III):

None

### MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION):

Air Photo Compilation  
Date of Photography: August 25, 1965 and August 31, 1965

### PROJECTION AND GRIDS RULED BY (IV):

**A.E. Roundtree**  
**DATE:** 6/1/66

### PROJECTION AND GRIDS CHECKED BY (IV):

**R. Glaser**  
**DATE:** 6/3/66

### CONTROL PLOTTED BY (III):

**L. Neterer**  
**DATE:** 9/26/66

### CONTROL CHECKED BY (III):

**A. Santillan**  
**DATE:** 9/26/66

### RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):

**H.P. Eichert**  
**DATE:** 11/1/66

### STEREOSCOPIC INSTRUMENT COMPILATION (III):

**Wild B-8**  
**PLanimetry**  
Reviewed: **L. Neterer**  
**DATE:** 8/2/67

**Contours**  
Inapplicable  
**DATE:**

### MANUSCRIPT DELINEATED BY (III):

**R. White**  
**DATE:** 9/15/67

### SCRIBING BY (III):

**DATE:**

### PHOTOMGRAMMETRIC OFFICE REVIEW BY (III):

**R.E. Smith**  
**DATE:** 10/3/67

### REMARKS:


<table>
<thead>
<tr>
<th>NUMBER</th>
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<th>TIME</th>
<th>SCALE</th>
<th>STAGE OF TIDE</th>
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<td>8/31/65</td>
<td>08:48</td>
<td>1:15,000</td>
<td>0.2 ft. below MLW*</td>
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<tr>
<td>7325</td>
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<tr>
<td>65-S(c)7350 thru</td>
<td>8/31/65</td>
<td>09:06</td>
<td>1:15,000</td>
<td>0.1 ft. below MLW*</td>
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<td>7354</td>
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<tr>
<td>65-S-7166R thru</td>
<td>8/25/65</td>
<td>10:03</td>
<td>1:15,000</td>
<td>9.0 ft. above MLW*</td>
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<td>65-S-7195R thru</td>
<td>8/25/65</td>
<td>10:17</td>
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<tr>
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**TIDE (III) Predicted**

| REFERENCE STATION: |  |  |  |
|--------------------|  |  |  |
| Boston             | 9.5 | 11.0 |

**SUBORDINATE STATION:**

| Marblehead         | 9.1 | 10.6 |

**WASHINGTON OFFICE REVIEW BY (IV):**

| Bernard Kurs, AMC | DATE: | 12/73 |

**REMARKS:**

*The stage of tide at the time of photography was determined by readings on a staff at Gloucester Harbor (Ten Pound Island). See instructions dated 28, April, 1966.*
<table>
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<tr>
<th>Compilation Record</th>
<th>Completion Date</th>
<th>Remarks</th>
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<td>Alongshore area for hydro</td>
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<td>Superseded</td>
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<tr>
<td>Field Edit Applied &amp; Interior</td>
<td>Oct. 1967</td>
<td>Superseded</td>
</tr>
<tr>
<td>Completed. Compilation Complete.</td>
<td></td>
<td></td>
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<tr>
<td>Final Review</td>
<td>Dec. 1973</td>
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</table>
SUMMARY TO ACCOMPANY

DESCRIPTIVE REPORTS PH-6601

This shoreline manuscript is one of thirty-one maps that make up this project. The primary purpose of the project is to provide contemporary shoreline for nautical chart construction. Maps were also used to provide photogrammetric hydro support data for the hydrographic surveys to be conducted in the same area.

The only field work prior to compilation was recovery and identification of horizontal control required for aerotriangulation.

Field edit was accomplished by a photogrammetric field party during the years 1967, 1968, 1969 and 1970. The field edit was adequate.

Cronaflex positives and ozalids of the manuscripts were furnished for the use of the field editor and the preparation of the hydrographers boat sheets. Accompanying these were specially prepared ratio photographs to aid in the location of hydrographic signals.

Final review was accomplished at the Atlantic Marine Center from September, 1973 to April, 1974.

A cronaflex positive and negative of each reviewed manuscript are being forwarded for record and registry.
FIELD INSPECTION REPORT

T-12976

Boston to Plum Island

PH-6601

There was no field inspection prior to compilation.
PHOTOGRAMMETRIC PLOT REPORT
Job PH-6601
Boston to Plum Island, Massachusetts

November 1, 1966

21. Area Covered

This report covers aerotriangulation for 1:5,000 and 1:10,000 scale surveys in an area north of Boston, Massachusetts. The 1:5,000 scale surveys are T-12968 thru T-12977; the 1:10,000 scale surveys are T-12959 thru T-12967 and T-12978 thru T-12985.

