6457

6457

Form 504
Rev. April 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 2139
Hydrographic } Reg. No. H6457

State S.E. Alaska

LOCALITY

~~Southeastern Alaska~~

Glacier Bay

Beardslee Islands

1939

CHIEF OF PARTY

Benjamin H. Rigg

U. S. GOVERNMENT PRINTING OFFICE

Form 537
Ed. Dec. 1930

REG. NO.

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.

Field No. 2139 H6457

REGISTER NO. H6457

State ~~Alaska~~ South Eastern Alaska

General locality ~~Southeastern Alaska~~ Glacier Bay

Locality ~~Glacier Bay~~ Beardslee Islands

Scale 1/20 000 Date of survey June, July, Aug., Sept., Oct., 1939

Vessel WESTDAHL

Chief of Party Benjamin H. Rigg

Surveyed by G.A.N. & W.F.D.

Protracted by H.C.P

Soundings penciled by H.C.P

Soundings in fathoms ~~feet~~

Plane of reference Mean lower low water

Subdivision of wire dragged areas by

Inked by G.B. Littlepage

Verified by G.B. Littlepage

Instructions dated March 10, 1938 & April 19, 1939

Remarks: This report was written from boat sheet, and verified from smooth sheet in processing office.

U. S. GOVERNMENT PRINTING OFFICE

DESCRIPTIVE REPORT
to accompany
SHEET NO. 2139 (FIELD), REG. NO. H6457

MOTOR VESSEL WESTDAHL 1939 BENJAMIN H.RIGG, COMMANDING

PROJECT HT - 221

INSTRUCTIONS:

This survey was made in compliance with the Director's Instructions dated March 10, 1938 and the Director's Supplemental Instructions dated April 19, 1939.

SURVEY METHODS:

Standard survey methods were used throughout. The lines were controlled by sextant fixes; the soundings were taken with hand lead in shoal water and with wire in deeper areas except when ship hydrography was done. The WESTDAHL used the Dorsey Fathometer No. 3 for sounding. Specific gravities and serial temperatures were taken during the season and vertical casts were taken to check the fathometer.

CONTROL:

All topographic signals on this sheet were located after control by second and third order triangulation had been established. No signals were located by the hydrographic party. T-6677 (1938-39) T-6678 (1939)

DISCREPANCIES:

Since this report was written from the boat sheet no discrepancies other than those in the field can be noted. None of the latter occurred. It is hoped that after the sheet has been finished by the processing office that there will be an opportunity to discuss any discrepancies. Pages 16 & 17 of this report.

DANGERS:

Although the shoals in the entrance to the Beardslee Islands between Strawberry and Young Islands are comparatively deep they cause numerous swirls and rips. To avoid the worst of these a description of the shoal locations is necessary. The development was done on these spots after receipt of a letter* from the Washington office instructing this party to investigate shoal areas on the limit of the 1938 survey. H-6340(1938) *Recommended in review of H-6340(1938)

On the shoal in the middle of the entrance a least depth of 6 fathoms, 5 feet was found in Lat. 58° 29.52', Long. 136° 01.30'.

In Lat. 58° 29.04', Long. 136° 01.10' a 10 fathom spot was found.

A shoal off ACOAL was developed and the following least depths found: in Lat. 58° 29.07', Long. 136° 00.45', 5 fathoms; in Lat. 58° 29.05', Long. 136° 00.32', 4 fathoms, 4 feet; in Lat. 58° 28.95', Long. 136° 00.60', 5½ fathoms. Because of the strong currents over this shoal the launch was drifted over the shoalest spots to obtain the least depth.

In Lat. 58° 29.96', Long. 135° 57.75' is a reef that should be avoided in entering the sheltered bay to the southward. This reef is almost connected to a larger reef to the eastward at low water. Just south of the former reef a ledge puts out from the shoreline and makes pilotage between the reef and ledge quite difficult. Controlling depth 1⅔ fms. MLLW.

A reef in Lat. 58°28.8', Long. 135°56.0' almost cuts in half the sheltered bay in which it is located. It is in the middle of the bay and may be easily avoided at any stage of the tide except high water when most of it is covered.

In Lat. 58°28.45', Long. 135°52.00' several silt bars hinder further approach to the Bartlett River.

It should be kept in mind by anyone using these waters that large low water areas and off-lying reefs fringe most islets.

The islet in Lat. 58°30.10', Long. 135°57.15' is in the middle of a low water area that is 700 meters long in a northwest-southeast direction and 400 meters in width. In addition there is a cluster of rocks awash 400 meters due east of the islet and some reefs, heretofore mentioned, to the westward.

In Lat. 58°31.06', Long. 135°54.90' a shoal with least depth of 3½ feet was found. This was investigated at a minus tide to insure accurate determination of the extent of the shoal area. Navigation between this shoal and the small wooded island to the northward is not recommended.

A small wooded island in Lat. 58°31.25', Long. 135°55.10' should not be approached except from the east. A ledge puts out to the westward of this island and extends to Lat. 58°31.05', Long. 135°55.87'.

Reefs awash at some stage of the tide were located in Lat. 58°31.10', Long. 135°56.24'; in Lat. 58°31.22', Long. 135°56.30'; and in Lat. 58° 31.27', Long. 135°56.20'.

An islet in Lat. 58°31.52', Long. 135°55.80' is surrounded by a large ledge about 500 meters in diameter. To the northwest of this islet in Lat. 58°31.70', Long. 135°55.90' is a reef that is almost connected to the ledge around the islet. Awash MHW

In lat. 58°31.28', Long. 135°57.13' a high water rock is surrounded by a ledge about 300 meters in diameter.

A reef was located in Lat. 58°32.10', Long. 135°55.70'. Bares 12 ft MLLW

In Lat. 58°31.80', Long. 135°54.30', a reef was located that is connected to the large island to the westward by an under water ridge.

A reef in Lat. 58°32.35', Long. 135°54.00' has its highest part just visible at mean high water and is almost connected with a reef to the westward in Lat. 58°32.26', Long. 135°54.40' and with a second reef to the northeast in Lat. 58°32.50', Long. 135°53. 95'. These reefs are in the middle of a channel between ~~two~~ LINK and Stoney islands. The channel between the reefs and the south island has much deeper water than the one to the north. see verified report

A reef was located in Lat. 58°31.70', Long, 135°52.40'.

In Lat. 58°31.80', Long. 135°51.70' a least depth of 6 fathoms, 4 fms in ø 58-32.5 λ-135°-53.6 feet was found on a small shoal.

Reefs in Lat. 58°32. 12', Long. 135°51.50'; Lat 58°32. 20', Long. 135° 51.44'; and Lat. 58°32. 25', Long. 135°51. 47' are all connected to one another and to the shore by an under water ridge. This ridge extends out to about mid-channel.

The bight in Lat. 58°32.66', Long. 135°51.0' is extremely foul.

