5732

5732

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Planimetric Air Photographic
(Shoreline and Interior)

Field No. ..... *Office No.* T-5732

LOCALITY

State Massachusetts

General locality Cape Cod

Locality Truro

1944

CHIEF OF PARTY

Fred. L. Peacock

LIBRARY & ARCHIVES

DATE .....

8-1870-1 (1)++

applied to Chart drawing 580 Sept 21 1944 H.E.L.

Examined for ch 1208 - not applied W.J. Hegman 4/25/50

Form T-1

DATA RECORD

T-5732

Quadrangle (II): Provincetown, Mass.

Project No. (II): HT-227-C

Field Office: Air Photographic Party No. 2

Chief of Party: Fred. L. Peacock

Compilation Office: Baltimore Photogrammetric Office

Chief of Party: Fred. L. Peacock

Instructions dated (II III): September 28, 1938; August 15, 1939

Copy filed in Descriptive Report No. T- (VI)

Completed survey received in office: 7/21/44

Reported to Nautical Chart Section: 8/21/44

Reviewed: 2/10/45 **Applied to chart No.** **Date:**

Redrafting Completed: 3/17/45

Registered: 12/46 **Published:** 7/22/46

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): BALL (M.G.S.)-1937

Lat.: 42° 01' 02.027" (62.5 m) **Long.:** 70° 02' 13.372" (307.7m) **Adjusted** **Unadjusted**

State Plane Coordinates (VI):

X = 997,531.11 Y = 374,082.08

Military Grid Zone (VI)

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
GSF4-206 to GSF4-210, Incl. (Single lens)	11/21/38	10:20 a.m.	1:10,000	8.2' above M.L.W.
2428 to 2432, Incl.	7/16/38	12:23 p.m.	1:10,000	6.2' above M.L.W.
13539 to 13541, "	4/13/43	11:05 a.m.	1:10,000	2.0' above M.L.W.

Tide from (III): Predicted Tables for Boston, Mass., corrected to Pamet River, C.G. Station, Cape Cod.
Mean Range: 7.6' **Spring Range:** 8.8'

Camera: (Kind or source) U. S. Coast & Geodetic Survey nine lens camera (focal length 8½"). All negatives are on file in the Washington Office.

Field Inspection by: Lieut. Comdr. E. B. Lewey **date:** 1941

Field Edit by: **date:**

Date of Mean High Water Line Location (III): Date of photographs supplemented by field inspection data obtained in 1941.

No review of sheet

Projection and Grids ruled by (III) J. O'Neill **date:** 3/20/43

" " " **checked by:** J. O'Neill **date:** 3/20/43

Control plotted by: John P. Kubasco **date:** April 12 & 13, 1943

Control checked by: Charles C. Tropp **date:** 4/16/43

Radial Plot by: Donald M. Brant **date:** July, 1943
Relaid by: Harry R. Rudolph July, 1943

Detailed by: John M. Reinoldi **date:** 6/6 to 7/19/44

Reviewed in compilation office by: Albert C. Rauck **date:** 7/12 to 7/15/44

Elevations on Field Edit Sheet checked by: **date:**

STATISTICS (III)

Land Area (Sq. Statute Miles): 11

Shoreline (More than 200 meters to opposite shore): 11 Statute Miles

Shoreline (Less than 200 meters to opposite shore): None

Number of Recoverable Topographic Stations established: 6

Number of Temporary Hydrographic Stations located by radial plot: 30

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:

The Field Inspection Unit recovered and identified on the nine lens field photographs the following horizontal control stations.

Those falling within the limits of this Map Drawing are:

HIGH HEAD, 1933
NORTH RADIO TOWER, 1933
SOUTH RADIO TOWER, 1933
ALDRICH TOWER, FLAGPOLE, 1933
CAPE COD L.H., r. 1933, r. 1936
HIGHLAND COAST GUARD SIGNAL MAST, 1933
PROVINCETOWN PUMPING STATION, STACK, 1933
BALL,(M.G.S.) 1937
HIGH HEAD, COAST GUARD SIGNAL MAST, 1933
NORTH TRURO, COLD STORAGE, PLANT STACK, 1933
BALLS HOUSE, FLAGPOLE, 1933
153 A (M.G.S.), r. 1941
CORN HILL 2, 1933

Those falling just outside the limits of the Map Drawing are:

TRURO TOWNHALL, 1887, r. 1941
TRURO (M.G.S.), 1937, r. 1941
TRURO CONGREGATIONAL CHURCH SPIRE 1933, r. 1941
108-A (M.G.S.) r. 1941

All of the above horizontal control stations were used for the establishment of photograph centers, secondary control points, detail points, recoverable topographic stations, and temporary hydrographic stations.

