DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

State: New Jersey

DESCRIPTIVE REPORT

LOCALITY
Intracoastal Waterway
Atlantic Co., N. J.
Great Bay to Grassy Bay

CHIEF OF PARTY
Benjamin H. Rigg
John A. Bond
TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. T

REGISTER NO. 76501

State New Jersey

General locality Atlantic County, Intracoastal Waterway
Locality Great Bay In Grassy Bay

Scale 1:10,000 Date of survey July, 1935 June 1936

Vessel Party No. 19 * MIKAVE

Chief of party B. H. Rigg * John A. Bond

Surveyed by A. S. Hall A. M. Rogers E. L. Jones

Inked by T. B. Hutting E. L. Jones

Heights in feet above to ground to tops of trees
Contour, Approximate contour, Form line interval feet
Instructions dated May 16, 1935

Remarks: No hydrography done in 1935

Hydrography completed in 1936 by MIKAVE
DESCRIPTIVE REPORT TO ACCOMPANY
GRAPHIC CONTROL SHEET T

OUTLINE

1. INSTRUCTIONS.
2. PURPOSE.
3. LIMITS OF SHEET.
4. DESCRIPTION OF TERRITORY
5. CONTROL.
6. SURVEYING METHODS USED.
7. PERMANENT STATIONS ESTABLISHED.
8. AIDS TO NAVIGATION AND LANDMARKS.
9. TOPOGRAPHIC FEATURES LOCATED FOR USE IN AIR PHOTO COMPILATION.
10. GEOGRAPHIC NAMES.
11. Supplemental Report (1936 work)
INSTRUCTIONS

The survey was carried out under instructions dated May 16, 1935.

PURPOSE

The purpose of the survey was to locate control for hydrography, to establish permanent stations, to locate aids to navigation and to check landmarks, and to locate topographic features for use in the air photo compilation.

LIMITS OF SHEET

The territory included by sheet "T" extends from Lat. 39° 26.5' at Black Point on the New Jersey Inland Waterway northeastward to Lat. 39° 29', Long. 74° 21' at Mile Thorofare south of Little Egg Inlet. It extends on the northwest to Lat. 39° 31', Long. 74° 24.5' at Mott Creek on south shore of Great Bay. It extends southwestward to Lat. 39° 29', Long. 74° 27.0'.

DESCRIPTION OF TERRITORY

Sheet "T" includes the southern edge of Great Bay, the New Jersey Inland Waterway from Main Marsh to Black Point, and the meadow extending south and west.

CONTROL

The following triangulation stations were used as control on sheet "T":

<table>
<thead>
<tr>
<th>Station</th>
<th>Survey</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEEDS POINT</td>
<td>Meany</td>
<td>1867</td>
</tr>
<tr>
<td>KNOLL</td>
<td>Woodward</td>
<td>1931</td>
</tr>
<tr>
<td>BIG SHAD C &amp; N</td>
<td>Rigg</td>
<td>1935</td>
</tr>
<tr>
<td>OYSTER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SURVEYING METHODS USED

The stations on sheet "T" were located by graphic triangulation. Set-ups were made first on triangulation stations MAIN, OYSTER, and BIG SHAD. The
survey was completed from set-ups on signals located by cuts from those stations. The triangulation control was adequate. No special methods were necessary. Patches of shoreline were located in conjunction with the other work to serve as a check between the topography and the air photo compilation.

PERMANENT STATIONS ESTABLISHED

A. Labeled stations. -- Station DOT on the south shore of Great Bay was located, designated by the letter "D" on the graphic control sheet, and described on form 524. The same applies to station HAM at the west edge of Hammock Cove south of Great Bay.

B. Natural Objects located and described. -- None

C. Bolstad Fourth Order Stations. -- All of Bolstad's "4th order" stations (located for Air-Photo Compilation Control) falling within the limits of the graphical control sheets were plotted. Wherever possible, they were checked with the planetable. In the few cases where discrepancies occurred, they were adjusted by re-checks of the computations, or of the topography, or both. The final position as shown on the sheet and the card, is to be considered correct.

