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RESTRICTED

Diag Cht. Nos. 8865 & 9198-2

Form 504

CS-343

U. S. COAST AND GEODETIC SURVEY  
DEPARTMENT OF COMMERCE

## DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC & PIPE DRAG

Field No. PI - 025 52 Office No. H - 7994

### LOCALITY

State ALASKA

General locality ALEUTIAN ISLANDS

Locality SHEMYA ISLAND - ALCAN HARBOR

19 52

CHIEF OF PARTY

Thos. B. Reed

LIBRARY & ARCHIVES

DATE APR 14 1953

B-1870-1 (1)

DECLASSIFIED BY NOAA  
PURSUANT TO DOC SYSTEMATIC REVIEW  
GUIDELINES AS DESCRIBED IN SECTION  
3.3(a), EXECUTIVE ORDER 12356.

7994  
7662



DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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

REGISTER No. H-7994

Field No. PI-025 52

State ALASKA ←

General locality SHEMYA ISLAND \* (ALEUTIAN ISLANDS)

Locality ALCAN HARBOR

Scale 1 : 2 500 Date of survey 8, 13 & 14 August 1952

Instructions dated 25 July 1952

Vessel U. S. C. & G. S. S. PIONEER

Chief of party Thos. B. Reed

Surveyed by H. C. Applequist & C. J. Beyma

Soundings taken by fathometer, graphic recorder, hand lead, wire

Fathograms scaled by P. O. R., G. E. H., & G. E. C.

Fathograms checked by F. N., H. C. A., & K. A. M.

Protracted by G.E.H., & G.E.C.

Soundings penciled by G.E.C.

Soundings in ~~fathoms~~ feet at ~~MLLW~~ MLLW

REMARKS: Combined Hydrographic & <sup>Pipe</sup> ~~Wire~~ Drag Survey

Drag Strips and Depth-Area Diagram by H.C.A. in D.P.