A shoal in Lat. 58°32. 67', Long. 135°51.98'was developed and a least depth of 18 fathoms found.

Reefs were located in Lat. 58°33.32', Long. 135°53.30' and in Lat. 58° 33.50', Long. 135°53.35'.

In Lat. 58°33.1', Long. 135°55.4' a spit extends about 230 meters offshore and hinders pilotage in the channel to the eastward. WEST Shoals of 2 fms and 1 fm lie offshore to westward.

In Lat. 58°33.13', Long. 135°55.60' a least depth of 5 feet was found on a shoal running north and south. 260 meters south of this spot a depth of 1 fathom exists on the same shoal, ~~150~~ 280 meters north northeast is a reef.

On a shoal in mid-channel a least depth of 1 fathom, 5 feet was obtained (see below) in Lat. 58°33.28', Long 135°56.12'. φ 58-33.25 λ 135-55.98 1467

In Lat. 58°34.10', Long. 135°55.60' a least depth of 3 feet was found after development.

A reef exists in Lat. 58°34.26', Long. 135°56.30' and in a shoal area to the westward a sounding of 1 fathom was recorded in Lat. 58°34.20', Long. 135°56.70'.

A reef roughly triangular in shape and 400 meters across was located in Lat. 58°32.5', Long. 135°58.0'. Awash MHW

In Lat. 58°32.65', Long. 135°56.90' a small reef lies in the middle of the channel. Rk awash MLLW

In Lat. 58°31.55', Long. 135°57.50' a spit runs out about 300 meters from shore and a shoal water area exists to the northward causing vessels to give the spit a wide berth when attempting the channel north of the spit.

In Lat. 58°31.9', Long. 136°00.2' a reef about 500 meters long and 180 meters wide lies W of Strawberry Island. Awash MHW.

The small island on which △REEF is located is bordered by a boulder strewn ledge about 930 meters long and 300 meters wide. Off the southerly tip of this ledge is a cluster of rocks awash in thick kelp. More rocks awash exist 250 meters southeast of △REEF and are in kelp. A huge kelp patch runs southwestward of △REEF to another reef in Lat. 58°33.1', Long. 136°01.4'. Currents are bad around these reefs and boats should give them a wide berth.

Reefs were located by the topographer but no hydrography was done around them in Lat. 58°36.33', Long. 135°59.80'; Lat. 58°36.65', Long. 135° 59.1'; Lat. 58°36.30', Long. 135°58.55'; And Lat. 58°36.20', Long. 135° 59.00'. A chain of rocks awash extend 300 meters off the northerly tip of the latter reef. Beyond limits of H-6457 (1939)

In Lat. 58°35.15', Long. 135°58.80' an islet is surrounded by a ledge that extends 1050 meters to the northwestward, 800 meters to the west-southwest, 950 meters to the southward, and 550 meters to the northeastward. To the southeastward another reef is connected to this ledge by a chain of rocks awash and extends 1000 meters. To the ~~westward~~ eastward is a foul area with occasional rocks awash and thick kelp.

In Lat. 58°34.30', Long. 135°58.15' is another reef with foul area and kelp to the northward.

Reefs surrounded by foul area and thick kelp were located in Lat. 58°34.53', Long. 135°57.80'; Lat. 58°34.60', Long. 135°57.65' and Lat. 58°34.86', Long. 135°57.70' by the topographer. No attempt was made to sound in this area because of the numerous reefs and the extremely thick kelp. Hydrography on H-6575 (1940)

The islets on which △TWIN and ⊙Gus, (φ 58°-34.5 λ 135°-57.6) are located, are bordered by a ledge 1000 meters long and about 550 meters wide. To the northward of this ledge is another that is crescent shaped and is connected to the mainland near ⊙Ink. These ledges are bordered with thick kelp and should be approached with caution if at all.

In general, it may be said that the navigator should never approach any of these reefs and ledges without local knowledge because glaciation has made the whole locality a weird mass of contradictions.

ADDITIONAL WORK:

No additional work inside the limits of the present survey is considered necessary.

CHANNELS:

probably the best entrance to the Beardslee Islands lies between Strawberry Island and Young Island. Assuming the navigator is at Lat. 58° 30.0', Long. 136°02.5', which will bring him far enough north and west of the rips, he may steer 90°T. for 1⅛ miles (the southwest tip of Strawberry Island bears 292°T.) to a good point of departure for the various channels he may wish to use. This point will be considered the departure for all further courses discussed unless otherwise stated.

To enter the bottle-neck bay on the east side of Young Island the boat should keep on the 90°T. course until the most northerly tip of Young Island (near ⊙Cog) is broad on the starboard bow. Pilotage from here on is difficult and should only be attempted at low water when most dangers can be seen and identified. The boat should pass midway between the ledge off the northerly tip just mentioned and the rocks awash which lie 140 meters off the ledge. 8 feet can be carried through here. After completing this passage a boat should head for the east side of the entrance channel which is now visible until the aforementioned tip is on the starboard beam. A mid-channel course with a controlling depth of 12 feet will bring the boat in to the north end of the bay. When passing from the north end to the southerly arms of the bay a vessel should pass mid-way between the reef in the middle of the bay and the east shore where there is a controlling depth of 6 feet. By keeping in the middle of these arms a vessel that is sufficiently shallow draft to have traversed the entrance is is comparatively deep water.

To approach the north entrance to the Bartlett River; that is, to the silt bars which block the north approach; a vessel should steer a course of 65°T. for 1½ miles from the point of departure, there the small wooded island in Lat. 58°31.25', Long. 135°55.10' will bear ~~358°~~ T. Thence, on course 120°T. for 1¾ miles where the west end of the small wooded island will be in range with the east end of a nearby grassy island. (A course of 115°T. from here will bring the vessel to a bay where anchorage may be had.) Thence, on course 53°T. for 1½ miles when the east tangent of the small wooded island will bear 283°T. Thence, on course 112°T. for 4 miles, where the vessel will be in mid-channel. Steer mid-channel courses in a southerly and southeasterly direction the remainder of the way. On these last courses a controlling depth of 4¾ fathoms exists.

From the point in mid-channel mentioned above a boat to reach the northeast section of the islands should steer 29°T. for 7/8 miles. (From here a small bay to the southeast may be traversed by steering a course mid-way between the enveloping sides.) Thence, on course 348°T. for 7/8 miles. From here, to take the easterly of the two northerly arms steer mid-channel courses; to take the west arm, keep about 250 meters off the west side of the point which separates the two arms. In the west arm the vessel may sheer over to mid-channel when a mile up and steer mid-channel courses to round the linked island to the westward. A wide berth should be given the north end of this island. Turning to the southward after rounding this point a boat drawing under 6 feet may return to the outer islands and Glacier Bay proper by steering in mid-channel until the south tip of the linked island is on the port quarter. The boat may then head southerly midway between the small wooded island and the island to the eastward until the entering course is reached.