Following is a list of stations falling on sheet "T":

<table>
<thead>
<tr>
<th>Station</th>
<th>Whether or Not Checked</th>
<th>Amt. of Discrep.</th>
<th>Remarks</th>
</tr>
</thead>
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<tr>
<td>MAIN HARSH C. N.</td>
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<td></td>
</tr>
<tr>
<td>CHY. GREAT THORO.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. GAB. WEIGAN</td>
<td>Not Checked</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FIRST PRES. CHURCH LEEDS PT.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AIDS TO NAVIGATION AND LANDMARKS

For a discussion of aids to navigation see the corresponding paragraph in the report accompanying sheet "H". All lighted aids to navigation were described and submitted on form 567.
The present charts are correct insofar as landmarks are concerned, for the area covered by sheet "F".

**TOPOGRAPHIC FEATURES LOCATED FOR USE IN THE AIR PHOTO COMPILATION**

Patches of shoreline were rodded in along the southern edge of Great Bay and at Hammock Cove for comparison with the air photo compilation. No adjustment was necessary.

**GEOGRAPHIC NAMES**

See air photo compilation for details.

Respectfully submitted,

Addison S. Hall,
Surveyor

Forwarded by,

Lt. Benjamin H. Riggs,
Chief of Party
### Position Computation, Third-Order Triangulation

<table>
<thead>
<tr>
<th>α</th>
<th>2</th>
<th>to 3</th>
<th>3</th>
<th>to 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2₄/₂</td>
<td>&amp;</td>
<td></td>
<td>3₄/₂</td>
<td></td>
</tr>
<tr>
<td>α</td>
<td>2</td>
<td>to 1</td>
<td>MAIN MARSH C &amp; N</td>
<td>302</td>
</tr>
<tr>
<td>Δα</td>
<td></td>
<td></td>
<td></td>
<td>04.9</td>
</tr>
<tr>
<td>Δα</td>
<td>180</td>
<td>00</td>
<td>00.0</td>
<td></td>
</tr>
<tr>
<td>α'</td>
<td>1</td>
<td>to 3</td>
<td>MAIN MARSH C &amp; N</td>
<td>302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>180</td>
</tr>
</tbody>
</table>

#### First Angle of Triangle

| φ     | 39.29  | 02.156  | 5 MAIN | λ     | 74 | 22  | 46.518 |
| Δφ    | –03.755 | 217.215 M |        | Δλ    | –07.690 |
| φ'    | 39.28  | 58.101 | 1      | λ'    | 74 | 22  | 38.628 |

<table>
<thead>
<tr>
<th>1 logarithms</th>
<th>Values in seconds</th>
<th>( \frac{1}{2} (\phi + \phi') )</th>
<th>39</th>
<th>29</th>
<th>00.278</th>
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</thead>
<tbody>
<tr>
<td>Cos α</td>
<td>9.7267725 (19.3)</td>
<td>Logarithms</td>
<td>s</td>
<td>2.3368688</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>3.5108209</td>
<td>Values in seconds</td>
<td>Δα</td>
<td>0.8899200</td>
<td>7.6898</td>
</tr>
<tr>
<td>0.5715532</td>
<td>4.67378</td>
<td></td>
<td>2d term</td>
<td>+</td>
<td>Sin α</td>
</tr>
<tr>
<td>9.55188</td>
<td>1.32042</td>
<td></td>
<td>2d term</td>
<td>+</td>
<td>Sin ( \phi + \phi' )</td>
</tr>
<tr>
<td>C</td>
<td>5.8692</td>
<td>1.1191</td>
<td>–Δα</td>
<td>0.6892779</td>
<td>4.689</td>
</tr>
<tr>
<td>5.8692</td>
<td>2.376232</td>
<td>3d term</td>
<td>–Δφ</td>
<td>3.75166</td>
<td></td>
</tr>
</tbody>
</table>

**Check computation from observations taken by Triangulation party.**
SUPPLEMENTAL REPORT

To Accompany Graphic Control Sheet T.

Atlantic City, New Jersey

INSTRUCTIONS

The graphic control on sheet T is a part of Project HT-205, the instructions for which were dated May 16, 1935.

EXTENT OF GRAPHIC CONTROL

Additional graphic control from that located by the party of Lieutenant B. H. Rigg in 1935 was necessary to control the hydrography on this sheet.

