**DESCRIPTIVE REPORT**

**Type of Survey**  *Planimetric Air Photographic*

**Field No.**  |  **Office No.**  |  **T-5740**

**LOCALITY**

- **State:**  *Massachusetts*
- **General locality:**  *South Coast of Cape Cod*
- **Locality:**  *Niaano Beach to West Yarmouth*

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**194 4**

**CHIEF OF PARTY**

Fred. L. Peacock

**LIBRARY & ARCHIVES**

**DATE**
Applied to Ch. 258 (after win) by GR 8/2/45.
DATA RECORD

T-5740

Quadrangle (II); Barnstable, Mass. (7½') U.S.G.S. Project No. (II); H.T. 227
Sub-Project H.T. 227 B

Field Office; Air Photographic Party No. 2
Chief of Party; L. W. Swanson
Compilation Office; Chief of Party; L. W. Swanson
Baltimore Photogrammetric Office Fred. L. Peacock

Instructions dated (II III); Sept. 28, 1938
Aug. 15, 1939
Completed survey received in office; 21 July, 1946

Reported to Nautical Chart Section;

Reviewed; 7 Mar. 1945 Applied to chart No. 258 Date; 8/2/45
Bedrafting Completed; Feb. 1946

Registered; 7 June 1948 Published; Dec. 1946

Compilation Scale; 1:10,000 Published Scale; 1:10,000

Scale Factor (III); None

Geographic Datum (III); N. A. 1927 Datum Plane (III) Mean Sea-Level
Reference Station (III); YARMOUTH SOUTH BASE, 1936, r.1936
Lat. 41° 39' 22.978"(708.9m) Long. 70° 16' 46.915"(1085.5m) Adjusted

State Plane Coordinates (VI); Mass. Mainland Zone

\[ x = 937,481.14 \quad y = 241,568.53 \]

Military Grid Zone (VI)
<table>
<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Time</th>
<th>Scale</th>
<th>Stage of Tide</th>
</tr>
</thead>
<tbody>
<tr>
<td>2391 to 2401</td>
<td>7/16/38</td>
<td>11:00 A.M.</td>
<td>1:10,000</td>
<td>1.1' above M.L.W.</td>
</tr>
<tr>
<td>*G.S.F. 7-73 to G.S.F. 7-83</td>
<td>12/14/38</td>
<td>10:50 A.M.</td>
<td>1:10,000*</td>
<td>0.1' above M.L.W.</td>
</tr>
<tr>
<td>*G.S.F. 5-51 to G.S.F. 5-58</td>
<td>11/21/38</td>
<td>11:00 A.M.</td>
<td>1:10,000*</td>
<td>2.7' above M.L.W.</td>
</tr>
<tr>
<td>G.S.F. 5-92 to G.S.F. 5-94</td>
<td>11/21/38</td>
<td>11:00 A.M.</td>
<td>1:10,000*</td>
<td>2.7' above M.L.W.</td>
</tr>
</tbody>
</table>

*Enlarged from 1:24,000 to 1:10,000

Tide from (III); Predicted tide tables for Boston, Mass; with corrections to Hyannisport, Mass.

Mean Range: 3.1'  
Spring Range: 3.7'

Camera: [Kind or source] U.S. Coast & Geodetic Survey nine lens camera (focal length 24″). All negatives are on file at the Washington Office.

*U.S. Geological Survey single lens camera (focal length unknown)

Field Inspection by:  
A. L. Wardwell  
I. M. Zeskind  
E. B. Lewey  
\( \text{Date: Nov.-Dec. 1938} \)  
\( \text{June 1940} \)  
\( \text{July-Aug. 1941} \)

Field Edit by:  
\( \text{Date:} \)

Date of Mean High-Water Line Location (III); Date of 1938 and 1941 field inspection data

Projection and Grids ruled by (III) Washington Office  
\( \text{Date: Jan. 1939} \)

" " " checked by: " " "  
\( \text{Date: Jan. 1939} \)

Control plotted by: L. W. Swanson  
\( \text{Date: Jan. 1939} \)

Control checked by: L. M. Zeskind  
\( \text{Date: Jan. 1939} \)

Radial Plot by: W. C. Russell  
\( \text{Revised - L. W. Swanson, J. E. Deal, Jr.} \)  
\( \text{Date: Jan. 1939} \)  
\( \text{Date: March 1942} \)  
\( \text{Date: May, June, 1942} \)

Detailed by: H. L. Spaulding (shore line and interior—rough draft)  
\( \text{Date: 1944} \)

Detail Revised by: C.W.A. Supp, E. Whittemore, Jr.  
Reviewed in compilation office by: H.A. Gibson, K.B. Hoche  
\( \text{Date: July 1944} \)

Elevations on Field Edit Sheet checked by:  
\( \text{Date:} \)
STATISTICS (III)

Land Area (Sq. Statute Miles): 25.5

Shoreline (More than 200 meters to opposite shore): 19.5 Statute miles

Shoreline (Less than 200 meters to opposite shore): 4.1 Statute miles
(Measured along centerline)

Shoreline of Interior Ponds: 18.2 Statute miles

Number of Recoverable Topographic Stations established: 19
Number of Bench Marks located by radial plot: 4

Number of Temporary Hydrographic Stations located by radial plot: 71

Leveling (to control contours) - miles:

Roman numberals indicate whether the item is to be entered by,

(II) Field Party, (III) Compilation Party, or, (VI) the Washington Office.

When entering names of personnel on this record give the surname

and initials (not initials only).

Remarks:
26 CONTROL:

Forty-four Horizontal Control Stations appear on the Map Drawing. Of these, 20 are U. S. Coast and Geodetic Survey triangulation stations, and the remaining 24 are Massachusetts Geodetic Survey traverse stations. The triangulation and traverse stations have been shown on the Map Drawing with 3.0 mm. full-line black acid ink equilateral triangles.