To reach a point ¼ mile northeast of a long slim island in Lat. 58°32.0', Long. 135°56.4' for the traversing of the water to the northward three ways are available.

1. From the point of departure on Lat. 58°30' a course of 29°T. should be followed for 2 1/8 miles when the west tangent of the irregular shaped island in Lat. 58°31.6', Long. 135°57.0' will

bear ~~310°~~ 139° T. Thence, on course 72° T. until the southwest tangent of the saddle shaped island in Lat. 58°32.4', Long. 135°57.0' is in range with the highest part of the small island on which △ REEF is located. Thence, steer a mid-channel course until the northeast tip of the long slim island is on the starboard quarter. About 400 meters run on course 70° T. will bring the boat to the point ¼ mile northeast of the long slim island. If route 1 is followed, by swinging north before the point is reached further traverse to the north may be shortened.

2. From the same point of departure as in the first case steer 50° T. for 2 miles when a lone rock in Lat. 58°31.38', Long. 135° 57.13' will bear 265° T. Thence, on course 33° T. for 5/8 miles when the southwest tangent of the long slim island will bear 272° T. Thence, on course 15° T. for 5/8 miles when the point off the long slim island ~~is reached~~. Or this last leg may begin on course 65° T. run for ½ mile, change course to 324° T. and run ½ mile. The narrow channel south and east of the long slim island has a controlling depth of 5 fathoms.

3. From the same departure as in previous cases steer a course of 65° T. for 1½ miles where the small wooded island bears ~~358°~~ T. Thence, on course 120° T. for 3/4 miles where the west end of the small wooded island will be in range with the east end of a nearby grassy isle. Thence, on course 53° T. for 1 1/8 miles when the east tangent of the small wooded island bears 312° T. Thence, on course 340° T. for ⅝ miles and then on course 322° T. for 1 mile. This route, though longer, is in much deeper water and is less tortuous than the others.

From the point ½ mile northeast of the long slim island proceed on course 357° T. for 7/8 miles where the small island on which △SPIDER is located is broad on the starboard bow. Thence, on course 348° T. for not more than a mile. 5 fathoms is the controlling depth to this point. Navigation from here on is hazardous and should not be attempted without local knowledge and then only with boats drawing not more than 5 feet.

The channel between Strawberry Island and the irregular shaped island is very deep; boats favoring the west side of this channel are in no danger.

Safe passages with enough water for any vessel were found between Strawberry Island and the reef in Lat. 58°31.9', Long. 136°00.2' and between this reef and the one on which △REEF is located. Mid-channel courses are recommended because of the swift current.

Boats may cruise in the water east and southeast of △REEF but it is recommended that the west side be favored; many ledges and reefs lie off the east side.

No attempt should be made to pass between △REEF and the reef to the southwestward of it. The survey party found enough water for most boats but experienced difficulty with current and kelp.

The channel north of the island on which △SWIM is located, Lat. 58°33.8', Long. 135°57.5', is not recommended. This channel has a controlling depth of 5 feet but numerous low water areas make navigation almost impossible unless at low water when the dangers are visible. Current and kelp are a further hindrance.

The channel north of the saddle shaped island has a reef in the center and should not be used by any but shallow draft vessels. When entering this channel from the westward give the reef in Lat. 58°32.5', Long. 135°58.9' a wide berth to the southward. The entrance is best at low water when the spits on both sides are visible.

From the above-mentioned channel another channel runs northward to the fox farm buildings at Ole. This channel has a controlling depth of 4½ feet. Boats may continue in another channel running northeast with a controlling depth of about 2 fathoms. Latter recommended.

The channel between Young and Bartlett Islands is a high water channel and has numerous rocks to avoid even at high tide. It should not be attempted.

ANCHORAGES:

Vessels may anchor in the bay on the north side of Young Island in 5 fathoms, muddy bottom. This bay offers protection from the south and east; ice is often found here.

The bottleneck bay to the eastward of Young Island has anchorage in muddy bottom at various depths up to 11 fathoms and protection from any weather. The drawback to this anchorage is its dangerous approach which has already been discussed.

A good anchorage exists in Lat. 58°29.5', Long. 135°54.1' in a bay that offers shelter on all sides but the north. However, northerly weather would have to be severe to bother vessels here. Ice bergs were seen in this bay at various times during the working season.

A satisfactory anchorage for most any vessel may be had on comparatively flat bottom south and southeast of the small wooded island. Spider I. Vessels may anchor here in 5 to 6 fathoms, muddy bottom, and have ample swinging and maneuvering room. It is recommended for larger vessels and has protection in all weather.

The WESTDAHL anchored in 25 to 28 fathoms, muddy bottom, in Lat. 58°30.9', Long. 135°59.5'. This anchorage was used before the other bays were surveyed yet it was satisfactory except in southerly blows. Strong currents were experienced here, but the east tip of Strawberry Island prevented ice bergs from sweeping across the anchorage.

Fishing boats sometime anchor near the fox farm in Lat. 58°33.1', Long. 135°57.1'. Protection from all sides is to be had here in 2 to 5 fathoms, muddy bottom. The tender was anchored here several times but it is not recommended for larger boats. Then, too, the approaches are dangerous without local knowledge.

A good anchorage in 2 to 6 fathoms, muddy bottom, exists in the area west of the linked island. An anchorage in Lat. 58°33. 35', Long. 135°54.20' in this vicinity provides protection from all weather. The approach to this place is difficult, however, and the alternate route from the westward is long and winding.

The channel east of the saddle shaped island and west of the island on which △SPIDER is located has a very irregular bottom and the wind funnels through from the north and south with increased velocity.

In the "back" or easterly areas several anchorages for small boats are available. In the arm east of the linked island anchorage may be had in 3 to 12 fathoms, muddy bottom, with protection from all weather. In the arm to the east of this (Lat. 58°33.5', Long. 135°51.5') several spots from 4 to 19 fathoms, muddy bottom, are available and have protection. The bight in Lat. 58°32.6', Long. 135°51.0' is foul and is not recommended. The bay in Lat. 58°31.3', Long. 135°51.2' had anchorage in about 12 fathoms, muddy bottom, with good protection and adequate swinging room. North of the silt bars in the north approach to the Bartlett River is an anchorage in Lat. 58°28.6', Long. 135°52.1'. Small boats may anchor here in 5 fathoms, muddy bottom, with protection.

COMPARISON WITH PREVIOUS SURVEYS:

This is the original survey.

GEOGRAPHIC NAMES:

Strawberry, Young,* and Bartlett Islands are the only islands already named on this sheet. Inquiries addressed to people in this vicinity produced no more names than those charted. Copy of a special report relative to new names is attached to this report. *Young Island is called Rush Island on T 6677 (1938-1939) Young Island recommended to USGS

COAST PILOT NOTES:

All notes to be included in the Coast Pilot will be submitted in a separate report.