27 RADIAL PLOT:

Two individual plots were laid for the area of Survey No. T-5732. The first plot was laid by the usual radial method. No templets were used, the photographs being oriented directly under the Map Drawing Projection. The second plot was laid using celluloid templets, which were oriented on top of the Base Sheet. The reason for this procedure is to be discussed under "Results" in this report.

The photographs, Map Drawing Projection, and the Base Sheet were prepared in the usual manner.

The area of the Survey was covered by three flight strips, one of nine lens photographs (unmounted) taken on July 16, 1938, one of single lens photographs (unmounted) taken on Nov. 21, 1938, and one of nine lens photographs (unmounted) taken on April 13, 1943. The first mentioned flight strip was taken before the occurrence of a hurricane, which struck the Cape Cod area at 4:30 P.M. on September 21, 1938. The other two flight strips were taken after the occurrence of the hurricane. The single lens photographs were originally taken for the United States Geological Survey, the scale being 1:24,000. The Field Inspection Sub-Party was furnished a set of the single lens photographs to the original scale. The field inspection data for a small portion of the Survey were recorded on the single lens photographs, while the field inspection data for the remaining and greater portion of the Survey were recorded on the nine lens photographs taken on July 16, 1938. No data were recorded on the photographs taken on April 13, 1943, because all of the field inspection was made before this date. The Baltimore Compilation Office was furnished a set of the single lens photographs, enlarged to a scale 1:10,000, as well as the two flight strips of nine lens photographs to the same scale.

For the most part, the horizontal control within the area of the Survey consists of U. S. Coast and Geodetic

Survey Triangulation Stations. In addition to these, there were a few Massachusetts Geodetic Survey Traverse Stations. The identification of the control by the Field Inspection Sub-Party was adequate.

RESULTS

The results obtained after the first plot was laid, were unsatisfactory. Several of the photographs were found to contain differential distortion. In accordance with instructions furnished by the Washington Office, celluloid templets were made of the photographs, taking into account the correction for distortion. The second plot was then laid, the templets being oriented on top of the Base Sheet. Satisfactory results were obtained. The positions of the secondary points and the photograph centers (principal points) were transferred to the Map Drawing Projection by the method of matching common grid lines and pricking through.

The number and distribution of the horizontal control stations were adequate to control the radial plot. All of these stations were "held to" satisfactorily. The positions of common secondary points previously determined by radial plots laid for the areas of Map Drawings, Surveys Nos. T-5731 to the North, and T-5733 to the South, were satisfactorily resected.

Most of the photographs were slightly tilted. However, it is believed that the angle of tilt does not exceed 2½ degrees on any of the photographs. The photograph centers, therefore, were used as the chief ray centers for all radials.

The number of photographs and the photographic coverage were adequate. The flight strips, however, were not well distributed, probably due to the fact that the area was photographed by different bureaus.

The positions of the selected secondary points considered relatively strong have been shown on the

glossy side of the Map Drawing with small double purple ink circles, while the relatively weak positions of such points have been shown with small double green ink circles. The positions of the photograph centers (principal points), as determined by the radial plot, have been shown on the glossy side of the Map Drawing with large double purple ink circles. The positions of all the secondary points and the photograph centers are believed to be within the limits of satisfactory accuracy.

REMARKS

The remarks set forth at the end of side heading No. 27 in the Descriptive Report for Map Drawing, Survey No. T-5734, previously submitted, also pertain to the Map Drawing for Survey No. T-5732.

It is recommended that the compiler of the Map Drawing for Survey No. T-5732 orient the photographs by chambers while radially plotting the positions of minor detail points, temporary hydrographic stations, and Recoverable Topographic Stations.

Respectfully submitted:
July 30, 1943

Harry R. Rudolph
Harry R. Rudolph
Senior Photogrammetric Aid

Supervised by:

Walter E. Schmidt
Walter E. Schmidt
Asst. Photogrammetric Engineer

28 DETAILING:

Adequate field inspection data, to accomplish this detailing, were furnished the Compilation Office by the Field Inspection Unit.

The number of nine lens photographs covering the area of this Map Drawing was sufficient for detailing. The single lens photographs were used for detailing in some areas because the scale of these photographs and of the Map Drawing were in very good agreement. The scale of the nine lens photographs and of the Map Drawing were in fair agreement.

