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Form 504 Rev. Dec. 1933 DEPARTMENT OF COMMERCE U.S. COAST AND GEODETIC SURVEY FOR PARTIES DIRECTOR L. O. Colbert DESCRIPTIVE REPORT Topographic Sheet No. T6552 a &
Highrographia Sheet No. 1101112
State Maine
LOCALITY
Portland Harbor
Fore River
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CHIEF OF PARTY
Fred L. Peacock

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Fred. J. Peacoak

Chief of Party. C&GS

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.

GFO 266853

DESCRIPTIVE REPORT

to accompany

TOPOGRAPHIC SURVEY - Reg. No. 6852a

Casco Bay, Maine

Portland Harbor

INSTRUCTIONS:

This survey was executed in accordance with the Director's Instructions to the Commanding Officer, Ship OCEANOGRAPHER, dated May 7, 1941, Project C. S. - 265.

SCALE:

The scale of this survey is 1: 5000.

LIMITS:

This survey covers that part of the Portland and South Portland Waterfront from the Maine State Pier westward to Vaughan Street bridge.

It joins Topographic Survey Reg. No 6847b on the east and Topographic Survey 6852b on the west. Both of the adjoining surveys were executed by Ship OCEANOGRAPHER personnel during the 1941 summer season.

CONTROL:

Control consisted of triangulation of second and third order accuracy located by C. M. Durgin in 1933 and station GRAVE 1941 (located by a three point fix) which was located by ship OCEANOGRAPHER personnel.

The positions given for the stations S. PORTLAND,
N. E. STACK, POWER HOUSE and S. PORTLAND, S.W. STACK, POWER
HOUSE could not be checked by some 30 meters in this survey.

It had been planned to use these stations extensively for
control as they are near the center of the area covered by
this survey. These stacks were relocated by planetable
methods on this survey and the positions are included in the
recoverable hydrographic stations.

SURVEY METHODS:

Standard planetable methods were used. The only triangulation station that could be occupied with a planetable was station GRAVE. Therefore, numerous three point fixes were taken using ELEVATOR NO. 1, South Portland STANDPIPE, St. Dominic's Church Spire (other spires at times) and station GRAVE. In most instances these three point fixes were inside the triangle of the stations used, which gives a strong determination of the fix. From these three point fixes and from station GRAVE the signals were cut in and these used as additional control points.

The corners of the buildings along the faces of the docks were usually rodded in (in a few places permanently berthed ships made this impractical). The back corners of the buildings and many of the railroad tracks were taped in from some know point. This was necessary because of the large number of assorted buildings of the railroad cars on the tracks, of parked cars and trucks and of piles of merchandise on the docks.

The main purpose of showing the railroad tracks was to indicate where rail facilities are available because of the rapidly expanding defense activities of the Portland Harbor.

DESCRIPTION:

(Triangulation stations are termed "stations" and Hydrographic signals are termed "signals" in the following paragraphs.)

The group of marine railways at signal VAT, Lat. 43° 38.8°, Long 70° 14.8°, are for a small boat and yacht yard. The double pronged dock between signals WES and VAN is the lighthouse dock of the U.S. Coast Guard. Buildings on this dock were not located as it is a defense area. On the narrow neck of land that signals QUE and POR are on, is an electric power plant. The basin inside the neck, while completely enclosed, is subject to rise and fall of tide. The shoreline is ripraped all the way around the neck and in the basin. West of the Power plant is the Portland Bridge, a steel and concrete structure set on concrete piers with concrete treatle approaches on each end. At the southern end of the south bridge treatle is a fill with stone riprap at the waters edge on the vestern side.

The bridge has a double leaf bascule draw span with a horizontal clearance of 100 feet, a vertical clearance of 30 feet. The span piers are protected by wooden cribbing. The roadway of the bridge is 44 feet wide.

South of signal DOT is an earth bluff approximately 15 feet high, and east of signal MIL there is an earth bluff about 20 feet high. At signal TAT is an oil dock where tankers unload. On the northern face of the dock southwest of signal COS are large cranes for handling bulk material, such as coal and ore, directly from ships to railroad cars. From signal ELL to BAL is an earth dam with riprap on the northern side. At signal ROL is an oil dock where tankers unload, using the eastern side of the dock. From about 80 meters west of signal DOL to station GRAVE is about a 20 foot earth bluff with riprap at the bottom beginning about 100 meters east of station GRAVE.