LANDMARKS FOR CHARTS:

Landmarks for charts will be submitted on Form 567. Chart letter 750 (1939) 438 (1940)

TIDAL DATA:

A portable automatic tide gage was maintained in the cove on the north end of Willoughby Island in Lat. 58°36.5', Long. 136°07.1'. This gage was used for reducing all soundings on this sheet. Tidal reducers were entered to the nearest foot. Not in area of H-6457 (1939)

FATHOMETER CORRECTIONS:

Fathometer corrections will be included in a separate report. Included in this report. Specific gravities and serial temperatures were taken at adequate intervals to obtain salinities.

LIST OF SIGNALS:

Triangulation stations;

AINT 1939	HEAD 1938	POOR 1938
ANCHOR 1939	HIVE 1939	PICK 1938
ARD 1939	KICK 1939	REEF 1938
AXLE 1938	LAWN 1939	RANK 1939
BEARD 1907-38	LEAD 1939	SOCK 1938
BERRY 1938	LITE 1939	SOON 1938
COAL 1938	MARBLE 1907-38	SOLE 1939
CENTER 1939	MADE 1938	SPIDER 1939
CRAB 1939	MAZE 1939	STRAW 1938
GOAT 1938	MINE 1938	SWIM 1938
GORE 1939	MORE 1938	TWIN 1939
N. GABLE Fox House 1938	NAME 1938	VEGA 1939
		WASH 1939

Topographic stations: T-6677 (1938-39) and T-6678 (1939)

Abe	Bad	Cob	Fed	Hex	Jax	Map	Pan	Red Tab War
Ace	Bed	Cut	Fid	Hid	Jet	Men	Pap	Rig Tag Was
Act	Beg	Day	Fin	His	Jew	Mex	Paw	Rip Tap Wig
Ada	Bib	Dam	Fix	Hod	Job	Mob	Par	Rod Tar Wit
Ado	Big	Deb	For	Hog	Jog	Mud	Pay	Roe Tea
Aft	Bit	Den	Fox	Hop	Kip	Mut	Pet	Roy Tex
Ago	Bim	Dim	Gab	Hot	Kin	Nat	Pep	Rug Tip
Ail	Bin	Dix	Gal	How	Ken	Net	Per	Run Ulm
Aim	Bow	Dog	Gar	Hut	Keg	New	Pig	Sac Urn
Air	Bob	Dub	Gas	Hup	Lap	Nib	Point	Sad Val
Amp	Bon	Eat	Gem	Ice	Lad	Nix	Pol	Sam Vim
Ant	Bum	Ear	Get	Ida	Lax	Oak	Pop	Saw Von
All	But	Eel	Grass	Imp	Lac	Oat	Pun	Sin Yam
Awe	Bud	Elf	Gun	Ira	Lit	Oar	Pup	Sis Yap
Arc	Cab	Emu	Gus	Ivy	Lee	Ode	Rag	Sog Zag
Bay	Cap	Erg	Guy	Jam	Lot	Ole	Ram	Sop Zed
Bag	Cal	Fat	Hen	Jan	Low	Ora	Rat	Sot Zip
Baa	Cog	Fag	Her	Jane	Mal	Pan	Ray	Sup

* Duplicated

STATISTICS:

Statute miles of sounding lines..116.3 fm. - 317.2 wire - 262.6 hand lead
.....696.1 total

Number of soundings..3206 fm. - 7147 wire - 9666 hand lead
.....20019 total

Number of positions...5505
Area....33.8 square statute miles

COMMENTS:

Swift current was found in most all channels surveyed on this sheet. It was particularly bad between Strawberry Island and the islands to the east and south. This strong current south of Strawberry Island hindered development of the shoals in that area. It was found necessary to use the WESTDAHL on some of these lines because the tender could make no headway. Effort was made to utilize the slack periods but these were too short to accomplish much. Rips occur near these shoals and have caused the WESTDAHL to spin completely around.

At ⊙Now (How) on Strawberry Island is an abandoned fox farm; this farm has several frame buildings and a marine railway. The latter; though in bad shape, may be used after extensive repairs are made.

Another fox farm, occupied by one man, is located at ⊙Ole in Lat. 58°33.12', Long. 135°57.14'.

The outer areas of the Beardslees often have ice bergs which vary in number with the weather and tide, but the ice is never as thick as it is around the reefs to the north.

The bottom is generally muddy and it may be stated that this mud is exceptionally soft and sticky. While anchored south of Strawberry Island in about 28 fathoms the fathometer showed two distinct depths of 2 fathoms difference. Mr. Russell Wright was aboard at this time and he and Lieut. Rigg were eager to find the reason for the disparity. The decision ~~was~~ reached was to the effect that the fathometer was recording the depth to the mud bottom and also the hard bottom under this. A hand lead sounding here showed soft mud and the leadsman reported deep penetration of the bottom. This penetration, incidentally, caused some of the odd intervals between soundings in the Beardslees. Often the leadsmen had difficulty in extricating the lead from the soft, sticky bottom.

Animals, fowl, and fish are reported plentiful in this area. The hydrographic party saw several black and brown bears but no deer or goats; Wolf and coyote tracks were found in the northeast section of this sheet in and near Beartrack Cove. Near △ ANCHOR large numbers of geese were seen nesting and later the goslings were noticed in several parts of the east area. Ducks of several varieties are to be found in all parts of the Beardslees along with numbers of eagles, cormorants, etc. Halibut fishermen set their lines around Strawberry and Young Islands: And the hydrographic party found several clam and ~~goey~~ geoduck beaches.

φ 58°-31'5
λ-135°-51'

Respectfully submitted,
William F. Deane
William F. Deane, Aid

Approved:

Benjamin H. Rigg, Commanding Officer.

Inspected & forwarded
A. M. Sobieralski
Officer in Charge,
Seattle Processing Office.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. H6457

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

Number of positions on sheet	5505
Number of positions checked	67
Number of positions revised	19
Number of soundings recorded	20019
Number of soundings revised	57
Number of soundings erroneously spaced	79
Number of signals erroneously plotted or transferred	0

Date:

Verification by G. B. Littlepage Time: 277 hrs

Review by Harold F. Aligman Time: 56 hrs

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VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H - 6457 (1939

Verified and Inked by E B Littlepage Date Sept 23 1941

1. The descriptive report was consulted and appropriate action taken. ✓

2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude. ✓

3. All references to survey sheets mentioned in the descriptive report include the registry number and year. ✓

4. Geographic names of hydrographic features are in slanting lettering and of topographic features in vertical lettering. ✓ In Pencil

5. All items effecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken. ✓

6. All positions verified instrumentally were check marked in the sounding records. ✓

7. All critical soundings are clear and legible. ✓

8. The metal protractor has been checked within the last three months. ✓

9. The protracting and plotting of all bad crossings were verified. ✓

10. All detached positions locating critical soundings, rocks or buoys were verified. ✓

11. The boat sheet was compared with the smooth sheet. ✓

12. The spacing of soundings as recorded in the records was closely followed. ✓

13. The bottom characteristics were shown on outstanding shoals. ✓

14. The reduction and plotting of doubtful soundings were checked. ✓

15. The transfer of contemporary topographic information was carefully examined.

16. All junctions were transferred.

17. The notation "JOINS H " was added for all contemporary adjoining or overlapping sheets now registered.

18. The depth curves have been drawn to include the significant depths.

19. All triangulation stations and transfer of topographic and hydrographic signals were checked by the field party.

20. Heights of rocks were checked against range of tide.

21. Rocks transferred from topographic survey have a dotted curve where shown thereon.

22. Unnecessary pencil notes have been removed.

23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.

