5740

Diag'd. on Diag. Ch. No. 1209-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

# 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* Wianno Beach to West Yarmouth

194 4

CHIEF OF PARTY

Fred. L. Peacock

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DATE .....

B-1870-1 (1)++

5740

Applied to Chl. 258 (celluloid dwg. after review) by GR 8/2/45.

Form T-1

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:
Baltimore Photogrammetric Office

Chief of Party: L. W. Swanson
Fred. L. Peacock

Instructions dated (II III):
Sept. 28, 1938
Aug. 15, 1939

Copy filed in ~~Descriptive Report No. T-~~ (VI)
Division of Photogrammetry Office files

Completed survey received in office: 21 July, 1944

Reported to Nautical Chart Section:

Reviewed: 7 Mar. 1945 Applied to chart No. 258 Date: 8/2/45

Redrafting Completed: Feb. 1944

Registered: 7 June 1948 Published: Dec. 1944

Compilation Scale: 1:10,000 Published Scale: 1:10000

Scale Factor (III): None

Geographic Datum (III): N. A. 1927 Datum Plane (III) ~~Mean Sea Level~~ High Water

Reference Station (III): YARMOUTH SOUTH BASE, 1936, r.1938

Lat.: 41° 39' 22.978"(708.9m) Long.: 70° 16' 46.915"(1085.5m) ~~Unadjusted~~ Adjusted

State Plane Coordinates (VI): Mass. Mainland Zone

X = 933,481.14' Y = 241,568.53'

Military Grid Zone (VI)

PHOTOGRAPHS (III)

| Number | Date | Time | Scale | Stage of Tide |
|---|---|---|---|---|
| 2391 to 2401 | 7/16/38 | 11:00 A.M. | 1:10,000 | 1.1' above M.L.W. |
| *G.S.F. 7-73 to G.S.F. 7-83 | 12/14/38 | 10:50 A.M. | 1:10,000* | 0.1' above M.L.W. |
| *G.S.F. 5-51 to G.S.F. 5-58 | 11/21/38 | 11:00 A.M. | 1:10,000* | 2.7' above M.L.W. |
| G.S.F. 5-92 to G.S.F. 5-94 | 11/21/38 | 11:00 A.M. | 1:10,000* | 2.7' above M.L.W. |

*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 8¼"). 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, **date:** Nov.-Dec. 1938
I. M. Zeskind June 1940
E. B. Lewey July-Aug. 1941

**Field Edit by:** **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 **date:** Jan. 1939

" " " **checked by:** " " **date:** Jan. 1939

**Control plotted by:** L. W. Swanson **date:** Jan. 1939

**Control checked by:** L. M. Zeskind **date:** Jan. 1939

**Radial Plot by:** W. C. Russell **date:** Jan. 1939
Revised - L. W. Swanson, J. E. Deal, Jr. date: March 1942

**Detailed by:** H. L. Spaulding (shore line and interior-rough draft) **date:** May, June, 1942

Detail Revised by: C.W.A. Supp, E. Whittemore, Jr., H.A.Gibson, K.B.Roche **date:** 1944

**Reviewed in compilation office by:** C. W. A. Supp date: July 1944

**Elevations on Field Edit Sheet checked by:** **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, CAPE COD LAUNDRY, STACK, 1934, r.1938 (2)
YARMOUTH, SOUTH BASE, 1936, r.1938
HYANNIS, FEDERATED CHURCH SPIRE, 1934, r.1941 (12)
HYANNIS, BAPTIST CHURCH SPIRE, 1887, r.1934, r.1941 (13)
HINCKLES WATER TANK, 1934, r.1941
CENTERVILLE CHURCH, 1845, r.1934 (14)
BAKERS WATER TANK, 1934, r.1938
HYANNIS LIGHTHOUSE, 1875, r.1934, r.1941 *
ENGLEWOOD HOTEL WATER TANK, 1934, r.1941 (Landmark) (1)
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 Pt 34, p. 21 this Report.
M 28 PM, r.1941

Additional U.S.C.&G.S. Stations:
HYANNIS, 1835.

* Lantern Removed in 1929

(1) etc = numbers on pub. map.

26 CONTROL: (Continued)

✓M 28 QF, r.1940
✓M 28 QG, r.1941
✓M 28 QH, r.1941
✓M 28 QJ, r.1940
✓M 28 QKA, 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
✓110 A, r.1938
✓110 B. r.1938
✓110 D, r.1941
✓124 A, r.1938
✓124 J, r.1938
92 V, r.1941

Additional M.G.S. traverse stations:

| | | |
|---|---|---|
| 110C | | |
| 113A | M 28 PE | M 28 QU |
| 113B | M 28 PN (3) | M 28 QV |
| 113C | M 28 PP | Bound "B" (7) |
| 113D | M 28 PQ | Bound "C" (8) |
| 116A | M 28 PR | Bound "D" (9) |
| 116B | M 28 QA (5) | Bound "E" (10) |
| 124B | M 28 QB (6) | |
| 124C | M 28 QCA | Plotted by reviewer |
| 124D | M 28 QD | |
| 124E | M 28 QE | |
| 124F | M 28 QK | |
| 124G | M 28 QQ | |
| 124H | M 28 QSA | |
| 124K | M 28 QT | |
| 124L | | |

(4) Barnstable-Yarmouth Town Line Road Stone

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

✓SHOOTFLYING TOWER, 1934, r.1938
✓OSTERVILLE CHURCH, 1846, r.1934, 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 degree 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 established by the radial plot in the northwestern portion of the survey were considered to be relatively weak. Contributing factors were the sparseness of control, rather inadequate 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 certain 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 coverage of the area of this survey than was afforded by the nine

27 RADIAL PLOT: (Continued)

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 24" 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

27 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.