SURVEY METHODS

The 29 signals located by this party were located by 3 or more intersecting cuts, 3 point fixes or resections.

The shoreline shown in pencil was transferred from air-photo compilation by Lieutenant (j.g.) E. H. Kirsch. Two discrepancies were noted between the compiled shoreline and the present shoreline. Where discrepancies were noted either by the topographic party or the hydrographic party sections of the shoreline were rodded in with the planetable. The rodded shoreline at Lat. 39° 27.9', Long. 74° 23.5' was found to be very indefinite and probably was misinterpreted on the air-photographs. The small section of shoreline rodded in in Lat. 39° 27.6', Long. 74° 24.6' was eroded from the point shown on the air-photographs.

The lights, beacons and ranges were located to conform with memorandum 2, (1936).

RECOVERABLE TOPOGRAPHIC STATIONS

No additional recoverable topographic stations were located by this party.

LANDMARKS

There were no landmarks located by this party.

NON-FLOATING AIDS TO NAVIGATION

"Non-Floating Aids to Navigation" will be made the subject of a separate report.
GEOGRAPHIC NAMES

See air-photo compilation for geographic names.

Submitted by,

Edmund L. Jones
Ensign U.S.C.& G.S.

Approved by,

John A. Bond
H. & G. Engineer
Chief of Party
REVIEW OF GRAPHIC CONTROL SURVEY T-6501α, SCALE 1:10,000

Date of Review 6/13/37

1. This survey has been reviewed in connection with Air Photo Compilation Nos. T-6435, 5435, with particular attention to the following details:

(a) Projection has been checked in the field.

(b) Accuracy of location of plane table control points.

(c) Discrepancies between detail on this survey and the air photo compilations listed above.

(d) Discrepancies found in descriptions submitted on Form 524 when compared with the air photo compilations listed above.

2. Refer to the reviews and descriptive reports of air photo compilations Nos. T-6535, 5535, for a more complete discussion of any errors or discrepancies found.

Any material errors found on this survey are noted in subsequent paragraphs of this review, and these have been reported to the Field Records Section and the Cartographic Section.

Notes and corrections resulting from the review are shown on this survey in green.

L. C. Landy
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

State: New Jersey

DESCRIPTIVE REPORT

LOCALITY
Atlantic Co.
Brigantine Inlet
Intracoastal Waterway
Great Bay to Grass Bay

1925
1936

CHIEF OF PARTY
Benjamin H. Rigg
John A. Bond
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 5

State New Jersey

General locality Atlantic County, Intra-Coastal Waterway

Locality Brigantine Inlet, Great Bay to Grassy Bay

Scale 1:10,000 Date of survey April, 1935

June 1936

Vessel Party No. 19 * MIKAWE

Chief of party B. H. Rigg * John A. Bond

Surveyed by A. S. Hall & A. M. Rogers * E. L. Jones

Inked by T. E. Nutting * E. L. Jones

Heights in feet above to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated May 16, 1935

Remarks: Hydrography partly completed in 1935

Hydrography completed by MIKAWE in 1936
DESCRIPTIVE REPORT TO ACCOMPANY
GRAPHIC CONTROL SHEET S

1. INSTRUCTIONS.
2. PURPOSE.
3. LIMITS OF SHEET.
4. DESCRIPTION OF TERRITORY.
5. CONTROL.
6. SURVEYING METHODS USED.
7. PERMANENT STATIONS ESTABILISHED.
8. AIDS TO NAVIGATION AND LANDMARKS.
9. TOPOGRAPHIC FEATURES LOCATED FOR USE IN AIR PHOTO Compilation.
10. SUPPLEMENTAL REPORT (1936 work)
INSTRUCTIONS

The survey was carried out under instructions dated May 16, 1935.

PURPOSE OF SURVEY

The purpose of the survey was to locate control for hydrography, to establish additional permanent stations, to locate aids to navigation and check landmarks, and to locate topographic features for use in the air photo compilation.