The following 42 Horizontal Control Stations lie within the detail limits of the Map Drawing:

18 U. S. Coast & Geodetic Survey triangulation stations —

- W. YARMOUTH OBSERVATION TOWER, FLAGPOLE, 1934, r.1941
- W. YARMOUTH CONGREGATIONAL CHURCH SPIRE, 1934, r.1941
- W. YARMOUTH, CAFE CCD LAUNDRY, STACK, 1934, r.1938 (1)
- YARMOUTH, SOUTH BASE, 1936, r.1938
- HYANNIS, FELICITAS CHURCH SPIRE, 1934, r.1941 (2)
- HYANNIS, BAPTIST CHURCH SPIRE, 1887, r.1934, r.1941 (3)
- HINKLES WATER TANK, 1934, r.1941
- CENTERVILLE CHURCH, 1915, r.1934 (4)
- BAKERS WATER TANK, 1934, r.1938
- HYANNIS LIGHTHOUSE, 1875, r.1934, r.1941
- ENGLEWOOD HOTEL WATER TANK, 1934, r.1941 (Landmark) (5)
- GAMMON, 1934, r.1938
- POINT GAMMON WATER TOWER, 1934, r.1938 (Landmark)
- GREAT ROCK BEACON, 1934, r.1938
- HYANNIS BREAKWATER, 1934, r.1941 (Fixed Aid to Navigation)
- ST. ANDREWS BY THE SEA, CHURCH FLAGPOLE, 1934, r.1938
- POINT GAMMON LIGHTHOUSE, 1934, r.1938 (Landmark)
- MADDENS WATER TANK, 1934, r.1941

24 Massachusetts Geodetic Survey traverse stations —

- M 28 PF, r.1940
- M 28 PG, r.1941
- M 28 PH, r.1940
- M 28 PJ, r.1940
- M 28 PK, r.1938
- M 28 PL, r.1938 (11) see p. 35, p. 21 this Report.
- M 28 PM, r.1941

Additional U.S.C. & G.S. Stations:

HYANNIS, 1835.

* Lantern Removed in 1929
26 CONTROL: (Continued)

<table>
<thead>
<tr>
<th>Additional M.G.S. Traverse Stations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>10C - M 28 PE - M 28 QU -</td>
</tr>
<tr>
<td>113A - M 28 PN (v) M 28 QY -</td>
</tr>
<tr>
<td>113B - M 28 PP - Bound &quot;B&quot; (7)</td>
</tr>
<tr>
<td>113C - M 28 PQ - Bound &quot;C&quot; (8)</td>
</tr>
<tr>
<td>113D - M 28 PR - Bound &quot;D&quot; (9)</td>
</tr>
<tr>
<td>116A - M 28 QA (5) Bound &quot;E&quot; (10)</td>
</tr>
<tr>
<td>116B - M 28 QB (6)</td>
</tr>
<tr>
<td>124A - M 28 QC (5) Plotted by</td>
</tr>
<tr>
<td>reviewer</td>
</tr>
<tr>
<td>124B - M 28 QB (6)</td>
</tr>
<tr>
<td>124C - M 28 QC (5)</td>
</tr>
<tr>
<td>124D - M 28 QD</td>
</tr>
<tr>
<td>124E - M 28 QE</td>
</tr>
<tr>
<td>124F - M 28 QK</td>
</tr>
<tr>
<td>124G - M 28 QQ</td>
</tr>
<tr>
<td>124H - M 28 QS</td>
</tr>
<tr>
<td>124J - M 28 QT</td>
</tr>
</tbody>
</table>

The following 2 U.S. Coast & Geodetic Survey triangulation stations lie outside the detail limits of the Map Drawing:

- M 28 QF, r. 1940
- M 28 QG, r. 1941
- M 28 QH, r. 1941
- M 28 QA, r. 1940
- M 28 QL, r. 1941
- M 28 QM, r. 1941
- M 28 QN, r. 1940
- M 28 QP, r. 1941
- M 28 QR, r. 1941
- M 28 QS, r. 1940
- M 28 QR, r. 1941
- M 28 QA, r. 1938
- M 28 QB, r. 1938
- M 28 QC, r. 1938
- M 28 WD, r. 1938
- M 28 QA, r. 1938
- M 28 QB, r. 1938
- M 28 QC, r. 1938
- M 28 QD, r. 1938
- M 28 QE, r. 1938
- M 28 QF, r. 1938
- M 28 QG, r. 1938
- M 28 QH, r. 1938
- M 28 QI, r. 1938
- M 28 QJ, r. 1938
- M 28 QK, r. 1938
- M 28 QL, r. 1938
- M 28 QM, r. 1938
- M 28 MN, r. 1938
- M 28 QN, r. 1938
- M 28 QQ, r. 1938
- M 28 QR, r. 1938
- M 28 QS, r. 1938
- M 28 QW, r. 1938

Further discussion of the subject of control pertaining to this survey has been incorporated into Item No. 27, "Radial Plot", following.

27 RADIAL PLOT:

The original radial plot for this survey was run in January, 1939, as part of a combined plot including Surveys Nos. T-5740, T-5741, and T-5742. At that time, available control consisted of U.S. Coast & Geodetic Survey triangulation stations which were largely concentrated in the coastal area which comprises the southern portions of these surveys. The standard template method was used. Although some difficulties caused by differential distortion and chamber displacement in the photographs were encountered, the results of the plot were considered to be as...
27 RADIAL PLOT: (Continued)

satisfactory as could be reasonably expected in view of
the unfavorable distribution of available control stations.
One photograph, No. 2393, was found to be tilted. The de-
gree of tilt was computed to be 2° 40', and the position of
the isocenter was located for use as the origin in drawing
radials. The positions of secondary control points es-
blished by the radial plot in the northwestern portion of
the survey were considered to be relatively weak. Contribu-
ting factors were the sparseness of control, rather inade-
quate coverage by the nearest flight of nine lens photographs,
which crosses the area of the survey in a diagonal fashion,
and the fact that no contemporary survey exists to the north
with which junction could be effected.

Several factors combined to make the running of a second
radial plot for this survey appear desirable. Chronologically,
they were as follows:

1. For the reasons discussed above, the positions of
secondary control points established by the original radial
plot in some areas of the survey, were considered to be of
doubtful accuracy.