24. The low water line and delineation of shoal areas have been properly shown (see letter of October 20, 1934).

25. Degree and minutes values and symbols have been checked.

26. Source of shoreline and signals (When not given in report).

T-6677 (1939) (1938-39)
T-6678 (1939)

27. Depth curves were satisfactory ~~except as follows~~:

28. Sounding line crossings were satisfactory ~~except as follows~~:

29. Junctions with contemporary surveys were satisfactory ~~except as follows~~:

30. Condition of sounding records was satisfactory ~~except as follows~~:

31. The protracting was satisfactory ~~except as follows~~:

32. The field plotting of soundings was satisfactory except as follows:
The accuracy of the plotting was very good. There was, however, no selection of soundings. Every sounding recorded was penciled on the smooth sheet and were so small they could not be read in all but a few open areas on the sheet. The penciling of all these sounding which could not possibly be inked made the surface of the paper so bad that a good job of inking the sheet was impossible
Noted in Review

33. Notes to reviewer:

1- The channel between the reefs and Kidney Island, located in Lat 58°32.2' Long 135°54.0', referred to on Page 2 ✓ P 12 of descriptive report has a shoal spot at its N.E. entrance with a least depth of 5 ft. Deeper water to Southward.

2- A discrepancy referred to in the D.R. Page 16 under "Corrections and Additions" item 5. The 19 fm sdg referred to was corrected in the field ✓ page 31 Vol 12. The original Sounding would have given 29 fms at this spot in good agreement. In view of the fact that there is a nearby shoal with a least depth of 18 fm, the 19 fm Sounding was retained and plotted
19 accepted (58°32.2 135°54.0) 81-824

3- Rock awash plotted Pos 83 y + Lat. 58°30.2' Long 135°54.6' This rock plotted at P^or No evidence of it on B.S., T-6077 (1938-39) or airphotos
See note in sdg records page 25 Vol. 10 ✓ See note
Noted in Review

HYDROGRAPHIC SURVEY NO. H6457

Smooth Sheet One

Boat Sheet One

Records; Sounding 17 Vols., Wire Drag ___ Vols., Bomb ___ Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) -----

Special Chart for Lighthouse Service -----
(Circular Nov.30, 1933)

Hydrography: Total Days _____; Last Date _____

Remarks _____

2776

	Remarks	Decisions
1		580 355
2		"
3		580355 U.S.G.B
4		"
5		585355
6		580355 U.S.G.B
7		585 355
8		"
9		"
10		—
11	Correctly placed on W. side of Glacier Bay entrance.	—
12		580 355
13		585 360
14		585 355
15		585 360 U.S.G.B
16		"
17		585 355
18		"
19	Cards have been submitted to Board	580 355
20	for all except 3, 6, 13, 15 (previous decisions)	
21	and 10, a duplicate of 19. ~~No. 11 does not~~ belong on this sheet.	
22		
23		
24		
25		
26		
27		

M 234

Copy. original filed with this as G.W.LS, 1940

GEOGRAPHICAL NAMES

HYDROGRAPHIC SHEETS 1139, 2139, & 2239 H-6459 (1939) H-6457 (1939) H-6458 (1939-40)

Project HT-221 1939 Benjamin H. Rigg, Commanding

As a means of identification and stress on the chart and simplified Coast Pilot description it is suggested that the following features be given names:

1. FINGERS BAY: Sheet 1139 is a survey of this bay; the five parts of the bay suggested the name. Because of its numerous anchorages it is desirable that this bay be named to avoid verbose description.

2. JOHNSON COVE: This cove is on the north end of Willoughby Island and is known locally as Johnson Cove because a fox farmer by the name of John Johnson has lived there for several years. It is realized that the U. S. Board of Geographical Names frowns on the naming of features after living persons. In the event it cannot be officially named Johnson Cove the alternate name of WILLOUGHBY COVE is suggested by this party.

3. BOULDER ISLAND: Boulder ? The small island on which Triangulation Station Reef is located is a menace to navigation and a distinctive landmark and should be named on the chart. The suggested name comes from the boulder strewn area of the island.

For further information regarding names it is suggested that the Washington Office query Mr. A. E. Trager of the National Park Service. Mr. Trager spent several weeks in Glacier Bay this summer in the interest of the National Park Service and it is thought that he may have made some recommendations regarding names, or may have some suggestions to make.

An effort was made to obtain all information regarding geographical names from persons who frequent the area. No names were found for the features listed in this report. Captain Smith who is a licensed guide, pilot, and at present is engaged in mining in Glacier Bay in the vicinity of Reed Inlet, has used "Fingers Bay" for anchorage as long as ten years, yet, when he told me about it, he said that he never heard of any name for the place. Johnson who lives within two miles of "Fingers Bay" knows of no name. It is felt that the word of these men are authority enough to assure us that there are no well established local names.

Benjamin H. Rigg, H.& G.E.,
Chief of Party.

Hdq Original forwarded. BHR

CORRECTIONS AND ADDITIONS

Descriptive Report

to accompany Sheet Register No. H-6457 (1939)