Detail points of lesser strength have been shown by green ink circles

Detail points have been shown on the reverse side of the Map Drawing with blue ink circles. Temporary hydrographic stations, landmarks, and recoverable topographic stations were radially plotted and have been shown on the Map Drawing with 2:5 m.m. circles in black acid ink. Their descriptions have been lettered adjacent to their respective circle.

All minor drainage has been delineated by stereoscopic examination of the office photographs.

All buildings, roads, fences, etc., which were visible on the photographs have been shown on the Map Drawing.

Bluffs adjacent to the shoreline have been shown by hachures or the conventional bluff symbol.

29 SUPPLEMENTAL DATA:

No supplemental data was furnished the Compilation Office for use in detailing this Map Drawing.

30 MEAN HIGH-WATER LINE:

The Mean High-Water Line of Cape Cod which lies within the limits of this Map Drawing was shown in two colors, black and red. The Mean High-Water Line shown in red was detailed from the nine lens photographs taken on July 16, 1938, before the occurrence of the hurricane which struck Cape Cod on September 21, 1938. The Mean High-Water Line shown in black was detailed from the nine lens photographs taken on April 13, 1943, and from the single lens photographs taken in November 1938, after the occurrence of the hurricane, without benefit of field inspection. This shoreline is assumed to be more nearly correct.

There was considerable change in the Coast Line on the Atlantic Ocean side of Cape Cod, due to the hurricane.

This shoreline was copied from the T.D. photos. The Field Inspection was made in 1941 and the shoreline was revised to that date.

See reverse at back

31 LOW-WATER AND SHOAL LINES:

No Mean Low-Water Line has been shown on this Map Drawing and none was indicated by field inspection data or was visible on the nine lens photographs.

An office interpretation of an approximate shoal line along the west shore of Cape Cod in Cape Cod Bay, has been shown with a light-weight dash line in black acid ink.

32 DETAILS OFFSHORE FROM THE MEAN HIGH-WATER LINE:

A note indicating the existence of numerous fish traps along the west shore of Cape Cod, just south of NORTH TRURO, is shown on the Map Drawing. No other offshore details were indicated by field inspection data or were visible on the nine lens photographs.

33 WHARVES AND SHORELINE STRUCTURES:

On the west shore of Cape Cod in Cape Cod Bay at approximate latitude 42° 02.85' there has been shown on this Map Drawing, a groin and a bulkhead.

There are no other shoreline structures indicated by field inspection data, or visible on the nine lens photographs.

34 LANDMARKS AND AIDS TO NAVIGATION:

The Field Inspection Unit recovered the following eight landmarks, which are charted, namely:

ALDRICH TOWER FLAGPOLE, 1933 (Also triangulation station)
PROVINCETOWN PUMPING STATION STACK, 1933 (also triangulation station)
STACK, NORTH TRURO, 1933 (also triangulation station)
NORTH RADIC TOWER, 1933 (also triangulation station)
SOUTH RADIO TOWER, 1933 (also triangulation station)
BALLS HOUSE FLAGPOLE, 1933 (also triangulation station)
CAPE COD RADIOBEACONN
WATER TANK, dark wooden

* C L 538 1942

All of the above landmarks, except those which are triangulation stations, are shown on this Map Drawing with a 2.5 m.m. black acid ink circle.

The Field Inspection Unit recommended that the following stations be deleted as landmarks, namely:

SIGNAL MAST (this is High Head Coast Guard Signal Mast, 1933)
SIGNAL MAST (Pamet River C.G.)

* C.L. = Chart Letter

34 LANDMARKS AND AIDS TO NAVIGATION. (Cont'd.)

Form 567 is being submitted for the two landmarks recommended to be deleted.

Form 567 is also being submitted for the landmark WATER TANK, dark wooden (new position) for charting.

The following fixed aids to navigation were identified on the photographs by the Field Inspection Unit are shown on this Map Drawing. They are:

* CL 510 1944 CAPE COD LIGHTHOUSE, 1877, r. 1933, 1936 (also triangulation station)

CAPE COD RADIOBEACON

Form 567 is being submitted for CAPE COD RADIOBEACON.

35 HYDROGRAPHIC CONTROL:

The Compilation Office was furnished the identification of 30 temporary hydrographic stations and 6 recoverable topographic stations. All the above stations were identified on the 1:10,000 field photographs by numbers, and their descriptions were listed in Sketch Books, Form No. 274, by corresponding numbers. All of the descriptions have been duplicated on the field photographs. These stations were transferred to the 1:10,000 office photographs and radially plotted on the Map Drawing. In addition the Field Inspection Unit recovered six triangulation stations (all of which are landmarks already charted) which may be used as partial hydrographic control.