22. Method

Four strips were bridged by the analytic method. Strip 1 was at a scale of 1:30,000 using infrared photography; Strips 2 and 3 at a scale of 1:30,000 using color film; and Strip 4 using color film at a scale of 1:15,000.

The 1:30,000 scale bridges were to be used for the 1:10,000 scale compilation. The four-model 1:15,000 scale bridge was necessary to complete coverage on surveys T-12972 and T-12978.

Common points between the 1:30,000 and 1:15,000 scale photography were selected. Plane coordinate positions from our bridges were determined so that 1:15,000 scale models could be controlled to compile the 1:5,000 scale surveys. Plane coordinates are on the Massachusetts State Grid (Mainland). The attached aerotriangulation sketch shows location of strips bridged. Closures to control have been tabulated.

23. Adequacy of Control

Field identified control was supplemented by office identified horizontal control points and was adequate.

24. Supplemental Data

Vertical control points needed for strip adjustments were taken from USGS quads.

25. Photography

The color photography was excellent. The infrared photography, which is not particularly suited for bridging, was adequate.

Respectfully submitted,

[Signature]

Henry P. Eichert
AEROTRIANGULATION SKETCH
BOSTON TO PLUM ISLAND
PH-6601
May, 1966

Δ control used in adjustment
Δ control used as check
STRIP #1

1. MEAD 2 (MGS), 1934
   target (+0.1, +0.1)
   sub. pt. (-0.9, +1.2)

2. CHUTE, 1849
   target (-0.4, -0.2)

3. PLUM ISLAND COAST GUARD SCAFFOLD, 1943
   target (+0.5, +0.3)
   sub. pt. (-2.8, +4.5)

4. OLD TOWN, 1850
   target (-0.2, -0.2)
   RP #4 (-0.2, +0.3)


STRIP #2

5. STONEHAVEN (ROCKPORT TOWN (MGS)), 1939
   target (+1.2, -2.6)
   sub. pt. A (-0.7, -1.6)
   sub. pt. B (+1.3, -3.0)

   1. MEAD 2 (MGS), 1934
      target (0.0, +3.3)
      sub. pt. (+0.7, +3.6)
1. Manchester Church Dark Spire, 1849
   Target (-6.0, +0.8)
   Sub pt. A (-7.1, +3.1)

   Office identified (+4.8, +1.9)

3. Fort Pickering Lighthouse, 1877
   Office identified (+6.0, +1.0)

4. High Rock 1 (MGS)
   Sub pt. A (+3.2, -4.9)
   Sub pt. B (+2.0, -2.8)

5. High Rock 3, 1943
   Office identified (+1.8, -3.7)

6. Revere Catholic Church Tower, 1934
   Office identified (-4.0, -4.0)

7. Booth (MGS), 1934
   Sub pt. A (+3.4, -1.4)

   Office identified (-1.5, +2.2)

   Office identified (+2.1, -1.0)

10. Medford TV Station, WNAC Tower, 1953
    Office identified (+5.3, -1.0)
22. Medford Radio Station WEEI, NE Tower, 1958
   Office identified (+14.1, +3.0)

23. Medford Radio Station WEEI, SW Tower, 1958
   Office identified (+1.2, +3.1)

24. Strips #3

25. Boston State House, 1934
   Office identified (+2.6, +5.5)

   Office identified (+3.7, +4.7)

27. Charlestown Bunker Hill Monument, 1846
   Office identified (+2.2, +0.1)

   Office identified (+1.6, +5.5)

29. Chelsea Quigley Mem. Hospital W.T., 1953
   Office identified (+2.3, -2.0)

30. Revere Catholic Church Tower, 1934
   Office identified (-4.0, -5.0)

31. Revere Beach Stack, 1919
   Office identified (-41, -22)

32. High Rock #2
   Sub. PT. B (+2.9, +3.9)

33. Nahant Coast Guard Cupola, 1919
   Office identified (+3.6, +6.4)
13. Swampscott High School Finial, 1940
   Office identified: (+0.7, +3.4)