DISCREPANCIES

Lat. 58° 28.49'	Pos. 38p to 39p (5/6 fm. to 4/6 fm.) and 91n to 92n (2-1/6 fms.). This may be a reef along the shore.	on edge of ledge
Lat. 58° 29.7' Long. 136° 01.7'	Pos. 141b to 142b (26 fm. to 25 fm.) and 56c (28 fms.)	Not important uneven bottom 24 to 30 fms.
Lat. 58° 31.44' Long. 135° 52.12'	Pos. 41cc-42cc (10-3/4 fm.); 115aa (11 fm.); and 37cc-38cc (9-1/2 fm.). These soundings all fall on the same spot. (within 10 to 15 meters.)	Shoalest sounding plotted uneven bottom
Lat. 58° 32.03' Long. 135° 57.68'	Pos. 2-3q (7-3/4 fms. H.L.) and 177-178pp (10-3/4 fm. Machine). These two soundings coincide.	on edge of steep slope 7¾ fms plotted
Lat. 58° 32.69' Long. 135° 52.10'	Pos. 55-56gg (26 fms.) and 72-73ff (19 fms.). 19 fm. sounding falls in a developed shoal area and may be ~~a pinnacle rock~~. On edge of shoal with depths of 18 to 23 fms. & 21 and 23 fms close by.	See verification report
Lat. 58° 32.70' Long. 135° 53.32'	Pos. 31gg (28 fms.). This sounding falls between 23 fms. and 14 fms. 13	Unimportant Accepted. Uneven bottom
Lat. 58° 33.35' to 33.45' Long. 135° 56.15'	Pos. 5-6uu and 12-13mm. The boat sheet shows that a split was intended here, but because of the wrong location of Signal ADO on the boat sheet, these lines coincide on the smooth sheet.	Lines in good agreement as to depth.
Lat. 58° 33.95' Long. 135° 53.39'	Pos. 186-187hh (16 fms.) and 159-160hh (19 fms.) These two positions do not actually coincide, but the 16 fm. sounding falls outside the 19 fm. sounding. This may be either a rock or have been an error in time recording.	16 fms accepted
Lat. 58° 35.59' Long. 136° 0.9'	Pos. 182-183H (63 fms.) and 35-36vv (70 fms.) At this crossing the 63 fm. (fathometer) sounding falls outside of the 70 fm. (wire) sounding. & Appears too deep.	63 fm plotted agrees closely with Sdgs of H-6575 (1940)

CORRECTIONS AND ADDITIONS, H-6457, Continued:

The shore line of this sheet was compared with a tracing of Topographic Sheet T-6677. (1938-39) (1939) Changes were made where the hydrographic positions plotted ashore. (Low water line on H-6457 (1939) revised to fit sdgs.)

In Latitude 58° 33.32', Longitude 135° 53.30', the topographic sheet T-6677 (1938-39) shows one reef. A line was run splitting this reef in two parts by the hydrographic party. These parts connected between sdgs. Line splitting reef run at HW Probably crossed highest portion between sdgs. ~~Shown on Hydro as 2 reefs bearing 4 ft MLW~~ Air photos Acc. No. 1063 Show a single reef approx. as on T-6677 (1938-39)

Latitude 58° 28.5', Longitude 135° 58'. This island is named Rush Island on the topographic sheet T-6677 (1938-39) while in this report it is called YOUNG ISLAND. Hydrographic sheet has both of these names. Young Island Rush Island incorrect. See letter of 11/27/40 in D.R. of T-6677 (1938-39)

FATHOMETER REPORT

OPERATION AND CORRECTIONS

U.S.C. & G.S.M.V. WESTDAHL

1939

Project HT - 221 Benjamin H. Rigg, Chief of Party

1. Operation.

The Dorsey No. 3 Fathometer was tested in the waters of Lake Union and Lake Washington, before leaving for Alaska in the spring. At that time it worked satisfactorily in the available depths and was apparently in good working order. Enroute to Ketchikan it was tried several times and failed to work at all. The Wireless Operator reported that the difficulty was no doubt caused by broken connections due to vibration. The period from May 1 to May 21 was spent in working on adjustment and checking over the wiring with little success. Depths up to 30 fathoms were recorded with a fair degree of reliability but deeper depths were unreliable. It seemed that just at the time we were ready to use the fathometer it would refuse to work. At this point I wrote the office advising the Director of our difficulties and was advised that Mr. Wright would be ordered to the Westdahl to overhaul the apparatus.

Mr. Wright arrived in Hoonah on June 27 and completed the alterations on August 6. In a test we obtained soundings in 160 fathoms of water with no trouble. It was thought that this was proof that the instrument would function for the depths encountered in Glacier Bay. Alterations made by Mr. Wright are

as follows:

1. 17.5 KC power supply

This stage was altered so as to give more intense outgoing signal.

2. Keying circuit arrangement

By means of increased optical leverage, greater intensity of light beam and an additional thermonic tube the steadiness of the initial as registered on the dial was increased.

3. The switching arrangement was simplified.

4. Receiver amplifier

New input transformers were installed which were electrostatically shielded and an improved output filter was installed giving less strays.

The changes made by Mr. Wright have increased the operating efficiency of the instrument greatly. With the exception of two minor incidents the fathometer has given perfect service since Mr. Wright's visit. A new tracing showing the changes made was forwarded to the Washington Office for the files.

It has been pointed out that the weight of the fathometer unit and the comparatively light construction of the enclosing case might account for the loosening of connections, due to strain imposed on the inner structure. It is planned to lessen this somewhat by installing a rigid metal plate at the back of each instrument and to furnish additional supporting brackets at the base of the case to lessen any tendency to warp.

2. Fathometer Work.

Fathometer work was done on two hydrographic sheets during the past season. Due to the large area covered by the Beardslee Islands and the foulness of the locality, the greater part of the sounding was done with hand lead and wire from the launch. I shall outline in some detail the procedure followed during the past season with the request that criticism be

offered in order that we may standardize the method used next season.

In this season's work I was guided by Field Memorandum No. 3, 1936, the hydrographic manual and methods used by Lt. Karo the year before.

Corrections deduced in the following report apply to both sheets surveyed this season. Both sheets are in the same general locality and work was done on both sheets during the same period of time. Froma a camparison of temperatures and salinities obtained in July and September there is apparently no seasonal change. It is my opinion that the work during the past season was in an area too far removed from the glaciers to be affected by seasonal change caused by melting ice. As the work gets nearer the glaciers there is a strong possibility that a few warm days might cause enough melting to appreciably change the salinity of the surface water. I propose to experiment next season in Muir Inlet to see if this is the case.

There is listed below dates when fathometer work was carried on:

SHEET 2239	SHEET 2139
July -7-12-16-20-24	July 7-12-20
August -11	August 7-11-30
September -21-23	September 1-11-15-21
October -3	

3. DRAFT SETTING.

Draft setting was 7.5 feet and was kept at this position during the entire season. The setting was checked each day before sounding was started.

4. CALIBRATION.

The fathometer dial speed was checked on July 19, 1939 and again on September 26, 1939.

5. SALINITIES AND TEMPERATURES.

Serial temperatures were taken on July 7-16, and September 20, 23.

On the first three serials, the salinity was measured for surface and bottom, on September 23, salinities were measured all the way to the bottom. A comparison of salinities obtained this year and those obtained by the party last season shows that the water is fresher in the upper part of the bay, due no doubt to the discharge from the glaciers. The water is also colder.

6. COMPARISONS.

Comparisons were taken at the beginning of each day's work and again in the afternoon. Two to three comparisons were made. Strong tidal currents and uneven bottom due to glacial deposit are two factors that have to be considered in this area. An attempt was made to make comparisons in as level an area as possible and in places and at times when the current was not strong.