On the northern side of the harbor beginning at signal FAT is an earth bluff about 15 feet high tapering to a bluff about 6 feet high at signal HEN. From the corner at 125 meters west of signal JIB to signal WON is a large dock with traveling cranes on it for handling heavy goods directly from railroad cars to ships and vice versa. The long narrow building at the western end of this dock is an open shed. Back of the above area is a railroad yard of which only the general limits are shown. The western limit is where the short piece of railroad track is shown. There are so many tracks in this yard it would be difficult to show them.

The long dock from signal LED to signal MAT is large enough for big ships. It has two railroad tracks along the outer side of the building but no tracks for cranes, however trucks are driven out on this dock. Both the dock and the one-story shed appear to be in good condition.

The series of docks extending from signal MAT to the north-east are mainly for fishing boats and other small craft. These wharfs as a whole are in fair or poor condition with rather wavy dock lines. The buildings are in fair condition. The heads of most of these slips bare at low water, showing mud flats. The low water line has been indicated by a dotted line. The wrecks at the head of these slips are for the most part small boats which appear to have been tied up there and forgotten.

A few of the docks in the above mentioned group are large and stable enough to accommodate large ships and the most important are listed. The east face of the dock that signal RUN is on has cranes for loading and unloading bulk material, such as coal and ore, directly from ships to railroad cars. The southwestern face of the dock at signal THO has facilities for unloading coal ships, as has the northeastern side of the dock at FIN. The most northeasterly dock of the group is the Maine State Pier which is large enough to accommodate large vessels on either side. The dock is in good condition but at the time of the survey had no permanent cranes for unloading bulk or heavy material. This dock was being extensively used by the Navy. Two other docks that should be mentioned are the Portland Yacht Club at signal GAT, and the interisland ferry dock at signals ANN and NEL.

In back of the group of docks mentioned in the two preceding paragraphs is Commercial Street which has a railroad track down the center and which serves as an intercepting arterial for this section of the waterfront.

The small cove about 75 meters northeast of signal MISS (Lat 43° 38.7' Long. 70° 15.7') has elevated obstructions across the entrance. Both the cove and the obstructions are shown.

LOW WATER LINE:

The only low water line shown is that between signals SIN and WES, the short strips east of signal HEN, WON and MISS, and that in back of the slips northeast of signal MAT. The remainder of the low water is far out in the mud flats or in areas where it was more feasible for the hydrographic party to locate it. The reef at Lat 43° 38.3' Long 70° 15.6' was rodded in. In many places the character of the beach is shown but this should NOT be taken for the low water line.

UNINKED SECTIONS OF HIGH WATER LINE:

The grass growing outside of the high water line is rather an unusual condition, and it was difficult to determine where Field Memorandum No. 1, 1938 "Mean High Water Line in Marsh and other Sames" should apply.

Grass from $\frac{1}{2}$ to $1\frac{1}{2}$ feet grows outside the high water line and extends down to the mud flats. However, in most instances immediately back of the high water line fast land begins and is usually backed by a bluff.

The high water line is reasonably definate, taking into consideration the large high water tidal range (4 feet). In most instances the grass is not so tall or thick that a pulling boat could not be taken to the high water line at high tide. Under the above condition it was thought advisable to ink the high water line, showing grass to the outside of it.

In places where there is flat and somewhat marshy grass land behing the high water line for some distance the high water area has been shown by symbols as in A & B of Fig. 1 of the above mentioned memorandum. The mean high water line was rodded in but has been left in pencil.

MAGNETIC MERIDIAN:

The magnetic meridian on this survey was taken with the declinatoire for alidade No. 207 the index error of which is not known. As station GRAVE is in the vicinity (200 meters) of large oil tanks there is possibility of some local attraction. Apparently Ok.

GEOGRAPHIC NAMES:

No investigation of geographic names was made.

JUNCTIONS:

Satisfactory junctions were made with adjoining surveys.

COMPARISON WITH PREVIOUS SURVEY:

There have been so many changes that it is difficult to make a comparison with previous surveys (1854-58) of this area.

see Item 2 of review for comparison

RECOVERABLE HYDROGRAPHIC STATIONS:

BAL - Stack

MOZ - Stack

BAT - Stack

QUE - Stack

BRID- Apex of bridge tender's house

RID - Stack * POR

PASS- Stack

POG - Stack

Descriptions for the above hydrographic signals will be submitted on Form 524.

LANDMARKS FOR CHARTS:

The following Landmarks in addition to those shown on Chart 325 are recommended.