2. On September 28, 1938, subsequent to the date on
which the nine lens photographs were flown, a storm of
hurricane intensity struck the Eastern Seaboard and raged for
several days, causing severe and widespread damage. In cer-
tain coastal areas, such as Cape Cod, which are normally
subject to storm-made changes in the location of the High-
Water Line, the number and extent of such changes wrought
by the hurricane were appreciable. A number of these
changes occurred in the shoreline included within the area
of this survey.

3. Subsequent to the running of the original radial
plot, three flights of U. S. Geological Survey single lens
photographs became available, and prints were secured for
the use of the Compilation Office. These photographs were
made to serve a dual function - they provided better cover-
age of the area of this survey than was afforded by the nine
lens photographs alone, and, since they had been flown subsequent to the date of the hurricane, they were useful in compiling shoreline changes created by the hurricane.

4. Approximately one year after the running of the original radial plot, the Massachusetts Geodetic Survey completed establishing a series of traverse stations in the area of this survey, and the descriptions and geographic positions of these stations became available for use by the Compilation Office. The establishing of these stations afforded an opportunity to secure additional and much needed control in those areas where U. S. Coast & Geodetic Survey control was weak or inadequate.

5. In the course of the additional field inspection operations conducted during the summers of 1940 and 1941, many of the Massachusetts Geodetic Survey traverse stations were recovered and their positions located on the single lens U. S. Geological Survey photographs, thereby making them available for use for radial plot purposes.

6. When the single lens photographs were oriented under the Map Drawing, holding the most positively identified additional control afforded by the Massachusetts Geodetic Survey traverse stations, it was found that some of the secondary control points which had been established by the original radial plot from nine lens photographs could not possibly be held. From all indications, it appeared that some of these secondary points, especially in those areas where the original plot had been relatively weak, had not been established in their correct positions.

Because of the above circumstances, a second radial plot for this survey was run in March, 1942. It was an individual plot, and only the U. S. Geological Survey single lens photographs were used. All available horizontal control stations, both by the Coast & Geodetic Survey and the Massachusetts Geodetic Survey, were pricked on the photographs in all cases where their positions could be identified with a good degree of probable accuracy. Many
27 RADIAL PLOT: (Continued)

of the same secondary control points, for which positions had been determined by the original radial plot from the nine lens photographs, were pricked on the single lens photographs, and a number of additional well defined points were selected and also pricked.

The single lens photographs were found to show considerable differential distortion in the outer and corner areas. To reduce the undesirable effects of this distortion, circles of 9" radius were drawn on them, with centers common to those of the photographs. Then, in making the templates from the photographs, radial cuts from points lying outside the circles were either eliminated or used with caution.

Holding all well-defined Coast & Geodetic Survey triangulation stations either good or tangent, and those Massachusetts Geodetic Survey traverse stations which had been most positively identified on the photographs, the radial plot was run in the usual manner. Good resections of the great majority of secondary control points resulted. The positions of some of the secondary control points which had been located by the original plot were not altered appreciably. However, as had been anticipated, it was found necessary to shift the positions of some of the points from 2 to 10 meters to bring them into conformity with the other secondary points established by the plot.

After the radial plot had been satisfactorily completed, and the positions of the secondary control points had been transferred to the map projection, the positions of the centers of the nine lens photographs were re-established on the projection. This operation was accomplished by orienting each photograph under the projection, holding those horizontal control stations and newly established secondary control points which fell within a 2½" diameter circle, inscribed on the photograph in the manner and for the reason described above, in discussing the single lens photographs.

It should be again noted that the radial plot confirmed the presence of appreciable amounts of differential distortion
RADIAL PLOT: (Continued)

in both the single and nine lens photographs, and the fact that the nine lens photographs are also subject to chamber displacement. In using the nine lens photographs to resect the positions of secondary and minor detail points, it is recommended that they be oriented by individual chambers in order to minimize the effects of photographic defects. The single lens photographs, when used for the resection of points outside the 18" diameter circles inscribed on them, should be oriented by continual gradual adjustment to horizontal control and secondary points in the immediate area.

It may be mentioned that the positions of some of the Massachusetts Geodetic Survey traverse stations cannot be held in orienting all the photographs on which they are identified. This condition is undoubtedly due, at least in part, to the fact that most of the recovered stations were identified and pricked on the 1:24,000 scale field prints of the single lens photographs. Because much minute detail was lost in the enlarging process, considerable difficulty was experienced in identifying the correct reference points, or suitable substitute points, from which to determine the correct positions of some of the stations on the 1:10,000 scale office prints, and identification could not be considered positive.

The results of the second and final radial plot for this survey are considered to be as satisfactory as may be expected with the photographic coverage and control available. Had sufficient photographic coverage and well identified control been available to permit the running of a radial plot for the adjoining survey to the north, the plot for Survey No. T-5740 could undoubtedly have been strengthened in its relatively weaker area.

DETAILING:

Before entering into further discussion of the methods used in detailing the Map Drawing for the area of this survey, it may prove useful to briefly consider some of the rather unusual circumstances under which the field inspection and detailing were accomplished. It will be noted
that field inspection operations were carried on under
the charge of three different persons at intervals during
a period of almost three years. It was to be expected,
therefore, that minor discrepancies would occur in over-
lapping field inspection data, caused mainly by variations
in individual judgment and by actual physical changes in
topography during the total period of field inspection
operations. Such differences in field inspection data
were encountered mainly in detailing the northern half of
the Map Drawing where a considerable amount of 1938 data
on 1:10,000 scale nine lens field photographs overlap 1940
and 1941 data on 1:24,000 scale single lens field photographs.
The discrepancies were confined largely to road classifications
and to conflicting opinions on whether certain minor roads and trails
should be detailed or deleted. Variations in individual inter-
pretation of other features, such as woods classifications, were
not greater or more numerous than would normally be expected.
In most cases, after thorough office examination of the photo-
graphs, the 1940 and 1941 field inspection data were accepted
as most accurately and completely representing the most recent
conditions. With few exceptions, the foregoing discrepancies
are not considered of sufficient importance to warrant dis-
cussion of specific instances or further mention on the Map
Drawing or overlay sheet.