7. CORRECTIONS.

Thermometer and hydrometer readings were corrected according to the calibration tables furnished by the Bureau of Standards. Hydrometer readings were likewise reduced from the basis of 60/60 F to 15/4 C. For this latter correction the Bureau of Standards tables were used after they had been found to agree closely with circular letter 22-AB-293, dated May 8, 1939. This letter called for a correction of -0.0010 and the Bureau of Standards for a correction of -0.0009 when referring 60/60 F hydrometers to 15/4 C.

Temperatures were plotted with reference to depth and a weighted curve was drawn. From this curve "Mean temperature C" was obtained. "Temperature C" is the average of temperatures recorded.

In obtaining salinities from table 3, Hydrographic Manual, from the densities reduced to 15/4 C, the table was found inadequate since the salinities indicated were below 31 pp/1000. The table was augmented to obtain these salinities. The salinities thus obtained were plotted with reference to depth and the results entered in table 1 of the fathometer corrections. Mean salinities were taken from the curve. The table for Fathometer Correction factors in Field Memorandum No. 3, 1936, was used for a velocity of 820 fathoms per second, the calibrated velocity. This table was augmented to take care of the salinities below 31 pp/1000.

The corrections found this year are larger than those in 1938 but seem correct when compared with the vertical cast and fathometer soundings. As stated before the area is nearer the glaciers and naturally has a greater percentage of fresh water. I feel sure that when we investigate Muir Inlet the water will be decidedly fresher than that encountered this year.

Check on Fathometer Dial Speed

July 19, 1939

Rev. 1000 Fm. Dial	Actual Min.	Sec.	Seconds	Theoretical Seconds
150	6	5-4/5	365.80	365.85
150	6	5-1/5	365.20	365.85
150	6	6	366.00	365.85
150	6	6-4/5	366.8	365.85
150	6	6-1/5	366.2	365.85
150	6	6-1/5	366.2	365.85
150	6	5-4/5	365.8	365.85
			7) 2562.0	
			366.0	by R. W. W.

September 26, 1939

150	6	5-1/5	365.20	365.85
150	6	5-2/5	365.4	365.85
150	6	6-4/5	366.8	365.85
			3) 1097	
			365.8	by B. H. R.
369	15		900	

$$\frac{369 \times 2000}{900} = 820 \text{ fms. sec.}$$

FATHOMETER COMPARISONS

Date	Vertical Casts Fms./tenths	Fathometer Readings Fms./feet	Correction Feet	Remarks
7- 7-39	58.2	58/1	0	Good
"	51.0	51/0	0	Good
7-12-39	56.0	57/4	-10	Bad
		57/4	-10	Bad
		57/4	-10	Bad
"	23.0	23/4	- 4	
"	93.5	93/3	0	Good
7-16-39	47.8	49/4	-11	Fair
	47.3	48/3	- 7	Fair
"	162.0	167/0	-30	Fair
	164.0	166/0	-12	Fair
"	56.5	57/2	- 5	Very Good
	57.1	57/1	0	Very Good
	56.6	57/1	- 3	Very Good
7-20-39	53.7	54/3	- 5	Fair
	53.7	54/4	- 6	Fair
		54/2	- 4	Fair
"	133.1	136/2	-19	Fair
	133.2	136/4	-21	Fair
		136/5	-22	Fair
7-24-39	123.7	123/5	- 1	Fair
	121.0	123/4	-16	Fair
"	56.1	56/0	+ 1	Good
	54.3	54/5	- 3	Good
8- 7-39	23.2	23/1	0	Good
		23/2	- 1	Good
"	8.3	8/2	0	Good
8-11-39	48.2	48/2	- 1	Good
	47.2	47/3	- 2	Good
8-30-39	41.0	42/1	- 7	Good
	41.5	42/1	- 2	Good
"	35.5	35/0	3	Good
	35.6	35/0	4	Good
9-11-39	56.9	57/1	- 2	Good
	56.1	57/1	- 6	Good
"	7.3	7/3	- 1	Good
9-15-39	45.4	45/5	- 3	Good
	45.1	45/3	- 2	Good
9-20-39	133.1	133/3	- 2	Bad
9-21-39	17.0	16/5	1	Good
	17.1	17/1	0	Good
	17.1	17/1	0	Good
"	36.1	36/5	- 4	Fair
	36.4	37/1	- 5	Fair
	36.1	37/0	- 5	Fair

FATHOMETER COMPARISONS (CONT'D)

Date	Vertical Casts Fms./tenths	Fathometer Readings Fms./ft.	Correction ft.	Remarks
9-23-39	114.4	116/3	-13	Fair
	113.9	116/2	-15	Fair
	113.7	116/3	-17	Fair
"	134.9	137/0	-13	Good
"	77.3	75/4	10	Fair
	67.5	68.5	- 8	Good
	68.7	69/1	- 3	Good
"	63.0	63/5	- 5	Good
	62.7	64/1	- 7	Good
	61.5	63/1	-10	Good
"	63.7	64/1	- 3	Good
"	55.6	56/0	- 2	Good

SALINITIES FROM TABLE 3

Calibrated Velocity
820 fathoms/second

Depth Fms.	Temp. C.	Specific Gravity	Salinity
0	7.0	1.02476	31.8
58	9.5	1.02476	32.3
0	7.5	1.02176	28.1
54	5.3	1.02500	32.0
0	6.5	1.02186	28.1
114	4.8	1.02476	31.6
0	7.4	1.02066	26.7
5	7.0	1.02126	27.4
10	7.2	1.02293	29.3
20	7.2	1.02317	29.9
30	7.0	1.02386	30.8
50	7.0	1.02377	30.7
60	6.7	1.02356	30.3
65	6.5	1.02450	31.4
77	5.6	1.02441	31.1