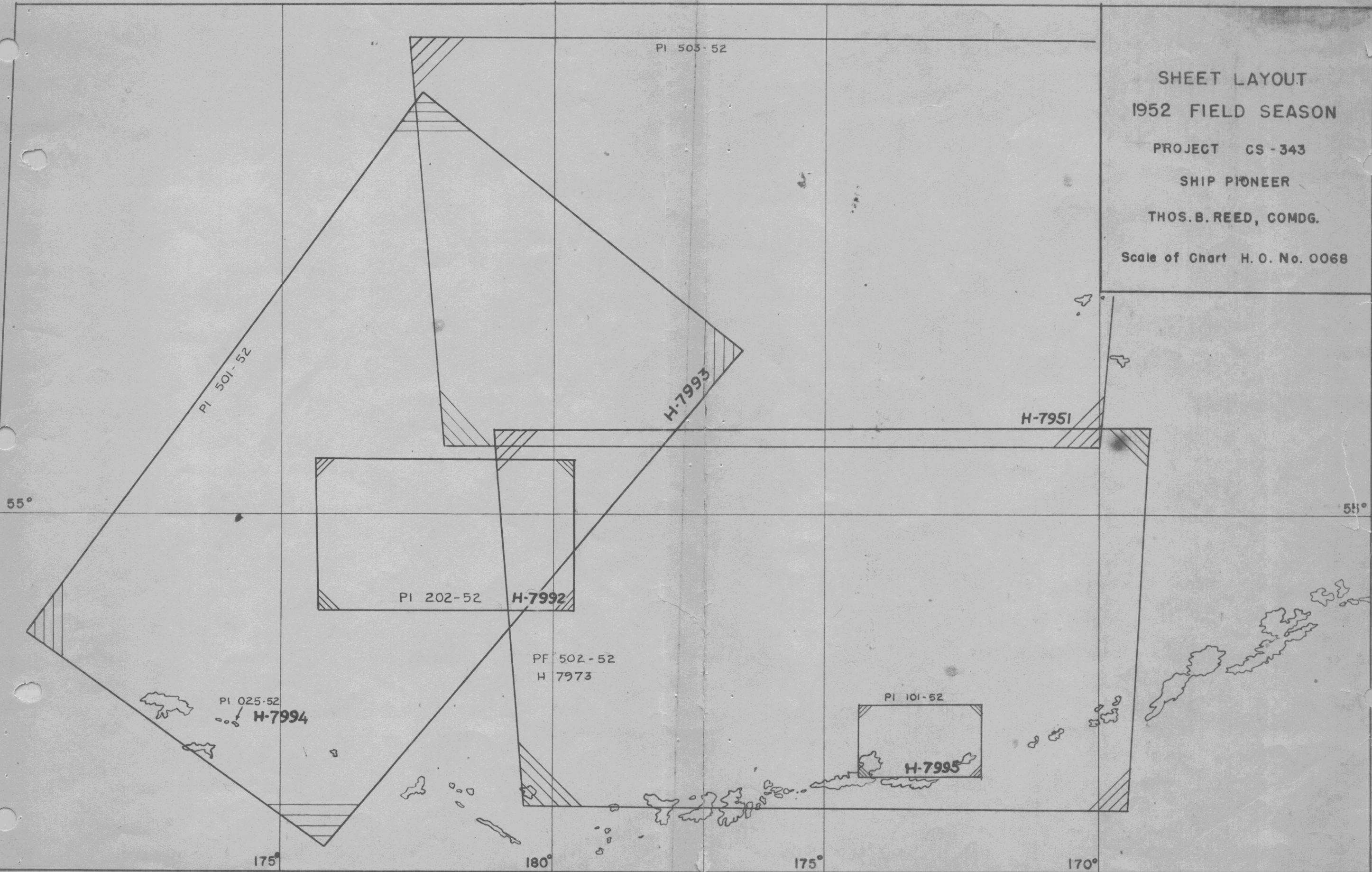
SHEET LAYOUT  
1952 FIELD SEASON

PROJECT CS-343

SHIP PIONEER

THOS. B. REED, COMDG.

Scale of Chart H. O. No. 0068



DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC AND PIPE DRAG SURVEY

Register No. H-7994

Field No. PI-025-52

ALCAN HARBOR - SHEMYA ISLAND

ALASKA

1952

Project CS 343  
Ship PIONEER  
Scale 1 : 2,500

Thos. B. Reed, Chief of Party  
Surveyed by: H.C.Applequist  
C.J.Beyma

A. INSTRUCTIONS:

Instructions for this survey are contained in Supplemental Instructions, Project CS 343, dated 25 July 1952, 22/MEK, S-2-PI.

B. SURVEY LIMITS AND DATES:

This survey covers the area in the immediate vicinity of the existing pier in Alcan Harbor, Shemya Island: from the pier eastward approximately 500 feet and northward to depths of over 40 feet. The field work was done on 8, 13, and 14 August 1952.

C. CONTROL:

Control for this survey was furnished by existing triangulation on the N. A. 1927 Datum, published in Vol. V, Geographic Positions, Alaska, supplemented by topographic stations located by graphic control methods by this party. Ranges were also established and located by this party. *The shoreline originates with T-7091, T-7091(1952)*

D. SURVEY METHODS:

The preliminary hydrography was performed in the usual manner with no deviation from standard practice. Positions were determined by three-point-fixes.

An attempt was made to drag the area with a standard wire drag but the equipment available was inadequate and the launches could not be slowed down sufficiently. While attempting to drag a strip, one of the launches stopped, allowing the ground wire to sag. The wire fouled on some strips of steel airfield matting. Several hours were required in clearing and the attempt to use this equipment was abandoned and a pipe drag used in its place.

The pipe drag consisted of a 32 foot, 2½ inch pipe, suspended by cables attached to the pipe 10 feet in from the ends and secured to the launch just forward of the launch house. The pipe towed at right angles to the path of the launch. The depth of the pipe was determined by stranded tide gage wire, marked at each foot and attached to the pipe. One wire was used on each side of the launch with a man holding the wire vertically with a slight tension and the depth of the pipe then read directly from the markings on the wire. The men holding these wires were able to detect the slightest grounding of the pipe. The lines were run on ranges at the slowest speed of the launch. Alongside the pier, six lines were run on



ranges established by the graphic control party, spaced 20 feet apart. Over the rest of the area where natural objects were picked for ranges, this spacing was attempted but exceeded in some instances.