In general, it is considered that the field inspection
data pertaining to the northern half of the survey are ade-
quate, with the exception of drainage inspection. The data
for the remaining area are relatively sparse, and in some
areas entirely inadequate. Specific inadequacies of field
inspection data are discussed in greater detail under re-
lated sub-headings below.

The detailing of this Map Drawing was also completed
under rather unusual circumstances. For various reasons,
it was found necessary, upon review, to extensively revise
and re-detail the original compilation. This was accom-
plished by the undersigned and three other compilers. As
a result, a certain lack of uniformity in technique and
interpretation is apparent. It is considered, however,
that since such variations bear no relation to the accuracy
of the compilation, and are permissible in a rough draft
compilation, the additional time that would be required to assure complete uniformity would not be justified.

The Map Drawing has been compiled in accordance with instructions and standard practice. Explanatory notes cover any departures from normal procedure. Detailing was from unmounted nine lens and single lens photographs. Because they had been exposed subsequent to the previously mentioned hurricane of 1938, the U. S. Geological Survey single lens photographs were used with preference wherever possible. Also available was a series of 7" X 9" single lens photographs, exact date of exposure and camera characteristics unknown, which had been procured from the U. S. Engineer Department. The area covered by these photographs included most of the exterior shoreline and immediate vicinity. Lack of proper scale, and the presence of considerable distortion precluded any extensive use of them for actual detailing. However, their rather exceptional clarity, in areas where the definition of the U. S. Geological Survey lens photographs was poor, made them invaluable as additional reference in interpreting detail in the area covered by them.

Photographic coverage was adequate except for over a small area in the extreme northwest corner of the Map Drawing. A washable red ink line, with accompanying note, has been drawn on the reverse side of the Map Drawing to indicate the general area within which the location of planimetric detail may not conform to accuracy standards. Further pertinent comments on the probable accuracy have been included in the discussion of the radial plot, Item 27, foregoing.

Following, under convenient sub-headings, is a brief discussion of the main points of interest with regard to the detailing of the more important planimetric features which appear on this Map Drawing, and which are not mentioned elsewhere.

Roads - As previously mentioned, the field inspection data of 1940 and 1941 were generally accepted as the most reliable authority for road classifications. Unless described otherwise, from field inspection data, by a note on the Map Drawing, all roads are considered to be 0.6 mm. (6 meters on 1:10,000 scale) in width. It is apparent, however, that some
roads which appear on the photographs to be definitely wider than 0.6 mm. have not been so described by the Field Inspection Sub-Parties. Where classified by the field inspection data, trails are labeled.

A considerable number of roads in the southern portion of the Survey were not classified by the Field Inspection Sub-Parties, and had to be classified by careful office study of the photographs.

Several new locations of roads are discussed under Item 37, following.

For reasons mentioned above, some lack of uniformity in the manner in which the roads are detailed will be apparent. In some areas the roads are detailed with a double line, while in other similar areas only the center-lines may be shown. It is considered, however, that this condition will cause no difficulty in properly interpreting the correct road characteristics.

In cases where roads are detailed full width with a double line, and no classification has been shown, it should be assumed that they are first class roads. (df1).

Buildings - No areas within the limits of this survey were congested in the sense defined by the instructions. Therefore, an attempt has been made to detail all buildings of any probable importance which are visible on the photographs. In wooded areas, extensive use was made of the stereoscope to detect buildings on the office photographs.

It is noteworthy that the field identification of public buildings in urban areas does not appear to be complete. In Hyannisport it is almost totally lacking. Very little inspection of ordinary buildings was available for any portion of the area.

One structure, a new one-story brick building occupied by the Town of Barnstable Highway Department, which was
constructed subsequent to the date of the most recent photographs, has been detailed in the position fixed by field measurements.

Ponds - Characteristics of the terrain of this area are the numerous fresh-water ponds and lakes. They are predominantly shallow, and comparison between photographs of different dates, and stereoscopic examination, lead to the conclusion that the water levels and locations of shoreline of some of them are subject to considerable seasonal fluctuation. The field inspection data describe many of the ponds as "grassy," and a grass-and-water symbol has been used in detailing them. Others, not field inspected, but interpreted from a study of the photographs as being of a similar nature, have been detailed in the same manner. The same condition probably exists, at least seasonally, in portions of some of the remaining lakes and ponds, but has not been indicated for lack of sufficient evidence.

Drainage and Swamps - In general, field inspection data for streams, and to a lesser degree for swamps, is very incomplete. These features were interpreted from the office photographs, using a stereoscope when advantageous. Streams distinctly visible on the photographs are detailed in the usual manner. The approximate courses of some streams, which could not be accurately detailed because of intervening foliage, are shown with a long-dash line, accompanied by the note "Drainage."

Cranberry Bogs - Conditions in this area are apparently very favorable for the cultivation of cranberries, as evidenced by the numerous bogs which are clearly visible on the photographs. In most cases the bogs have been differentiated from swamps by the field inspection data. Positively identified bogs have been detailed by outlining the boundaries with a thin solid line, and showing all visible ditches within their limits. In a few cases, bogs which were not identified have been interpreted and detailed as such from their appearance on the photographs. In an area in the northeast portion of the Map Drawing, it will be noted that a number of areas are enclosed by a
28 DETAILING: (Continued)

thin dashed line. These areas were not field inspected, and from
their appearance under the stereoscope were interpreted as probable
bogs which are abandoned or not in active use. The bogs are fur-
ther identified on the Map Drawing by the abbreviation "C. B."

Railroads - Only one railroad, the Boston Division of the
New York, New Haven and Hartford Railroad, is located within the
limits of this survey. According to the field inspection data,
a section of track south of Hyannis is not abandoned. The lo-
cation of the abandoned roadbed has been shown with a dashed
line and properly identified on the Map Drawing. Railroad build-
ings along the right-of-way are detailed and identified in accord-
ance with the data listed as Reference 4, under Item 29, following.