LIMITS OF THE SHEET

The territory covered by sheet "S" is bounded on the S.E. by Lat. 39° 25', Long. 74° 21', on the ocean beach about 1½ miles S.W. of the Brigantine Coast Guard Station. It extends N.E. to Lat. 39° 23', Long. 74° 18.5' on the ocean beach about one-half mile east of the Little Beach Coast Guard Observation Tower. It includes Brigantine Inlet. The sheet extends N. to Lat. 39° 29.5', Long. 74° 21.0', in Great Bay, and S.W. to Lat. 39° 26', Long. 74° 24', about one-half mile south of Black Point on the New Jersey Inland Waterway.

DESCRIPTION OF TERRITORY

Brigantine Inlet, in the central eastern portion of the sheet is blocked off from the Inland Waterway by a sand flat just east of the waterway. Boats drawing not more than four feet can pass this bar at half tide or better. Brigantine Inlet is a popular fishing grounds. Great Thorofare, which also empties into Brigantine Inlet, is navigable at high tide by boats drawing not more than three feet. Both Brigantine Channel and Great Thorofare are staked out by the New Jersey Board of Commerce and Navigation, but should not be used without consulting local
fishermen. The main channel of the inland waterway is adequately marked in the territory covered by this sheet.

CONTROL

The following triangulation stations were used as control on sheet "S":

LITTLE BEACH L.S.S. QUILLAN 1903
LITTLE BEACH " Meany 1932
BRIGANTINE " "
GRASSY Rigg 1935
DIRTY C. & N. " "
SINKIN " "
LETTUCE C. & N. " "
BRIGANTINE C.G. Woodworth 1931

The following triangulation stations which fell on sheet "S" were not recovered:

L.S.S. QUILLAN 1903 Quillan 1903
BRIGANTINE L.S.S. Quillan 1903
BRIGANTINE WATER TANK, north of Meany 1932

SURVEYING METHODS USED

It was necessary to locate the entire high water line around Brigantine Inlet because of the extensive changes which had taken place since the photos were taken. The section of the beach on the north side of the inlet was located by means of a traverse run from station TRIPOD northward to station SEA, the Observation Tower of the Little Beach Coast Guard Station. An adjustment of five meters was made in this traverse. Due to the building out of the point between Brigantine Inlet and the Coast Guard Tower, the control sheet was not laid out so as to include the tip of the point. The point itself was located by means of measurements taken at right angles to the traverse line, and was transferred directly to the compilation. The beach between the mouths of Great Thorofare and Brigantine Channel was located by means of three set-ups which were determined by resections. The strip of beach south of Brigantine Inlet was located from a set-up on
signal BUH, and a second set-up determined by rod reading from BUH. The hydrographic signals and the numerous C. & N. stations falling on sheet "S" were located by graphic triangulation. Set-ups on triangulation stations DIRTY, SIMKIN, and station BEA (Little Beach Coast Guard Observation Tower) were used to start the survey, which was finished by set-ups on signals already located. Patches of shoreline were rodded in to serve as a check between the topography and the air photo compilation.

PERMANENT STATIONS ESTABLISHED

A. Monumented Stations -- The following monumented stations established by the New Jersey Board of Commerce & Navigation were located, designated on the control sheet with the letter "D", and described on form 524.

SISTER
PANSY
LUDLY
VIOLET
DAHLIA
PINK
CHEEK
ROD
INLET
POINT
ORE
SPOON
BANK
FORK
GUARD
BLACK POINT
GOLDEN

B. Natural Objects located and described -- Signal BEA (Coast Guard Observation at Little Beach) was described and listed in the report on sheet "F". No other natural objects were located.
C. Bolstad Fourth Order Stations. -- All of Bolstad's "4th order" stations (located for Air-Photo Compilation Control) falling within the limits of the graphical control sheets were plotted. Wherever possible, they were checked with the planetable. In the few cases where discrepancies occurred, they were adjusted by re-checks of the computations or of the topography, or both. The final position as shown on the sheet and the card, is to be considered correct.

Following is a list of stations falling on sheet "S":

<table>
<thead>
<tr>
<th>Station</th>
<th>Whether or Not Checked</th>
<th>Amt. of Disrep.</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHY. GREAT THORO.</td>
<td>Checked</td>
<td></td>
<td>Checked on sheet S</td>
</tr>
</tbody>
</table>

---

AIDS TO NAVIGATION AND LANDMARKS

For a discussion of aids to navigation, see the corresponding paragraph (7-6 3 q 9 b) in the descriptive report accompanying sheet "H". All lighted aids to navigation falling on sheet "S" have been submitted on Form 567.