The fathometer was operated continuously thereby giving very complete sounding coverage. At times the echo from the pipe made a trace on the fathogram. This should not be confused with the bottom trace. The trace of the pipe does not necessarily give the true depth of the pipe as it seldom towed as far aft as the fathometer fish.

E. SMOOTH PLOTTING:

Two projections were made on the same Whatman sheet. The positions were plotted and the soundings pencilled on the left hand projection. All of the soundings of the preliminary hydrography were pencilled and as many as possible from the drag lines without undue crowding. All the soundings not used were compared with those pencilled on the sheet. Agreement was good although the soundings taken during the preliminary hydrography appeared to average about half a foot shoaler than those taken during the dragging. This was probably due to the fact that there was a two foot swell running during the preliminary hydrography and the tops of the fathogram trace scaled.

*Sdgs. re-vised in Wash. off. (See Sdg. Vol. 1)*

The pipe drag positions were plotted on the right hand projection. The lines joining these positions were drawn in but the drag strips themselves were not plotted on the projection. The grounding soundings were shown on the sheet. The drag strips are shown on two tracing paper overlays. The strips were drawn about 14 feet on each side of the launch line. The strip was cut down from 32 to 28 feet to allow for the swinging of the launch and the pipe. It is believed that the effective width of the strip was at no time less than 28 feet. A depth-area diagram was constructed from these overlays. The grounding depths are pencilled on the projection and inked on the strip overlays.

*See attached tracings.*

There are three small splits in the eastern part in the vicinity of the washed out pier. The southerly one is in depths of 30 feet and over. One of the preliminary sounding lines passed directly over this split and the fathogram gave no indication of any obstruction. The other two are in depths of 40 feet and over, near the northern limit of the work. There is also one small split just east north east of the end of the existing pier, in depths of 28 to 30 feet. This was discovered after the smooth plotting of the sheet.

Side echoes off what appears to be broken off piling were obtained just north of the existing pier. The pier at one time extended over this area. The least depth on these side echoes was 22 feet and the pipe drag at an effective depth of 24 feet cleared them. 31

*832 ft 31 ft on survey*

While attempting to use the standard drag equipment the ground wire was fouled by sheets of steel airstrip matting. This was in the area north of the existing pier. It was reported that at the time the end of the pier was washed out, there was a pile of this material on the pier. The pipe drag cleared it while set at an effective depth of 24 feet.

F. COMPARISON WITH CHART AND PRIOR SURVEYS:

Chart No. 9125 covers this area. The agreement with this chart is fairly good considering the few soundings shown on the chart. However the pier does not extend out as far as shown on the chart and the soundings along the pier are shoaler than the chart indicates.

*See TP5 of Review*

Previous survey, H-6975, 1944, covers this area. Since the time of this survey the breakwater washed out and apparently the material washed inshore. The present depths are consistently less than shown.

Previous survey H-7634, 1947, also covers this area. The agreement is fairly good except that the present depths alongside the pier are shoaler.

See PS of Review

G. RECORDS AND SOUNDING REDUCERS:

The preliminary hydrography was recorded in a sounding volume and the usual Bar Check and Tide reducers applied.

The first day of pipe dragging was recorded in a Wire Drag volume. The times and positions were then copied into a sounding volume and the fathogram scaled, soundings entered and reduced.

The second day of pipe dragging was recorded directly in a sounding volume and the pipe drag data entered under the "Remarks" column.

The effective depth of the pipe drag was obtained directly from the graduated wires and reduced for tide. The wires were graduated from the top of the pipe instead of the bottom but the correction for this was intentionally omitted in order to be on the safe side.

H. TIDES:

A tide staff was installed on the pier and readings taken at 15 minute intervals. The observer recorded the means of three crests and three troughs. The means of these were then used as the readings. The staff was connected to existing bench marks by levels.

A staff reading of 3.71 corresponded to Mean Lower Low Water.

At 13:30 on 14 August, the staff was raised 3.3 feet. From this time on a staff reading of 0.4 corresponded to Mean Lower Low Water.

I. ADEQUACY OF SURVEY:

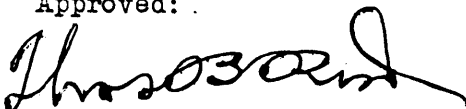
This survey is believed adequate for the purpose intended, namely, to assure that the approaches to the pier are clear.