STACK (Signal BAL) Lat 43° 38+158m Long. 70° 16+64lm. STACK (Signal PASS) Lat. 43° 39+533m Long. 70° 15+120m.

It is recommended that both stacks at the power house at Lat 43° 38.6 Long. 70° 15.2 be shown as landmarks.

* Changed to conform with hydrographic signal name. 2-25-42 D.A.J.

The topographic locations did not check the triangulation positions by some 30 meters. It is believed that the Topographic location is correct, which is given below.

STACK, Power House (signal Poc Lat. 43° 38 +1175 m. Long. 70° 15+323 m.

STACK, Power House (signal QUE) Lat. 43° 38+1125 m. Long. 70° 15+399 m.

DEVIATION OF CONVENTIONAL SYMBOLS:

Because of the large scale of this survey it was deemed advisable at times to deviate from conventional symbols. In detailing bridge, especially the draw span, the conventional symbol would not show sufficient information and would observe essential detail.

The outline of large wrecks was rodded in and is shown with a dashed line.

UNSURVEYED AREAS:

There are several sloughs above the head of navigation that have been left unsurveyed under the assumption that they will be obtained from the air photographic survey of this area.

INKING:

The high water line, the low water line, beach symbols, bluffs, grass symbols, rocks, buildings, railroad tracks, the signals, the projection, etc., and the notes pertaining thereto were inked by the Topographer. The names of triangulation stations, signals, projection line numbers, projection data and similar notes will be inked by the Norfolk Processing Office.

STATISTICS:

Number of	statute mi	les of	high water line	12.3
Number of	statute mi	les of	low water line	0.6
Number of	statute mi	les of	roads	0.2
Number of	statute mi	les of	railroads	5.9
Number of	hydrograph	ic sign	als located	109

Respectfully submitted,

Dale E. Sturmer

Dale E. Sturmer, Ensign, C&GS. U.S.C. & G.S.S. OCEANOGRAPHER

December 12, 1941

Approved and forwarded:

Fred. L. Peacock Chief of Party, C&GS.

ADDENDUM

to accompany

DESCRIPTIVE REPORT

T - 6852a

Portland Harbor

The inking on this survey was completed in the Norfolk Processing Office on February 25, 1942.

There are several signals indicated on this survey by red circles for which no hydrographic signal name was indicated.

As far as could be determined, these signals were not used by the hydrographic parties and no names were assigned. The red circles indicating the unnamed signals were left on the topographic survey.

The name of Signal POC, easterly power house stack near Portland Bridge, South Portland was changed to POR to conform with the hydrographic signal name.

The geographic names shown on this survey in pencil were taken from Chart number 325.

This survey sheet was cleaned with particular attention to leaving the penciled sections of shoreline intact.

Don A. Jones, Aid, C&GS.

3/9/42 Norfolk Processing Office, Norfolk, Va. Remarks.

Decisions

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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. "9"

REGISTER NO. 6852b

State <u>Maine</u>
General Locality Gasco Bay Portland Harbor
Locality Upper Fore River
Scale 1:5000 Date of survey 0ct., 1941 , 19
VesselShip Oceanographer
Chief of party Fred L. Pencock
Surveyed byDale E. Sturmer
Inked by Dale E. Sturmer and Norfolk Processing Office
Heights in feet above to ground to tops of trees
Contour, Approximate contour, Form line interval feet
Instructions dated May 7, 1941 , 19
Remarks: Project C. S. 265
200 96855

DESCRIPTIVE REPORT

to accompany

TOPOGRAPHIC SURVEY - Reg. No. 6852b

Casco Bay, Maine

Upper Fore River

INSTRUCTIONS:

This survey was executed in accordance with the Director's Instructions to the Commanding Officer, Ship OCEANOGRAPHER, dated May 7, 1941, Project C.S.-265.

SCALE:

The scale of this survey is 1: 5000.

LIMITS:

This survey covers Fore River from the Vaughan Street Bridge to the head of navigation, and Long Creek to the head of navigation.

This survey joins Topographic Survey Reg. No. 6852a on the east.

CONTROL:

Control consisted of triangulation of second and third order accuracy located by C. M. Durgin in 1933. Personnel of the Ship OCEANOGRAPHER located Stations GRAVE and LONG in 1941 by a three point fix.

Station STATE REFORM SCHOOL EAST TOWER, 1852 could not be identified and was not used in this survey. There are two east towers, neither very prominent.

SURVEY METHODS:

Standard planetable survey methods were used throughout. As many signals as possible were first cut in from triangulation stations and these were used as additional control points. Combinations of cuts and rod readings were used to carry control up Fore River.