Fields and Clearings - The field inspection data of the
several dates are not entirely consistent in the matter of i-
dentifying fields. In some cases all fields are identified by
an "F" and in others by a "C". So far as possible, fields are
identified on the Map Drawing by an "F"; and cultivated fields
by a "C". Clearings in wooded areas are identified by the no-
tation "CL".

Power Lines - A number of power lines are located within
this area, and have been detailed on the Map Drawing in the con-
ventional manner. Comparison with a schematic diagram of the
power line system of the Cape & Vineyard Electric Company would
indicate that all the power lines in the area which appear on
the diagram have been shown in their correct positions and re-
relationships. In cases where identification is considered positive,
the name of the operating company and the line characteristics
have been taken from the diagram and shown on the Map Drawing.

As explained under Item 35, following, the field inspection
photograph covering the southern portion of Great Island was not
available to the Compilation Office at the time this Map Drawing
was recompiled. Detailing of this area was accomplished mainly
from office inspection of the photographs.

29. SUPPLEMENTAL DATA:

A number of maps and plans covering portions of this survey,
and which had been produced by other organizations, were available
SUPPLEMENTAL DATA: (Continued)

to the Compilation Office. They were used to some extent to supplement the photographs and field inspection data in detailing the area of this survey. Their descriptions, sources, and principal reference values are as follows:

Ref. 1 - Plan of Barnstable, Mass. - a planimetric map compiled by the Town Planning Board, Town of Barnstable in 1928, revised in 1932. The "Town" may apparently be considered equivalent to a township, for within it are located a number of small towns and villages such as Hyannis, Hyannisport, and Centerville. The map covers the area of this survey with the exception of a narrow strip, approximately parallel to the eastern boundary, which is included within the Town of Yarmouth. It was used mainly as a source of names of principal streets and roads which were not furnished with the field inspection data. No geographic names were taken from it to supplement the name inspection furnished by the Field Inspection Sub-Parties, because in a number of cases the map showed names that were classed by said inspection as "not recommended."

Ref. 2 - Plan of Hyannis, Town of Barnstable, Mass. - a planimetric map of larger scale and greater detail than Ref. 1 above; compiled by the same authority as Ref. 1 in 1936. Hyannis is shown in considerable detail, but the eastern boundary is identical with that of Ref. 1. The map was used as an additional reference for street names, and to assist in identifying areas of public interest such as several parks and public landings.

Ref. 3 - Zoning Map, Town of Yarmouth, Mass. - a planimetric map compiled by the Town Planning Board, Town of Yarmouth, 1939. The map includes the area of this survey not covered by Ref. 1 and Ref. 2 above, and was used to a limited extent for similar purposes.

Ref. 4 - Two Blueprints of the track and building layout, revised to July 1, 1938, of the New York, New Haven & Hartford Railroad (Boston Division) in the vicinity of Hyannis. These prints were of use in detailing siding layouts, identifying and detailing buildings along the right-of-way, etc.
30 MEAN HIGH-WATER LINE:

The Mean High-Water Line (firm ground) has been shown on the Map Drawing with a full heavy-weight black acid ink line. The outer limits of marsh areas bordering the Mean High-Water Line have been shown with a full light-weight black acid ink line and the included area detailed with the conventional marsh symbol.

The field inspection data available for reference in detailing the position of the Mean High-Water Line were sparse and could be considered relatively complete only in several restricted areas. In detailing the shoreline, therefore, it was found necessary to resort to extensive office interpretation of the photographs, to supplement the field inspection data.

The location of the Mean High-Water Line in several localities within this area is apparently susceptible to relatively frequent and extensive storm-made changes. The running of plane table topography for the accurate location of the Mean High-Water Line in these localities was recommended by the earlier Field Inspection Sub-Party. The Sub-Party of 1941 apparently found it feasible to delineate the location of the Mean High-Water Line in these places on single lens photographs. As a result of such changing conditions, it is considered possible that the location of the Mean High-Water Line as shown on the Map Drawing, does not in all cases absolutely represent conditions prevailing at this date.

31 LOW-WATER AND SHOAL LINES:

No part of the Mean Low-Water Line could be detailed with confidence, from either field inspection data or stereoscopy.

The approximate limits, as visible on the photographs, of shoal areas, both offshore and adjoining the Mean High-Water Line, have been shown on the Map Drawing with a dashed, light-weight black acid ink line.
32 DETAILS OFFSHORE FROM THE HIGH-WATER LINE:

The field inspection data concerning rocks and foul areas in the area of this survey are very sparse. In certain localities, notably south of Hyannisport, and in the vicinity of Point Gammon, the nautical charts show the existence of numerous offshore rocks. The Field Inspection Sub-Parties have indicated the presence of the rocks by means of general notes, but no detailed data is available from which to locate and describe them. These areas have been identified on the Map Drawing by notes recommending further investigation by a hydrographic party.

All other offshore features, such as sandbars, have been detailed with conventional symbols and described in accordance with the field inspection data.

33 WHARVES AND SHORE LINE STRUCTURES:

All piers, jetties, breakwaters, seawalls, etc., which were visible on the photographs, and the existence of which were verified by the Field Inspection Sub-Parties, have been shown on the Map Drawing with the conventional symbols, accompanied by descriptive notes.

34 LANDMARKS AND FIXED AIDS TO NAVIGATION:

Four charted landmarks, two landmarks recommended for charting, and one charted fixed aid to navigation, the existence of all of which were verified by the Field Inspection Sub-Parties of 1938 or 1941, lie within the detail limits of this Map Drawing. These features have been identified in this Descriptive Report and on the Map Drawing and overlay sheet by the notes "landmark" and "fixed aid to navigation," respectively.

The positions of three of the four charted landmarks, and the position of the charted fixed aid to navigation have been previously determined by triangulation by the Bureau, and therefore no Form 567 is being submitted for them. The position of the remaining charted landmark has been redetermined by radial intersection and is being submitted on Form 567 under the name, TOWER, STONE. This structure has also been selected for use as a recoverable topographic station.