12. Swampscott Larger Standpipe, 1934
   Office identified: (+0.7, +1.3)

11. Marblehead, Abbott Tower, 1719
   Office identified: (-0.6, +4.2)

10. Marblehead Lighthouse, 1914
   Office identified: (+2.0, +5.1)

  Manchester Church Park Spire, 1848
    Target: (-3.5, -5.8)
    Sub. pt A: (-4.1, -5.2)

  Head 2 (M.65), 1934
    Target: (+3.8, -0.7)
    Sub. pt.: (16.2, -1.2)

  Stonehaven (Rockport Town M.65), 1939
    Target: (-2.1, +0.3)
    Sub. pt A: (-1.3, +1.6)
    Sub. pt B: (-2.0, +1.2)

  Straitsmouth Lighthouse, 1902
    Office identified: (-3.1, -5.2)
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<tbody>
<tr>
<td>12601</td>
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<td>12602</td>
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<td>13601</td>
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<td>14601</td>
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<tr>
<td>STATION</td>
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<tr>
<td>--------------------------------------</td>
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<tr>
<td>MARBLEHEAD LIGHTHOUSE 1914</td>
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<tr>
<td>MARBLEHEAD ABBOT TOWER 1919</td>
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<tr>
<td>MARBLEHEAD YELLOW STANDPIPE 1934</td>
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<tr>
<td>KETTLE BOTTOMS BEACON 1914</td>
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<tr>
<td>MARBLEHEAD WEATHER SERVICE DISPLAY TOWER 1914</td>
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<tr>
<td>MARBLEHEAD FIRST CONGREGATIONAL CHURCH 1919</td>
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<td>ROARING BULL LEDGE BEACON 1916</td>
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<td>MARBLEHEAD NECK 1940</td>
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COMPUTED BY: L.L. Graves
DATE: 10/13/66

CHECKED BY: A.L.S & J.S.P.
DATE: 10/17/66
COMPILATION REPORT
T-12976

31. DELINEATION

Compilation of all features, with the exception of the mean high water line, were compiled by the Wild B-8 method using the color photography taken at mean low water. The mean high water line was compiled by the graphic method from the infrared photography taken at mean high water.

There was no field inspection.

Photography was satisfactory.

32. CONTROL


33. SUPPLEMENTAL DATA

None.

34. CONTOURS AND DRAINAGE

Contours are inapplicable.

Drainage was delineated from office interpretation of the photographs.

35. SHORELINE AND ALONGSHORE DETAILS

See Item 31.

The mean low water line, shallow lines, foreshore, etc. were delineated from office interpretation of the photographs.

There was no shoreline inspection.

36. OFFSHORE DETAILS

No statement.

37. LANDMARKS AND AIDS

Appropriate copies of Form 567 for Landmarks and Aids have been submitted to the Washington Office under date of January 14, 1969.
38. **CONTROL FOR FUTURE SURVEYS**

There are no recoverable topographic stations. A sufficient number of shoreline pass points have been located to facilitate the location of photo-hydro stations.

39. **JUNCTIONS**

Junctions are in agreement with: T-12973 (scale 1:5,000) and T-12979 (scale 1:10,000) to the north; T-12983 (scale 1:10,000) to the south; T-12975 (scale 1:5,000) and T-12978 (scale 1:10,000) and T-12982 (scale 1:10,000) to the west; T-12977 (scale 1:5,000) and T-12979 (scale 1:10,000) and T-12983 (scale 1:10,000) to the east.

40. **HORIZONTAL AND VERTICAL ACCURACY**

No statement.

46. **COMPARISON WITH EXISTING MAPS**

Comparison has been made with USGS Quadrangles MARBLEHEAD NORTH, MASS., scale 1:24,000 dated 1956 and MARBLEHEAD SOUTH, MASS., scale 1:24,000, dated 1956.

47. **COMPARISON WITH NAUTICAL CHARTS**

Comparison has been made with Chart 241, scale 1:10,000, 3rd edition, dated September 30, 1963.

**ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY**

None.

**ITEMS TO BE CARRIED FORWARD**

None.
Submitted by:

Richard Kincaid
R.E. Smith
Cartographer
10/6/69

Approved:

Albert C. Rauck, Jr.
Albert C. Rauck, Jr.
Chief, Coastal Mapping Section, AMC
GEOGRAPHIC NAMES

FINAL NAME SHEETS

Ph-6601 (Boston to Plum Island, Mass.)