The descriptions of the hydrographic control stations have been noted directly on the Map Drawing adjacent to their positions.

Forms 524 are being submitted for the six Recoverable Topographic Stations. They are:

WATER TANK (Landmark)
316 CAPE COD RADIOBEACON (Fixed Aid to Navigation)
323 BRK. CHIMNEY N.W. GABLE OF HOUSE
341 OUTER GABLE C.G. RELIEFSTATION
344 OUTER GABLE C.G. BOATHOUSE
T.B.M. No. 2, 1933

36 LANDING FIELDS AND AERONAUTICAL AIDS:

One Aeronautical aid, namely, CAPE COD RADIOBEACON, has been recovered by the Field Inspection Unit and radially plotted on the Map Drawing.

37 JUNCTIONS:

The junction to the west with Map Drawing, Survey No. T-5731 is in excellent agreement.

The junction to the south with Map Drawing, Survey No. T-5733 is in excellent agreement.

To the east is the Atlantic Ocean and to the west is Cape Cod Bay.

38 GEOGRAPHIC NAMES:

The results of a geographic name investigation have been furnished the Compilation Office on the U. S. Geological Survey, Provincetown, Mass. 15 minute quadrangle. Only the undisputed names have been shown on the Map Drawing. A list of undisputed, disputed, and recommended names is attached to this Descriptive Report.

39 HORIZONTAL ACCURACY:

The probable error in the relative positions of detail points, the Mean High-Water Line, and well defined objects is believed to be within the limits of satisfactory accuracy.

40 RECOMMENDATIONS FOR FUTURE SURVEYS:

The rough draft, Map Drawing, Survey No. T-5732, is believed to be complete in all details of importance for shoreline and no other Surveys are deemed of immediate necessity. However, this is a changeable area and some revisions will be necessary at intervals.

44 COMPARISON WITH EXISTING TOPOGRAPHIC QUADRANGLES:

Comparison was made with the United States Geological Survey, Provincetown, Mass. 15 minute Quadrangle, edition of 1889, reprinted 1934, scale 1:62,500.

Due to scale difference only, a visual comparison could conveniently be made. ~~The following difference was noted:~~

~~At latitude 42° 00' and longitude 70° 01.5' a marsh area is shown on the Quadrangle.~~

~~From office examination of the photographs, this is interpreted as a pond, and is shown as such on the Map Drawing.~~ Area mentioned is a cranberry bog - it has been shown by the conventional marsh symbol

Common topographic features seem to be in generally fair agreement.

(Also marsh on 1:31,680 North Truro Quad USGS 1944.

45 COMPARISON WITH NAUTICAL CHARTS:

Chart No. 50, published at Washington, D. C., March 1944 and corrected to April 13, 1944, Scale 1:210,000.

Due to scale difference, a general comparison only could conveniently be made, which was found to be in generally fair agreement.

Chart No. 580, published at Washington, D. C., April 1934 and corrected to June 6, 1941, Scale 1:20,000.

The following differences were noted:

From latitude 42° 02' to latitude 42° 03' the shoreline along the Atlantic Coast has receded a maximum of 140 meters.

From latitude 40° 03' 06" to latitude 42° 03' 30" the shoreline along the Atlantic Coast has built up a maximum of 80 meters.

From latitude 42° 03' 42" to latitude 42° 03' 54" the shoreline along the Atlantic Coast has receded a maximum of 50 meters.

At latitude 42° 04' the shoreline along the Atlantic Coast has built up a maximum of 50 meters.

The shoreline along Cape Cod Bay was found to be in good agreement.

Common interior topographic features are in good agreement.

Chart No. 1107, published at Washington, D. C., and corrected to June 1941, Scale 1:360,000.

Due to scale difference, a general comparison only could conveniently be made. The shoreline appeared to be in generally fair agreement.

Chart No. 1203, published at Washington, D. C., November 1936, and corrected to May 17, 1940, Scale 1:80,000.

Due to scale difference, a general comparison only could conveniently be made. In general, the shoreline and common topographic features seemed to be in fair agreement.

It is recommended that the planimetry shown on the Map Drawing supercede that which now appears in the corresponding areas on the charts.

Respectfully submitted:
July 20, 1944

John M. Reinoldi
John M. Reinoldi
Sr. Photogrammetric Aid

Compilation Reviewed by:

Albert C. Rauck, Jr.
Albert C. Rauck, Jr.,
Sr. Photogrammetric Aid

Compilation and Descriptive Report Supervised by:

Joseph Steinberg
Joseph Steinberg
Asst. Photogrammetric Engineer

Approved and Forwarded:
July 21, 1944

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

GEOGRAPHIC NAMES

Recommended	Disputed
Cape Cod Light,	Highland Light
Pamet River C.G.,	(Pamet River C.G.No.37 (Pamet River L.S.S.
Pilgrim Heights,	High Head

GEOGRAPHIC NAMES

Undisputed

Atlantic Ocean.