28 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

28 DETAILING: (Continued)

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 overlapping 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 interpretation 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 photographs, 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 discussion 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 adequate, 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 related 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 accomplished 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

28 DETAILING: (Continued)

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

28 DETAILING: (Continued)

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. (dfl).

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

28 DETAILING: (Continued)

constructed subsequent to the date of the most recent photographs, has been detailed in the position fixed by field measurements.

Ponds - Characteristic 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 further 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 location of the abandoned roadbed has been shown with a dashed line and properly identified on the Map Drawing. Railroad buildings along the right-of-way are detailed and identified in accordance 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 identifying 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 notation "CL".

Power Lines - A number of power lines are located within this area, and have been detailed on the Map Drawing in the conventional 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 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

29 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.

Ch. Letter 510 (1949)

34 LANDMARKS AND FIXED AIDS TO NAVIGATION: (Continued)

Two previously uncharted features have been recommended 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 Inspection Sub-Party. The position, as determined and submitted 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 Recoverable 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

35 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:

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

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) Filed under 7-5739

On the southern portion of Great Island are two temporary hydrographic stations for which the descriptions are not now

35 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.

Pricked on vault copy from map manuscript & circled in blue

36 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 undisputed, and submitted herein. List of approved names attached. LH(3)14

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 ~~should~~ 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.

9. Numerous houses do 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

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

Carl W. A. Supp
Asst. Photogrammetric Engineer

Approved and Forwarded:
July 21, 1944

Fred. L. Peacock

Fred. L. Peacock, Chief
Air Photographic Party No. 2
Baltimore, Maryland

GEOGRAPHIC NAMES

Undisputed

- Aunt Betts Pond
- Bumps River
- Centerville River
- Craigville
- Crystal Lake
- Duck Pond (name shifted onquad)
- Dunbar Point
- Dunns Pond
- East Bay
- Egg Island
- Fawcett Pond
- Great Island
- Harbor Bluff
- ~~Hinckles Pond~~ Coleman Pond (just S. of North Pond)
- Huckins Neck (apply as on "Hyannis" quad.)
- 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 as on nautical chart 258 (quadrangle and)
- Phinney Bay
- Point Gammon
- Scudder Bay
- Shallow Pond
- Squaw Island
- West Yarmouth
- Wianno
- Wianno Beach

State Nos. 28,182

See marked copies of U.S.G.S. "Dennis", "Hyannis" and "Cotuit" 7½' quadrangles.

Names preceded by • are approved 7/9/46
L. Heck

Lamson Pond (Crooked Pond) ?

- Lewis Pond
- Mary Dunns Pond
- Lamson Pond (not Crooked Pond)
- Yarmouth Camp Grounds
- Flintrock Pond
- Hyannis Park
- Colonial Acres

Several names of minor features in Wequequet Lake are ok. if it is desired to use them.

- Snows Creek
- Mill Creek
- Uncle Roberts Cove
- Pine Island Creek
- Hyannis Airport
- Englewood
- Centerville
- Hyannisport
- West Hyannisport
- Craigville Beach
- Lake Elizabeth
- Hathaway Ponds
- Schoolhouse Pond
- Simmons Pond
- Hyannisport Golf Club
- Mill Pond
- Dogfish Bar
- Jabinettes Pond

GEOGRAPHIC NAMES

Disputed

| | |
|---|---|
| Big Sandy Pond (not on this sheet) | Flax Pond |
| Centerville Harbor | (Centreville Harbor<br>(New Harbor |
| Hinckley Pond | Hinckleys Pond |
| Horse Pond | Big Sandy Pond |
| Hyannis Port | Hyannisport |
| Joshua Pond | Joshuas Pond |
| Lower Gate Pond | Upper Gate Pond |
| Micah Pond | Micahs Pond |
| Wequaquet Lake (U.S.B.G.N. decision 1942) | (Chequaquet Lake<br>(Great Pond<br>(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

| | | |
|---|---|---|
| Chart No. 258 | 1:20,000 | 1942 |
| Chart No. 259 | 1:20,000 | 1944 |
| Chart No. 1208 | 1:80,000 | 1942 |
| Chart No. 1209 | 1:80,000 | 1943 |

51 Application to Nautical Charts

This map manuscript has been applied to Chart 258.

Reviewed by:

M. G. Misulia 3/7/45 by K.H.M.
M. G. Misulia

Under the direction of:

S. V. Griffith by K.H.M.
Chief, Review Section

Approved by:

B.B. Jones 10/48
Technical Asst. to Chief,
Division of Photogrammetry

S. B. Trenkle
Chief, Nautical Chart Branch
Division of Charts.

E. Jones 29 Oct 48
Acting
Chief, Div. of Photogrammetry

C K Green
Chief, Div. of Coastal Surveys

# NAUTICAL CHARTS BRANCH

SURVEY NO. T 5740

## Record of Application to Charts

| DATE | CHART | CARTOGRAPHER | REMARKS |
|---|---|---|---|
| 8/2/45 | 258 | G.R. | ~~Before~~ After Verification and Review Completely applied. |
| 2/7/50 | 1209 | GHE pen jtw | ~~Before~~ After Verification and Review Examined – not applied |
| 4/25/50 | 1208 | K.T. Heyman | ~~Before~~ After Verification and Review Examined – not applied. |
| 9/12/72 | 259 | O. Chapman | Before After Verification and Review no corr. superseded by T-12495 |
| 7-3-73 | 1209 | Oscar Chapman | ~~Before~~ After Verification and Review |
| | | | Before After Verification and Review |
| | | | Before After Verification and Review |
| | | | Before After Verification and Review |
| | | | Before After Verification and Review |
| | | | Before After Verification and Review |

M-2168-1

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.