T-12976

Back Beach, Black Joe Pond
Boden Point
Brown Island
Castle Rock
Cloutman Point
Devereux
Devereux Beach
Dolliber Cove
Dolliber Point
Fluen Point
Flying Point
Fort Sewall
Gerry Island
Jack Point
Ladys Cove
Little Pig Rocks
Marblehead
Marblehead Channel
Marblehead Harbor
Marblehead Neck (locality)
Marblehead Neck
Massachusetts Bay
Naugus Head
Peach Point
Rum Island
Reds Pond
Roaring Bull
Salem Harbor
Skinner Head
Tinkers Island

Prepared by:

C. E. Harrington
Staff Geographer
49. NOTES FOR THE HYDROGRAPHER AND FIELD EDITOR

Separate edit Ozalids have been prepared for your respective uses. These are intended to simplify your efforts and eliminate the possibility of any duplication of edit procedures.

On each are noted pertinent remarks concerning doubtful interpretations or items of compilation requiring additional clarification and/or verification.

For the field editor, notes include all items inshore from the approximate M.L.W.L. All offshore items are noted for the Hydrographer’s attention.

Among these items requiring edit by both parties, are “Landmarks and Aids”. These are indicated by a numeral. The following key is an explanation of the attention they may require:

1. Object not visible on photos. Verify by edit.
2. Object visible, position verified (by compiler)
3. Object visible, position re-determined. Verify by edit.
4. Object which may be a landmark or new aid. Verify by edit.

Forms 567 should be submitted for all “Landmarks and Aids”.
# PHOTOGRAMMETRIC OFFICE REVIEW

**T. 12976**

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<thead>
<tr>
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<tr>
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**CONTROL STATIONS**

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<th>6. Recoverable Horizontal Stations of Less Than Third-Order Accuracy (Topographic Stations)</th>
<th>7. Photo Hydro Stations</th>
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**Bench Marks**

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<td>Bridge (W.O.)</td>
<td>Wild B-8</td>
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**Alongshore Areas (Nautical Chart Data)**

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**AIDS To Navigation**

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**PHYSICAL FEATURES**

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**Stereoscopic Instrument Contours**

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**Cultural Features**

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**Boundaries**

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**Miscellaneous**

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<th>33. Geographic Names</th>
<th>34. Junctions</th>
<th>35. Legibility of the Manuscript</th>
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**Discrepancy Overlay**

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**Reviewers**

<table>
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<tr>
<th>Reviewer</th>
<th>Date</th>
<th>Supervisor, Review Section or Unit</th>
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</table>

**Remarks**

Field Edit Applied From: Field Edit Ozalid Ship's Cronaflex (Signed Copy), and Field Photos Nos. 65-5-7324 thru 7325; 65-5-7350 thru 7353.
FIELD EDIT REPORT

PH-6601
Boston to Plum Island
T-12959 T-12975 T-12976 T-12978 T-12980

GENERAL NOTES

This report is submitted for four T-sheets, field edited May and June 1968; one sheet T-12980 was field edited June 1967 and is being returned.

Most discrepancies on sheet T-12978 are referenced to sheet T-12975 because of duplication. A few in the northwest corner of sheet T-12978 are noted directly on the sheet or referenced to photo 65-S-7315.

All notations on T-sheet and Photographs are made in violet ink. The notations were made either directly on the discrepancy sheet or referenced to photos.

51 METHODS

Field edit was accomplished by the following methods, by skiff and truck travel and by walking sections of the shoreline.

All rock and ledge areas were inspected at or near low-water. The rock and ledge heights were obtained by hand leveling from mean high-water or mean low-water lines, or by using hourly tide heights obtained from the ship Pierce.

All discrepancies on the field edit sheets have been verified directly on the sheets or referenced to a photograph.

Notations on photographs by sheet numbers are as follows:

<table>
<thead>
<tr>
<th>T-12975</th>
<th>T-12976</th>
<th>T-12978</th>
<th>T-12959</th>
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<tbody>
<tr>
<td>65-S-7340</td>
<td>65-S-7324</td>
<td>65-S-7315</td>
<td>65-S-7263</td>
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<tr>
<td>7349</td>
<td>7325</td>
<td>7351</td>
<td>7353</td>
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52 ADEQUACY OF COMPILATION

The compilation of HWL and MLWL around ledge areas as a whole appeared to be good, several ledge areas were inspected at low water, these are noted on the discrepancy print and referenced to a photograph. Compilation of piers, streets, and buildings was found to be good.