The present charts are correct as far as landmarks are concerned, in the area covered by sheet "S", with the exception of Brigantine W.T., north of. It is no longer in existence, and has been recommended for deletion.

TOPOGRAPHIC FEATURES LOCATED FOR USE IN THE AIR PHOTO COMPILATION

The shoreline along the ocean beach on both sides of Brigantine Inlet was located, and transferred directly to the air photo compilation. The region just east of the Little Beach Coast Guard Tower was difficult to map, because of the indefiniteness of the high water line. The extreme high water line and the low water line were located. The high water line could be assumed with a fair degree of accuracy to be almost anywhere between these lines. On the compilation, the high water line was assumed to run through the indefinite portion in such a way as to connect most naturally with the definite portions. The patches of shoreline in the interior, located for
a check between the topography and the compilation agreed without adjustment.

GEOGRAPHIC NAMES

See air photo compilation for details.

Respectfully submitted,

Addison S. Hall,
Surveyor

Forwarded by,

Lt. Benjamin H. Rigg,
Chief of Party.
SUPPLEMENTAL REPORT

To Accompany Graphic Control Sheet S.

Atlantic City, New Jersey

INSTRUCTIONS

The graphic control on sheet S is a part of Project HT-205, the instructions for which were dated May 16, 1935.

EXTENT OF GRAPHIC CONTROL

Nearly all of the graphic control on this sheet was located by this party, except the described recoverable topographic stations which were located by the party of Lieutenant E. H. Rigg in 1935.

SURVEY METHODS

All of the signals were located by three or more intersecting cuts three point fixes or resection.

The shoreline shown in pencil was transferred from air-photographs compiled by Lieutenant (j.g.) E. H. Kirsch. Where discrepancies were noted, either by the topographic or hydrographic party, sections of the shoreline were rodded in with the planetable.

DISCREPANCIES

Discrepancies in the shoreline were noted in the following places:

Lat. 39° 26.1', Long. 74° 20.7' - the shoreline has eroded from that shown on the air-photographs and is now shown correctly on the control sheet.

Lat. 39° 28.5', Long. 74° 20.5' - a small marsh island has been built up since the air-photographs were taken.

Lat. 39° 28.1', Long. 74° 21.4' - a small grass island has been built up since the air-photographs were taken.

Lat. 39° 28.7', Long. 74° 22.2' - several small islands have formed since the air-photographs were taken.

RECOVERABLE TOPOGRAPHIC STATIONS

Four additional recoverable topographic stations were located by this party.

LANDMARKS FOR CHARTS

"Landmarks for Charts" and "Non-Floating Aids to Navigation" will be made the subjects of separate reports.
GEOGRAPHIC NAMES

See air-photo compilation for geographic names.

Submitted by,

Edmund L. Jones
Ensign U.S.C.& G.S.

Approved by,

John A. Bond
E. & G. Engineer
Chief of Party
MEMORANDUM
IMMEDIATE ATTENTION

SURVEY DESCRIPTIVE REPORT PHOTOSTAT OF
No. H. No. T6501a&b

received DEC 28 1936
registered JAN 9 1937
verified reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

<table>
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<th>ROUTE</th>
<th>Initial</th>
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</table>

RETURN TO

82 C.H. Green
REVIEW OF GRAPHIC CONTROL SURVEY T-65016, SCALE 1:10,000

Date of Review
6/23/32

1. This survey has been reviewed in connection with Air Photo Compilation Nos. T-5478, , , with particular attention to the following details:

   (a) Projection has been checked in the Field.

   (b) Accuracy of location of plane table control points.

   (c) Discrepancies between detail on this survey and the air photo compilations listed above.

   (d) Discrepancies found in descriptions submitted on Form 524 when compared with the air photo compilations listed above.

2. Refer to the reviews and descriptive reports of air photo compilations Nos. T-5478, , , for a more complete discussion of any errors or discrepancies found.

Any material errors found on this survey are noted in subsequent paragraphs of this review, and these have been reported to the Field Records Section and the Cartographic Section.

Notes and corrections resulting from the review are shown on this survey in green.

L. C. Landy