TRAVERSES:

A traverse was run up Long Creek from Signal DAD and was closed by returning to Signal DAD. The closing error was three meters which was adjusted.

When the above traverse was run, Signal DAD had not yet been located, so a preliminary position was taken with a weak three point fix. The position of DAD was later determined by cuts and the traverse adjusted. The preliminary and final positions varied by about five meters. It was desirable to run this traverse before Signal DAD was located because that day a strong northwest wind made conditions unsuitable for working elsewhere, but ideal in Long Creek.

DESCRIPTIONS:

(Triangulation Stations are termed "stations" and hydrographic signals are termed "signals").

That part of this survey which lies to the east of the railroad bridge is the upper part of Portland Harbor. The remainder of the area is of little consequence as far as navigation is concerned. A detailed description follows.

The bluff eastward of Station GRAVE is about 25 feet high. For about 50 meters west of Station GRAVE the bluff is ripraped at the bottom, with grass above. The dock extending out from the oil tank is of good construction and large tankers tie up along the end. The small dock to the westward does not seem to be much in use.

The Vaughan highway bridge is of steel construction and is set on stone piers. The draw span is of the horizontal swing type.

The center and side piers of the draw span are protected by wooden cribbing. The horizontal clearance on both openings are 61 feet, and the vertical clearance above mean high water when closed is 8 feet. Water traffic can use either side of the draw. On either end of the bridge are approach fills that are protected by riprap.

The dock on which is Signal LOB is of substantial construction where large oil tankers unload, and the same applies to the dock between Signals GOT and EGO.

The railroad bridge is a wooden trestle supporting two tracks and splits near the center with one branch curving to the north. There is no draw in this bridge, but there is a large opening with "Values from a horizontal clearance of 20 feet and a vertical clearance above mean high water of one foet. Only small boats can pass under this bridge. There is no enlarged opening between the bents of the trestle to the water area between the "split" of the trestle.

USE. publication

The embankment of the railroad tracks north of the trestle is protected by riprap to about 125 meters northwest of Signal JUG. The remainder of Fore River is more or less self-explanatory. The bluff along the western side is about 30 feet high. (See Paragraph on "Uninked Sections of Shoreline.") The area to the southwest of Fore River is being made into an airport.

Long Creek all bares at low water but floods to the banks at high water. In the upper part is a narrow channel through the grass. (See also paragraph on "Uninked Sections of Shoreline").

LOW WATER LINE:

No low water line was obtained on this survey; most of it is so far out in the mud flats that it was more feasible for the hydrographic party to obtain it. The sanding of the beach by Station GRAVE indicates the character of the shoreline.

UNINKED SECTIONS OF THE HIGH WATER LINE:

The grass growing outside the high water line is rather an unusual condition and it was difficult to determine where Field Memorandum No. 1, 1938 "Mean High, Ifne in Marsh and Other Swamp Areas" should apply.

Grass from six inches to two feet high grows outside the high water line and extends down to the mud flats. In most instances fast land begins immediately back of the high water line with a bluff beginning a few meters back of that. The mean high water line is reasonably definite, taking into consideration the large high water tidal range (4 feet).

As a criterion as to whether the high water line should be shown; the following was used: If at high water the high water line could be readily determined by the navigator, or if a pulling boat

could be easily taken to the high water line, it was inked with a full solid line. Otherwise, it has been indicated by grass symbols. All of the high water line was rodded in; where the above Memorandum seemed to apply it was left in pencil.

MAGNETIC MERIDIAN:

The magnetic meridian on this survey was taken with declinatoire / for alidade No. 207 the index error of which is not known.

GEOGRAPHIC NAMES:

No investigation of geographic names was made.

JUNCTIONS:

A satisfactory junction with the adjoining survey was made.

RECOVERABLE HYDROGRAPHIC STATIONS:

NIG - Stack

Mole (BRIDGE) - Center of Draw Span Vaughan Bridge

Descriptions for the above hydrographic signals will be submitted on Form 524.

LANDMARKS FOR CHARTS:

The only landmark suggested for charting in addition to those on Chart 325 is:

STACK (Signal NIG)

Lat. 43° 39' plus 232 m. Long 70° 17' " 740 m.



UNSURVEYED AREAS:

There are several sloughs above the head of navigation that have been left unsurveyed under the assumption that they can be obtained from the air photographic survey of this area.