54 RECOMMENDATIONS:

None

56 ROCKS

Very few rocks were verified directly on the field edit sheets. However, areas of rocks in question and rocks recommended for charting, are noted on the field edit sheet and referenced to
These are inked on the following photos:

T-12976       T-12975
65-S-7324     65-S-7340
7325         7351
7350         7351
7352
7353

NAUTICAL LANDMARKS AND FIXED AIDS

All nautical landmarks and fixed aids were inspected and submitted on form 567.

58 LANDMARK BUILDINGS AND BLUFFS

Three landmark buildings are recommended for deletion, one each on the following: T-sheets T-12975, T-12976, and T-12978. All landmark buildings recommended for charting are circled and labeled as such on the following photos.

65-S-7324, 7350, 7352

All bluffs were investigated off shore and bluffs recommended for charting are inked on the following photos.

65-S-7324 7350 7352

All Public Buildings are circled on the following photos:

65-S-7340 7349 7352

59 STREETS

All street additions and classifications for T-sheets T-12975 and T-12976 are noted on the field edit sheet and referenced to the photos.

Submitted by

E. W. Hartford

2 June 1968
TO BE CHARTED

I recommend that the following objects which have been inspected from seaward to determine their value as landmarks be charted on the charts indicated.

The positions given have been checked after listing by

Lowell O. Neterer, Jr.

Allen L. Powell

Director, AMC

Chief of Party

### Charting Name

<table>
<thead>
<tr>
<th>Charting Name</th>
<th>Description</th>
<th>Signal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SALEM HARBOR APPROACHES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MARBLEHEAD HARBOR</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CHURCH TOWER</strong></td>
<td>Church Tower Wood White Dark Top Ht. = 85(135) ft.</td>
<td></td>
</tr>
<tr>
<td><strong>STANDPIPE</strong></td>
<td>Standpipe steel grey Ht. = 100(180) ft.</td>
<td></td>
</tr>
<tr>
<td><strong>STACK</strong></td>
<td>Stack Brick, yellow Ht. = 70(135) ft.</td>
<td></td>
</tr>
<tr>
<td><strong>TOWER</strong></td>
<td>Radio Tower Steel Ht. = 187(227) ft.</td>
<td></td>
</tr>
<tr>
<td><strong>OBS. TOWER</strong></td>
<td>Obs. Tower Concrete, green Ht. = 55(95) ft.</td>
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</tr>
<tr>
<td><strong>FLAGPOLE</strong></td>
<td>Flagpole wood white, gold ball stop Ht. = 35(45) ft.</td>
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</tr>
<tr>
<td><strong>SALEM HARBOR APPROACHES</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>FLAG TOWER</strong></td>
<td>Marblehead Weather Service Display Tower 1911 Steel ht=76(105) ft.</td>
<td></td>
</tr>
<tr>
<td><strong>STANDPIPE</strong></td>
<td>Marblehead Yellow Standpipe, 1934 Steel ht=100(175) ft.</td>
<td></td>
</tr>
<tr>
<td><strong>TOWER</strong></td>
<td>Marblehead Abbot Tower, 1919 Brick Ht. = 155(215) ft.</td>
<td></td>
</tr>
<tr>
<td><strong>CHURCH TOWER</strong></td>
<td>Marblehead First Congregational Church, 1919 Wood Ht=95(135) ft.</td>
<td></td>
</tr>
</tbody>
</table>

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 2-39, 6-36, 7-18 to 22 inclusive, and Fig. 74. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. This data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* Tabulate seconds and meters
**NONFLOATING AIDS OR LANDMARKS FOR CHARTS**

Atlantic Marine Center

Jan. 10, 1969

I recommend that the following objects which have not been inspected from seaward to determine their value as landmarks be charted on (description) the charts indicated.

The positions given have been checked after listing by

Lovell O. Neterer, Jr.