Respectfully submitted

*H C Applequist*

H. C. Applequist  
Cmdr. C&GS

Approved: .



Thos. B. Reed  
Captain, C&GS  
Commanding, PIONEER



APPROVAL SHEET TO ACCOMPANY

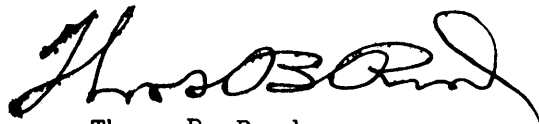
Survey H-7994

(PI-025-52)

The field work was supervised closely and the boat sheet inspected daily.

The records and smooth sheet have been inspected and are approved.

The survey is believed to be adequate.

A handwritten signature in black ink, appearing to read "Thos. B. Reed". The signature is written in a cursive style with a large, sweeping initial "T".

Thos. B. Reed  
Capt., USC&GS  
Com'd'g. Ship PIONEER

STATISTICS

Survey H-7994

(PI-025-52)

Day	Vol. No.	Date	No. of Pos.	No. of Stat. Miles
<u>HYDROGRAPHY</u>				
A (Blue)	1	8 August	141	9.1
A (Red)	2	13 August	152	3.2
B (Red)	3	14 August	<u>168</u>	<u>5.1</u>
TOTALS			471	17.4

<u>PIPE DRAG</u>				
A (Red)	1	13 August	152	3.2
B (Red)	3*	14 August	<u>168</u>	<u>5.1</u>
TOTALS			320	8.3

Area approximately 0.1 square statute mile

\* B Day of Pipe Drag recorded in Sounding  
Volume No. 3.



R.H.C.

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

18 May 1953

Division of Charts: R. H. Carstens

Plane of reference approved in 4  
volumes of sounding ~~records~~ and wire drag records for

HYDROGRAPHIC SHEET 7994

Locality Shemya Island, Aleutian Islands

Chief of Party: T. B. Reed in 1952

Plane of reference is mean lower low water, reading

3.7 ft. on tide staff at Alcan Harbor

4.5 ft. below B. M. 2 (1943)

Height of mean high water above plane of reference is 3.4 feet.

Condition of records satisfactory except as noted below:

*E.C. McKay*

Section of Tides

Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. H-7994

Name on Survey	On Chart No.	On previous survey No.	On U. S. Quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
	A	B	C	D	E	F	G	H		K
<u>Alaska</u>		}	for title							1
<u>Alentian Islands</u>										2
									3	
<u>Shemya Island</u>									BSN	4
<u>Alcan Harbor</u>										5
										6
										7
										8
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										27

Names underlined in red are approved 5-18-53 L Heck



Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. H-7994...

Records accompanying survey:

Boat sheets .2...; sounding vols. .4...; wire drag vols. 1.....;  
 bomb vols. ....; graphic recorder rolls .1 Eny;  
 special reports, etc. .1 Smooth Sheet; 3 Boat Sheet Overlays; 1 Descriptive  
 Report;.....

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet		791	
Number of positions checked		35	
Number of positions revised		1	
Number of soundings revised (refers to depth only)		0	
Number of soundings erroneously spaced		0	
Number of signals erroneously plotted or transferred		0	
Topographic details	Time	1	
Junctions	Time	0	
Verification of soundings from graphic record	Time	2	
Verification by <i>L. J. Jester</i> .....	Total time	29	Date 6-3-53
Reviewed by <i>L. J. Jester</i> .....	Time	29	Date 6-9-53

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-7994

FIELD NO. PI-02552

Alaska-Aleutian Islands, Shemya Island, Alcan Harbor

Project No. CS-343

Surveyed in August 1952

Scale 1:2,500

Soundings:

808 Fathometer

Control:

Sextant fixes on shore signals

Chief of Party - T. B. Reed  
Surveyed by - H. C. Applequist and C. J. Beyma  
Protracted by - G. E. Haraden and G. E. Cook  
Soundings plotted by - G. E. Cook  
Verified and inked by - I. M. Zeskind  
Reviewed by - I. M. Zeskind, 9 June 1953  
Inspected by - R. H. Carstens

1. Shoreline and Control

The source of the shoreline and control is given in the Descriptive Report.