Chatter 5/10 (1940)
34 LANDMARKS AND FIXED AIDS TO NAVIGATION: (Continued)

Two previously uncharted features have been recom-
mended for charting as landmarks by the Field Inspection
Sub-Party of 1941. The positions have been determined by
radial intersection and are being submitted on Form 567
under the names:

   TANK, GREY
   TOWER, OBSERVATION  See Ch. Letter 510-44

In addition to the above-mentioned features, the
position on Form 567 and description on Form 524 are being
submitted for one other previously uncharted landmark
recommended for charting by the Field Inspection Sub-Party
of 1941. The position of this feature is within the limits
of Survey No. 5739. However, it was not plotted on the Map
Drawing for that Survey at the time of compilation, and it
was later found feasible to establish the position on a
"dogear" attached to Map Drawing, Survey No. T-5740, by
radial intersection. The landmark is a radio station mast
that was built subsequent to the exposure date of the
latest available photographs, and its position was spotted
on single lens photograph No. GSF 7-82 by the Field In-
spection Sub-Party. The position, as determined and sub-
mitted on Form 567, is considered to be accurate within
10 meters. The name of the landmark is:

   RADIO MAST, W.O.C.B.  See Ch. Letter 510-44

35 HYDROGRAPHIC CONTROL:

Shown within the detail limits of the Map Drawing
are 90 Hydrographic Control Stations. Of these, 19 are
Recoverable Topographic Stations and the remaining 71
are temporary hydrographic stations. Four of the Re-
coverable Topographic Stations are also tidal bench marks.
The positions of all the stations have been determined by
radial intersection.

The positions of the Recoverable Topographic Stations
and temporary hydrographic stations have been shown on the
Map Drawing with $2^{\frac{1}{2}}$ mm. and $1^{\frac{1}{2}}$ mm. black acid ink circles
respectively. The tidal bench mark is identified on the Map
HYDROGRAPHIC CONTROL: (Continued)

Drawing by a black acid ink cross within a 2½ mm. black acid ink circle.

The numbers and descriptions of all temporary hydrographic stations, and the numbers and/or names of all Recoverable Topographic Stations, have been shown on the overlay sheet, and the note "Recoverable Topographic Station" has been added when applicable.

Form 524 is being submitted for the following 19 Recoverable Topographic Stations:

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Black-Topped White Chimney</td>
</tr>
<tr>
<td>15</td>
<td>Tower on Boathouse</td>
</tr>
<tr>
<td>22</td>
<td>Red Brick Chimney</td>
</tr>
<tr>
<td>630</td>
<td>Tall Red Chimney on House</td>
</tr>
<tr>
<td>631</td>
<td>West Gable, House</td>
</tr>
<tr>
<td>633</td>
<td>West Gable, Large House</td>
</tr>
<tr>
<td>637</td>
<td>Tower, Stone, Green Roof (Landmark)</td>
</tr>
<tr>
<td>641</td>
<td>East Gable, Tall White House</td>
</tr>
<tr>
<td>645</td>
<td>South Gable, House</td>
</tr>
<tr>
<td>669</td>
<td>Chimney on East Gable, House</td>
</tr>
<tr>
<td>675</td>
<td>Chimney, Center of Yellow House</td>
</tr>
<tr>
<td>677</td>
<td>Northeast Gable, Large House</td>
</tr>
<tr>
<td></td>
<td>Water Tank</td>
</tr>
<tr>
<td></td>
<td>Tidal Bench Mark No. 4 (1902), Hyannisport</td>
</tr>
<tr>
<td></td>
<td>Tidal Bench Mark No. 9 (1934), Hyannisport</td>
</tr>
<tr>
<td></td>
<td>Tidal Bench Mark No. 10 (1934), Hyannisport</td>
</tr>
<tr>
<td></td>
<td>Tidal Bench Mark No. 11 (1934), Hyannisport</td>
</tr>
<tr>
<td></td>
<td>Tower, Observation</td>
</tr>
<tr>
<td></td>
<td>Tank, Grey (Landmark)</td>
</tr>
</tbody>
</table>

For the reasons discussed under Item 34, "Landmarks and Aids to Navigation," foregoing, Form 524 is being submitted for the following Recoverable Topographic Station, the position of which is not within the detail limits of this Map Drawing:

RADIO MAST, W.O.C.B. (Landmark)

On the southern portion of Great Island are two temporary hydrographic stations for which the descriptions are not now
HYDROGRAPHIC CONTROL: (Continued)

available to the Compilation Office. These descriptions are probably on 9 lens Field Inspection Photograph No. 2396, which cannot be found at the Compilation Office, and according to the latest information, could not be located in the files of the Washington Office. It was possible to locate the positions of these two stations on the Map Drawing by radial intersection, since at some earlier date their positions had been identified on the photographs, and are shown. It is considered that the missing photograph may be found at a later date, and notes have been made on the overlay referring to the photograph for the descriptions of the stations.

LANDING FIELDS AND AERONAUTICAL AIDS:

One landing field, Hyannis Airport, located on the northern outskirts of Hyannis, is within the limits of this survey. The field inspection data mentions that the airport was under construction in June, 1941, but furnished no other detailed information. The limits of the airport have been detailed by office inspection of the most recent (Dec. 1938) available single lens photographs, and the boundary is shown with a dashed black acid ink line. Several buildings, presumably hangars or similar structures, on the eastern edge of the field, have been detailed as they appear on the same photographs. No runways are visible on the photographs. Presumably, they had not yet been constructed at the time the photographs were flown.