Allen L. Powell

Director, AMC

Chief of Party

<table>
<thead>
<tr>
<th>STATE</th>
<th>MASSACHUSETTS</th>
<th>DESCRIPTION</th>
<th>SIGNAL NAME</th>
<th>LATITUDE*</th>
<th>LONGITUDE*</th>
<th>DATUM</th>
<th>METHOD OF LOCATION AND SURVEY NO.</th>
<th>DATE OF 2DEGXXNSR Verifi.</th>
<th>CHARTS AFFECTED</th>
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</thead>
<tbody>
<tr>
<td>CHARTING NAME</td>
<td>SALEM HARBOR APPROACHES</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>MARBLEHEAD LIGHT</td>
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<tr>
<td></td>
<td></td>
<td>(Marblehead Lighthouse, 1914)</td>
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<td></td>
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<td>Ht. = 106 (117) ft.</td>
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<td></td>
<td></td>
<td>LIGHT</td>
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<td>42 30</td>
<td>19.187</td>
<td>03.052</td>
<td>N.A. Triang</td>
<td>T-12970 6/7/68</td>
<td>2H1, 2H0</td>
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<td></td>
<td></td>
<td>SALEM SOUTH CHANNEL</td>
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<td></td>
<td></td>
<td>Kettlebottom Daybeacon</td>
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<td></td>
<td></td>
<td>(Kettle Bottoms Beacon, 1914)</td>
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<td>6/7/68</td>
<td>2H1, 2H0 6/7/68</td>
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<td></td>
<td>NAHANT BAY APPROACH</td>
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<tr>
<td></td>
<td></td>
<td>Roaring Bull Daybeacon</td>
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<tr>
<td></td>
<td></td>
<td>(Roaring Bull Ledge Beacon, 1914)</td>
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<td></td>
<td>42 28</td>
<td>16.666</td>
<td>11.633</td>
<td>6/7/68</td>
<td>2H1, 2H0 6/7/68</td>
</tr>
</tbody>
</table>

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-35, 2-19, 6-36, 7-18 to 22 inclusive, and Fig. 79. Positions of charted landmarks and nonfloating aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. Positions considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

* TABULATE SECONDS AND METERS.
The following objects which have (deleted) been inspected from seaward to determine their value as landmarks be (deleted from) the charts indicated.

The positions given have been checked after listing by

Lowell O. Neterer, Jr.

Director, AMG

Chief of Party.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DESCRIPTION</th>
<th>SIGNAL NAME</th>
<th>COORDINATES</th>
<th>METHOD OF LOCATION AND SURVEY</th>
<th>DATE OF OBSERVATION</th>
<th>CHARTS AFFECTED</th>
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</thead>
<tbody>
<tr>
<td>acea</td>
<td>Salem Harbor Approaches</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>acea</td>
<td>Marblehead Harbor</td>
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<tr>
<td>standpipe (Marblehead Black Standpipe, 1919)</td>
<td>Destroyed</td>
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</tr>
</tbody>
</table>

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 1-55, 1-37, 6-46, 7-7 to 77 inclusive, and Fig. 79. Positions of charted landmarks and nonteaching aids to navigation, if redetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not individual field survey sheets. Information under each column heading should be given in the column heading, should be given.
61. **GENERAL STATEMENT:**

   See summary which is page 6 of the Descriptive Report.

62. **COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:**

   Comparison was made with Registered Survey 3766 at 1:10,000 scale, dated 1919. There is only general agreement of the two surveys because of the date difference and the difference of datum.

   This survey supersedes the prior listed survey for nautical chart construction purposes.

63. **COMPARISON WITH MAPS OF OTHER AGENCIES:**

   Comparison was made with USGS Quads Marblehead North and Marblehead South, Mass, dated 1956 at 1:24,000 scale. There is good general agreement. Because of the difference in scale only a visual comparison could be made.

64. **COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:**

   Comparison was made with Boat Sheets H-9010 and H-9012 at 1:5,000 scale dated 1968. Also, with Boat Sheet H-9094 at 1:10,000 scale dated 1969. There was very good agreement.

65. **COMPARISON WITH NAUTICAL CHARTS:**

   Comparison was made with Chart 241 at 1:10,000, scale dated July 29, 1972. There was very good agreement between the two. The only significant difference is the location of a long pier at Cloutman Pt. This is shown on the discrepancy print in red.

66. **ADEQUACY OF RESULTS AND FUTURE SURVEYS:**

   This survey complies with project instruction and meets the National Standards of Map Accuracy.
Reviewed by:

Bernard Kurs
Cartographer

Approved for forwarding:

Victor E. Serena
Chief, Photogrammetric Branch, AMC

Approved:

[Signature]
Chief, Photogrammetric Branch

[Signature]
Chief, Coastal Mapping Division