Cape Cod.

Cape Cod Bay.

Corn Hill.

High Head ~~Life Saving~~ C. G. Station (Abd.)

Highland ~~Life Saving~~ C. G. Station.

North Truro.

Smalls Hill.

Truro

Pond Village.

GEOGRAPHIC NAMES

Survey No. T-5732

	Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
✓	Atlantic Ocean	✓									1
✓	Massachusetts										2
✓	Cape Cod	✓									3
✓	Cape Cod Bay	✓									4
✓	U.S. No. 6										5
✓	Truro	✓ ("town" or township)									6
											7
✓	Corn Hill	✓				420700					8
✓	Little Pamet River	✓				"					9
✓	Pamet River Coast Guard Station					"					10
✓	Smalls Hill	✓				"					11
✓	North Truro	✓ (village)				"					12
✓	Village Pond	✓				"					13
✓	Pond Village	✓				"					14
✓	Cape Cod Lighthouse	✓				"					15
✓	Highland Coast Guard Station	✓				"					16
✓	High Head Coast Guard Station	(Abd)				"					17
✓	Salt Meadow	✓				"					18
✓	Pilgrim Heights	✓ (settlement: apply near buildings, to Southward)				420701					19
✓	Moon Pond	✓				420701					20
											21
	New York, New Haven & Hartford R.R.	✓									22
											23
											24
	Great Swamp										25
	Truro Central School										26
											27

Approved
L. Heck 10/11/45

M 234

Division of Photogrammetry

Review of Planimetric Map T-5732

Radial Plot.-

In order to test the strength of the radial plot several points were cut in at various positions throughout the compilation. The photographs were oriented chamber by chamber as suggested in paragraph No. 27 of the descriptive report and excellent intersections were obtained. All positions held during this test.

Field Inspection and Detailing.-

All additions made to the detailing during review have been shown on the map drawing in red acetate ink.

Some small areas shown as ponds by the field inspection were ascertained to be cranberry bogs and have been shown as marsh by the reviewer.

The compiler detailed only the roads classified during the field inspection. Additional roads have been shown and a majority of the road classifications have been changed from S.D.L. to D.D.L.

Mean-High Water Line.-

No specific date can be given to the mean-high water line on this map.

Mean-high water line as shown on printed copies and on the registered copy is:

(1) On the ocean side the mean-high water line is approximately as of the summer of 1941. It was compiled from photographs taken in November 1938 (after the September hurricane) and field inspected in 1941. The 1938 field inspection photographs were supplemented to some extent with the 1943 photographs, but most of the shoreline depends on the 1941 field inspection.

(2) The mean-high water line on the Cape Cod shore was compiled as stated under 1 above, but not many changes were evident in comparing the several sets of photographs.

(3) The mean-high water line discussed in 1 and 2 above is shown on the manuscript in black ink.

The map manuscript also shows another mean-high water line in red ink. The note on the manuscript and the descriptive report are inconclusive regarding the date of this line and it is of little or no value. It apparently was compiled from the nine-lens photographs of July 1938 prior to the hurricane, but appears to have been revised to some extent from field inspection notes and the date is inconclusive.

Comparison with Previous Topographic Surveys.-

T-5732 supersedes the following older surveys over the common area:

Nos:	Date:	Scale:
260	1848	1:10,000
260a	1909	1:10,000
260b	1909	1:10,000
616	1847, 1857	1:10,000
616a	1909	1:10,000
616b	1909	1:10,000
1982	1889	1:10,000
6033	1933	1:20,000
6034	1933	1:20,000

Comparison with Nautical Charts.-

T-5732 was applied to Chart 580 in September 1944 prior to this review. No changes have been made during the review of consequence to the chart.

However, with reference to the preceding discussion about the mean-high water line, it is not known which line was applied to the chart.

Reviewed by Harold R. Brooks under the direction of Ralph Moore Berry - February 1945.

Review report prepared by B. G. Jones from reviewer's notes - December 1946.

APPROVED BY:

B.G. Jones 12/4/6
Tech. Assistant to the
Chief, Div. of Photogrammetry

H.R. Edmonston
Chief, Nautical Chart Branch
Division of Charts

K.T. Adams
Chief, Div. of Photogrammetry

E.J. Green
Chief, Div. of Coastal Surveys