No recommendations concerning aeronautical aids were submitted by the Field Inspection Sub-Parties, and none appear on the Boston Sectional Aeronautical Chart. However, approximately 120 meters west of the field is a large traffic circle. Within the circle the name "HYANNIS" is laid out in letters large enough to be decipherable on the photographs. The character of the material composing the letters is not known. A large North arrow, and a circle enclosing the letter "H" with an arrow pointing toward the airport, both constructed in the same manner within the traffic circle, are also visible on the photographs. The markers have been detailed as completely as is feasible, and a descriptive note appears on the Map Drawing.
36 LANDING FIELDS AND AERONAUTICAL AIDS: (Continued)

It is considered probable that the above markers were purposely constructed so as to be visible from aircraft, and that they were intended as guides to aeronautical navigation. Because of their proximity to the airport, it may well be that they would not be considered as aeronautical aids in the sense of being suitable for charting purposes.

For the purpose of furnishing an approximate geographic position of the markers, it may be mentioned that within the same traffic circle, approximately in the center of the marker layout, is located Massachusetts Geodetic Survey traverse station M 28 PL, the geographic position of which is listed as \( X = 931,210.81; Y = 244,689.46 \) (Massachusetts State Grid).

37 JUNCTIONS:

To the North - No contemporary survey adjoins this Survey.

To the East - Satisfactory junction of shoreline and interior detailed planimetry was made with Map Drawing, Survey No. T-5739.

To the South - Survey bounded by Nantucket Sound.

To the West - Satisfactory junction of shoreline and interior detailed planimetry was made with Map Drawing, Survey No. T-5741 as far north as Latitude 41° 39', the northern limit of that survey. North of Latitude 41° 39' there is no contemporary adjoining survey.

A power line which has been shown on this Map Drawing, and which crosses the junction with Map Drawing, Survey No. T-5741 near the south shore of Joshua Pond, does not appear on the latter Map Drawing.

38 RECOMMENDATIONS FOR FUTURE SURVEYS:

The planimetric features shown on the Map Drawing are those which appear on the latest available photographs of December, 1938, supplemented by the field inspection data,
38 RECOMMENDATIONS FOR FUTURE SURVEYS: (Continued)

the most recent of which were compiled in the summer of 1941.
A field review of the Map Drawing is recommended in order to
determine whether or not supplemental surveys should be made
for revision purposes.

39 BRIDGES OVER NAVIGABLE WATERS:

All bridges, the images of which were visible on the
photographs, and the existence of which were verified by
the Field Inspection Sub-Parties, have been shown on the
Map Drawing, with the conventional symbol accompanied by
pertinent notes which are in accordance with the field
inspection data.

40 GEOGRAPHIC NAMES:

A complete geographic name investigation was made for
the area of this Map Drawing by the Field Inspection Sub-
Party of the summer season, 1941, Lieut. E. B. Lewey in
charge. The names appearing on the Map Drawing are in
accordance with the data obtained from that investigation,
and they have been compiled in two lists, disputed and un-
disputed, and submitted herein. List of approved names
attached.

41 ROAD AND STREET NAMES:

The road and street names appearing on this Map Drawing
were taken from the field inspection data, supplemented by
data from the sources listed as Reference 1 and Reference 2
under Item 29, foregoing.

42 COMPARISON WITH EXISTING U.S. COAST & GEODETIC SURVEY
TOPOGRAPHIC SURVEYS:

Survey No. T-1999, surveyed by D. B. Wainwright, 1890,
scale 1:10,000

Survey No. T-290, surveyed in 1846, scale 1:10,000

In general, the planimetry appearing on the above
surveys is in disagreement with that shown on the Map
Drawing. Map Drawing, Survey No. T-5740 supersedes
these surveys.
44 COMPARISON WITH EXISTING TOPOGRAPHIC QUADRANGLES:

Advance U. S. Geological Survey Quadrangle (7½' by 8'), Hyannis, Massachusetts, scale 1:24,000, topography in 1939.

In general, planimetry common to both surveys is in good agreement, with the following exceptions:

1. Several roads which appear on the Map Drawing do not appear on the quadrangle and vice versa.

2. More drainage appears on the quadrangle.

3. Egg Island, which has been shown on the Map Drawing in two parts, appears as a single island on the quadrangle.

4. The shoreline at either side of the entrance to East Bay is in disagreement.

45 COMPARISON WITH NAUTICAL CHARTS:

Chart No. 249, scale 1:20,000, published at Washington, D. C., September 1938, corrected to October 24, 1938.

From visual inspection, the following disagreements are apparent:

1. The shape of a large wharf which appears on the Map Drawing at approximate Lat. 41° 38', Long. 70° 17.4', is in disagreement with the shape of the same structure as it appears on the chart.

2. The shape and size of Egg Island is in disagreement with the same feature as it appears on the chart. It has been subjected to erosion and separated into two smaller islands. This area is described by the field inspection data as being subject to storm-made changes.

3. Approximately one mile of the track of the Boston Division of the New York, New Haven and Hartford Railroad south of Hyannis has been abandoned but still appears on the chart.
45 COMPARISON WITH NAUTICAL CHARTS: (Continued)

4. Many roads shown on the Map Drawing do not appear on the chart. In general, roads in common are in disagreement.

5. The configuration of Dunbar Point and the mouth of the inlet at Squaw Island have been changed by erosion. These areas are described by the field inspection data as being subject to storm-made changes.

6. No wreck appears on the chart adjacent to the large wharf at Hyannisport.

7. The configurations of several small islets in a cove at approximate Lat. 41° 37.8', Long. 70° 15.1', have undergone changes.

8. A bridge at approximate Lat. 41° 38.8', Long. 70° 15.3' does not appear on the chart.


10. Several small streams shown on the Map Drawing do not appear on the chart.

11. Numerous offshore rocks south of Hyannisport and west of the breakwater have not been shown on the Map Drawing, because no field inspection data concerning them were available, and they could not be seen on the photographs. A similar condition exists in the offshore area around the south end of Point Gammon.