2. Sounding Line Crossings

No crosslines were run; however, where sounding lines were run close to each other, there is adequate agreement in depth.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated.

Except for the steep gradient in the northwest part of the survey, the bottom is generally smooth.

4. Junctions with Contemporary Surveys

No contemporary surveys join the present survey. Charted depths at the limits of the present survey are in adequate agreement with present depths.

5. Comparison with Prior Surveys

- A. H-6873 (1945) 1:2,400  
H-6938 (1943) 1:10,000  
H-6975 (1944) 1:2,400

The above surveys have been superseded by H-7634 (1947) within the common area and are not considered in this review. Several bottom characteristics from H-6873 have been carried forward to the present survey.

- B. H-7634 (1947) 1:5,000

A comparison between the prior and present surveys reveals a number of changes in bottom configuration and inshore detail. The end of the breakwater on the west has eroded about 75 meters. The existing pier has been shortened about 200 meters. Present depths in general are from 2-7 ft. deeper than prior depths, as for example, in lat.  $52^{\circ} 43.90'$ , long.  $174^{\circ} 04.22'$ , where a prior depth of 29 ft. falls in present depths of 36 ft. However, east of the pier in present depths of less than 18 ft., shoaling of as much as 7 ft. has occurred, as for example, in lat.  $52^{\circ} 43.78'$ , long.  $174^{\circ} 04.27'$ , where a present depth of 13 ft. falls in prior depths of 19-20 ft. These changes of bottom configuration and inshore detail are attributed to storm action.

The present survey is adequate to supersede the prior survey in the common area.

- C. Wire Drags

1. H-6974 W.D. (1944) 1:2,400

This wire drag covers the northern portion of the present survey. There are no conflicts between the present survey depths and the effective wire drag depths shown on H-6974 W.D. within the common area.

2. Contemporary Pipe Drag (1952) 1:2,500

While the present survey was in progress, a pipe suspended from the sounding launch was used to drag the southern portion of the present survey. The survey soundings are supplemented by several grounding depths from the pipe drag. There are no conflicts between the present survey soundings and the effective pipe drag depths shown on the attached A & D diagram. No dangerous obstructions were found in the approaches to the pier.

6. Comparison with chartlet attached to Chart 9125 (Latest print date 6-30-52)

A. Hydrography

The charted hydrography originates with H-6873 (1945) and H-7634 (1947) which have previously been discussed and with supplemental information from the present survey prior to verification and review.

No important differences were noted between the charted and present depths except for the 31-ft. depths in the vicinity of lat.  $52^{\circ} 43.90'$ , long.  $174^{\circ} 04.13'$  which have not been charted. *Added to chart 9125 3/25/1956*

The present survey supersedes the charted information.

B. Aids to Navigation

Red Nun Buoy No. 4 charted in lat.  $52^{\circ} 44.12'$ , long.  $174^{\circ} 04.20'$ , is located on the present survey about 200 meters south of its charted position.

There are no other aids to navigation within the limits of the present survey.

7. Condition of Survey

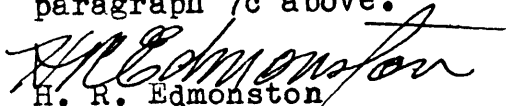
- a. The Descriptive Report and sounding records are complete and comprehensive.
- b. The smooth plotting was accurately done.
- c. No bottom characteristics were obtained.


8. Compliance with Project Instructions

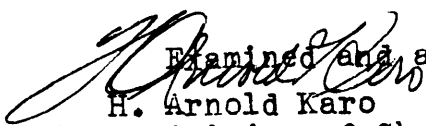
The survey adequately complies with the Project Instructions, except as noted in paragraph 7c above.


9. Additional Field Work Recommended

This is an excellent basic survey and no additional field work is recommended. As a matter of record, however, attention is directed to the lack of bottom characteristics mentioned in paragraph 7c above.

  
H. R. Edmonston  
Chief, Nautical Chart Branch

  
G. R. Fish  
Chief, Section of Hydrography

  
Examined and approved:  
H. Arnold Karo  
Chief, Division of Charts

  
Earl O. Heaton  
Chief, Division of Coastal Surveys