INKING:

The high water, beach symbols, bluffs, grass symbols, buildings, railroad track, signals, projections, and the notes pertaining thereto, were inked by the Topographer. The names of triangulation stations, signals, projection line numbers, projection data, and similar notes will be inked by the Norfolk Processing Office.

T6852b

STATISTICS:

Number of	statute miles of high water line	12.1
Number of	statute miles of roads	0.2
Number of	statute miles of railroads	3.0
Number of	hydrographic signals	47

Respectfully submitted,

Dale E. Stermer Dale E. Sturmer, Ensign, C&GS. U.S.C. & G.S.S. OCEANOGRAPHER

December 12, 1941

Approved and forwarded:

Fred. L. Peacock Chief of Party, C&GS.

ADDENDUM

to accompany

DESCRIPTIVE REPORT

T - 6852b

Upper Fore River

The inking on this survey was completed in the Norfolk Processing Office on February 25, 1942.

There are several signals indicated on this survey by red circles for which no hydrographic signal name was indicated. As far as could be determined, these signals were not used by the hydrographic parties and no names were assigned. The red circles indicating the unnamed signals were left on the topographic survey.

Red circles emoved in office

Signal MOLE, center of draw span, Vaughan Bridge was submitted as a recoverable Topographic Station under the name of BRIDGE. The name of this signal is shown on the survey as MOLE (BRIDGE).

The geographic names shown on this survey in pencil were taken 'from Chart Number 325.

This survey sheet was cleaned with particular attention to leaving the penciled sections of shore line intact.

Don A. Jones,

Aid, C&GS.

3/9/42 Norfolk Processing Office, Norfolk, Va. Remarks

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MEMORANDUM IMMEDIATE ATTENTION

			received i	March 19.	1942
SURVEY DESCRIPTIVE REPORT	No. T	T6852 a & b	registered verified		
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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.

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RETURN TO

DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF TOPOGRAPHIC SURVEY

REGISTER NO. T-6852a&b Field No. P & Q

Maine, Portland Harbor, Fore River Surveyed August - October 1941, Scale 1:5,000 Instructions dated May 7, 1941

Plane Table Survey

Aluminum Mounted

Chief of Party - Fred L. Peacock Surveyed by - D. E. Sturmer Inked by - D. E. Sturmer and Norfolk Processing Office Reviewed by - R. H. Carstens Inspected by - H. R. Edmonston

1. Adjoining Surveys

A satisfactory junction was made with T-6847b (1941) on the northeast. Topographic map T-5957 (1941) covers the complete area of the present survey.

2. Comparison with Prior Surveys

T- 735	(1854-58)	1:10,000
T-1111	(1867)	1: 5,000
T-1141b	(1869)	1: 1,200
T-1142b	(1869)	1: 1,200

Numerous waterfront improvements have been made since the early surveys were accomplished. Practically all of the old piers have been rebuilt and many new piers, wharves, retaining walls and marine railways have been added. All bridges have been rebuilt and two old bridges in Lat. 43°38.4', Long. 70°15.9' and Lat. 43°38.2', Long. 70°16.65' have been abandoned and removed. To the west of the Portland Terminal Bridge the high waterline where shown on the present survey is in good agreement with that shown on T-735. A few changes have been made in the shoreline by filling for construction work as in Lat. 43°39.0', Long. 70°17.2'.

The present survey should supersede the earlier surveys in the common area.

3. Comparison with Chart 325 (Latest print date 1-26-42)

A. Topography

The charted topography within the area of the present survey originates with the previously mentioned surveys, together with blueprints of the U. S. Engineers and of shipping and manufacturing companies situated in Portland and South Portland. The major changes in topographic features are shown on blueprints 29442-29444. The present survey is in good agreement with these blueprints and should supersede them in the common area. The fish weir charted in Lat. 43°38.6', Long. 70°15.5' is not shown on either the present survey or the most recent hydrographic survey of that area and probably does not exist.

The three beacons charted in Lat. 43°38.8', Long. 70°14.95' can be assumed to be the dolphins located in the same position on the present survey.

B. Aids to Navigation

The fixed aids to navigation which were located by this survey are in good agreement with their charted positions.

4. Condition of Survey

Satisfactory.

- 5. Compliance with Instructions for the Project
 Satisfactory.
- 6. Additional Field Work Recommended

None.

7. Superseded Surveys

T- 735 (1854-58) in part T-1111 (1867) " " T-1141b (1869) " " T-1142b (1869) " "

Examined and approved:

Chief. Surveys Section

Chief, Division of Charts

Chief, Section of Hydrography Chief, Division of Coastal Surveys