12. An offshore rock at approximate Lat. 41° 38', Long. 70° 19.8', does not appear on the Map Drawing for the same reasons as mentioned under No. 11, above.
Respectfully Submitted:
July 20, 1944

Carl W. A. Supp
Asst. Photogrammetric Engineer

Original Compilation in 1942 by:
Harry L. Spaulding
Photogrammetric Aid

Compilation Revised and Re-detailed by:
Carl W. A. Supp
   Asst. Photogrammetric Engineer
Edwin Whittemore, Jr.
   Engineering Draftsman
H. A. Gibson
   Photogrammetric Aid
Kerwin B. Roche
   Sr. Photogrammetric Aid

Under the Supervision and Review of:

Carl W. A. Supp
Asst. Photogrammetric Engineer

Approved and Forwarded:
July 21, 1944

Fred L. Peacock, Chief
Air Photographic Party No. 2
Baltimore, Maryland
LEWIS POND
Mary Dunns Pond
Thompson Pond (not Crooked Pond)
Yarmouth Camp Grounds
Flintrock Pond
Hyannis Park
Colonial Acres

Several names of minor features in Wessagusset Lake are old; if it is desired to use them.

Aunt Betts Pond
Bumps River
Centerville River
Craighville
Crystal Lake
Duck Pond (name shifted on map)
Dunbar Point
Dunns Pond
East Bay
Egg Island
Fawcett Pond
Great Island
Harbor Bluff
Hickies Pond
Coleman Pond (just S. of North Pond)
Hickins Neck (apply as on "Hyannis"
Hyannis
Hyannis Harbor
Hyannis Point
Lewis Bay

Little Sandy Pond
Long Beach
Long Point
Long Pond
Lumbert Pond
Nantucket Sound
Neck Pond
North Pond
Osterville
Osterville Landing
Osterville Point (apply on nautical chart 258)
Point Gammon
Scudder Bay
Shallow Pond
Squaw Island
West Yarmouth
Wianno
Wianno Beach
Snows Creek
Mill Creek
Uncle Roberts Cove
Pine Island Creek
Hyannis Airport
Englewood
Centerville
Hyannisport
West Hyannisport
Craighville Beach
Lake Elizabeth
Hathaway Ponds
Schoolhouse Pond
Simmons Pond
Hyannisport Golf Club
Mill Pond
Dogfish Bar
Jabinettes Pond

State Nos. 28, 182
See marked copies of U.S.G.S. "Dennis", "Hyannis", and "Coltuit", 7½' quadrangles.

Names preceded by • are approved 7/1/44

Lamson Pond (crooked Pond)?
GEOGRAPHIC NAMES

Disputed

Big Sandy Pond (not on this sheet)

/ Centerville Harbor

/ Hinckley Pond
/ Horse Pond
/ Hyannis Port
/ Joshua Pond
/ Lower Gate Pond
/ Micah Pond

/ Nequaqueat Lake (U.S.G.S. Decision 1942)

Flax Pond

(Centerville Harbor
New Harbor

Hinckleys Pond
Big Sandy Pond

Hyannisport
Joshua Pond

Upper Gate Pond
Micahs Pond

Chequaquet Lake
Great Pond
Great Nine Mile Pond

Names underlined in red approved
by L. Heck on 7/9/46
GEOGRAPHIC NAMES

Not shown on Map Drawing

The following Geographic Names have not been shown on the Map Drawing:

Bearse Rock
Channel Rock
Dead Neck Rock
Fiddle Head Rock
Gannet Ledge
Gannet Rocks
Gardiners Rock
\Great Rock
Gazelle Rock
Halftide Rock
Middle Ledge
S W Rock

The above-mentioned Geographic Names pertain to features within the area of this survey for which no field inspection data were submitted, and the images of which could not be seen on the photographs. The names were therefore not shown on the Map Drawing.
Division of Photogrammetry
Review Report of
Planimetric Map Manuscript T-5740

Subject numbers not used in this review report have been adequately covered in other parts of the descriptive report.

26 Control

Thirty-eight horizontal control stations, consisting of one U.S. Coast and Geodetic Survey triangulation station and thirty-seven Massachusetts Geodetic Survey traverse stations, have been plotted by the reviewer. These control stations have been listed under subject number 26 in the descriptive report.

27 Radial Plot

A small area at approximately the north central part of the map manuscript was found to exceed the limits of satisfactory accuracy. Three control stations in this area, not used in the second running of the radial plot, were used by the reviewer in determining the position of planimetric detail. This area is now, within the limits of map accuracy standards for the project.

28 Detailing

Numerous trails were reclassified as double dashed roads by the reviewer.

The field inspection data concerning the power line north of Hyannis Airport was incomplete. The power line, as now shown, was determined from an office interpretation of the photographs.

Corrections and additions to the map manuscript have been shown in red ink.

43 Comparison with Previous Surveys.

| T-290  | 1:10,000  | 1856-65 |
| T-318  | 1:10,000  | 1856    |
| T-1998 | 1:10,000  | 1890-91 |
| T-1999 | 1:10,000  | 1890-91 |

These surveys are superseded by T-5740 in all common areas, except for contours.

45 Comparison with Nautical Charts

<table>
<thead>
<tr>
<th>Chart No.</th>
<th>1:20,000</th>
<th>1942</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chart No. 258</td>
<td>1:20,000</td>
<td>1942</td>
</tr>
<tr>
<td>Chart No. 259</td>
<td>1:20,000</td>
<td>1944</td>
</tr>
<tr>
<td>Chart No. 1208</td>
<td>1:80,000</td>
<td>1942</td>
</tr>
<tr>
<td>Chart No. 1209</td>
<td>1:80,000</td>
<td>1943</td>
</tr>
</tbody>
</table>

51 Application to Nautical Charts

This map manuscript has been applied to Chart 258.
Reviewed by:
M. G. Misulia
M. G. Misulia 3/7/45 by K.M.

Approved by:
B.G. Jones 10/48
Technical Asst. to Chief, Division of Photogrammetry

Under the direction of:
S. U. Griffith
Chief, Review Section

Chief, Nautical Chart Branch Division of Charts

Chief, Div. of Photogrammetry Acting

Chief, Div. of Coastal Surveys
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<th>DATE</th>
<th>CHART</th>
<th>CARTOGRAPHER</th>
<th>REMARKS</th>
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<td>Before After Verification and Review</td>
</tr>
</tbody>
</table>

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.