TABLE I

FATHOMETER CORRECTIONS

Depth Fms.	Temp. C.	Mean Temp.	Salinity pp/1000	Mean Salinity	Factors	Correction Fms.	Correction Feet
2	6.7	6.8	27.6	27.6	-0.0227	-0.04	- 0.24
7	6.7	6.6	28.7	28.7	-0.0224	-0.16	- 0.96
12	6.8	6.8	29.4	29.4	-0.0213	-0.26	- 1.56
17	7.0	7.0	29.8	29.8	-0.0205	-0.35	- 2.10
22	7.1	7.0	30.2	30.2	-0.0201	-0.44	- 2.64
27	7.0	7.0	30.6	30.5	-0.0199	-0.54	- 3.24
32	7.0	7.0	30.9	30.9	-0.0196	-0.63	- 3.78
37	7.0	7.0	31.1	31.0	-0.0195	-0.72	- 4.32
42	7.0	7.0	31.4	31.3	-0.0193	-0.81	- 4.86
47	7.0	7.0	31.6	31.5	-0.0191	-0.90	- 5.40
52	7.0	7.0	31.6	31.6	-0.0190	-0.99	- 5.94
57	7.1	6.9	31.6	31.6	-0.0193	-1.09	- 6.54
62	6.7	6.7	31.5	31.5	-0.0199	-1.23	- 7.38
67	6.5	6.5	31.3	31.3	-0.0207	-1.39	- 8.34
72	6.1	6.1	31.2	31.2	-0.0217	-1.56	- 9.36
77	6.0	6.0	31.1	31.1	-0.0221	-1.70	-10.20
82	6.0	6.0	31.1	31.1	-0.0221	-1.81	-10.86
87	5.9	5.9	31.2	31.2	-0.0223	-1.94	-11.64
92	5.8	5.8	31.2	31.2	-0.0225	-2.07	-12.42
97	5.7	5.7	31.2	31.2	-0.0228	-2.21	-13.26
102	5.5	5.5	31.3	31.3	-0.0233	-2.38	-14.28
110	5.1	5.1	31.5	31.5	-0.0242	-2.66	-15.96
120	4.3	4.3	31.8	31.8	-0.0263	-3.16	-18.96

TABLE II

FATHOMETER CORRECTIONS
0 - 170 Fms.

Depth Range Fathoms	Correction (feet) (Temp. & Salinity)
0 - 4.9	0
5 - 12.9	1
13 - 21.9	2
22 - 30.9	3
31 - 39.9	4
40 - 48.9	5
49 - 56.9	6
57 - 62.9	7
63 - 69.9	8
70 - 75.9	9
76 - 81.9	10
82 - 86.9	11
87 - 92.9	12
93 - 98.9	13

Depth Range Fathoms	Correction (fathoms) (Temp. & Salinity)
99 - 103	2
104 - 128	3
129 - 146	4
147 - 164	5
165 - 170	6

See attached revised table forwarded to office March 18, 1940.
JBOR

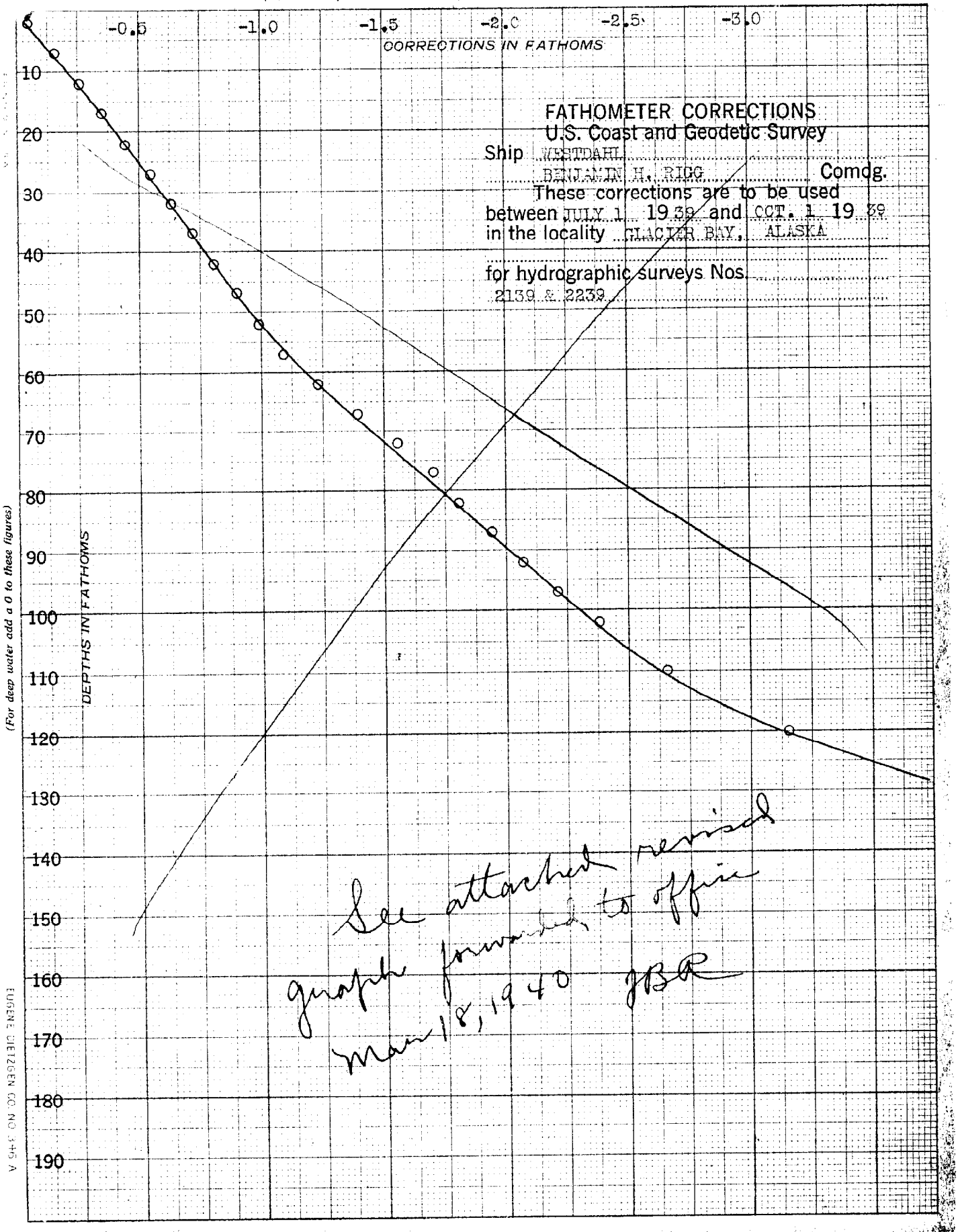
GEOGRAPHIC NAMES

Survey No. H6457

Name on Survey	On Chart No. A,	On previous survey No. B,	On U. S. quadrangle Maps C,	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
~~Leiter~~										
~~Bartlett~~ Island	U.S.C.B — 5/27/42									1
~~Bartlett~~ Passage	Former decision for Bartlett R. revised 5/27/42, to include proposed Bartlett Passage.									2
Bartlett River										3
Beardslee Entrance	U.S.C.B — 5/27/42									4
Flapjack Island										5
Glacier Bay										6
Hutchins ~~Basin~~ Bay	U.S.C.B — 5/27/42									7
Kidney Island										8
~~Linn~~ K Island										9
~~Young~~ ~~Rush~~ Island — see below										10
~~Rush~~ Point										11
Secret Bay										12
South Marble Island										13
Spider Island										14
Strawberry Island										15
Strawberry Point										16
Topeka Islands										17
Topeka Reef										18
Young Island										19
		Names underlined in red approved by L. Heck on 2/20/41								20
										21
			Also 7/9/42							22
										23
										24
										25
										26
										27

M 234

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



(For deep water add a 0 to these figures)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

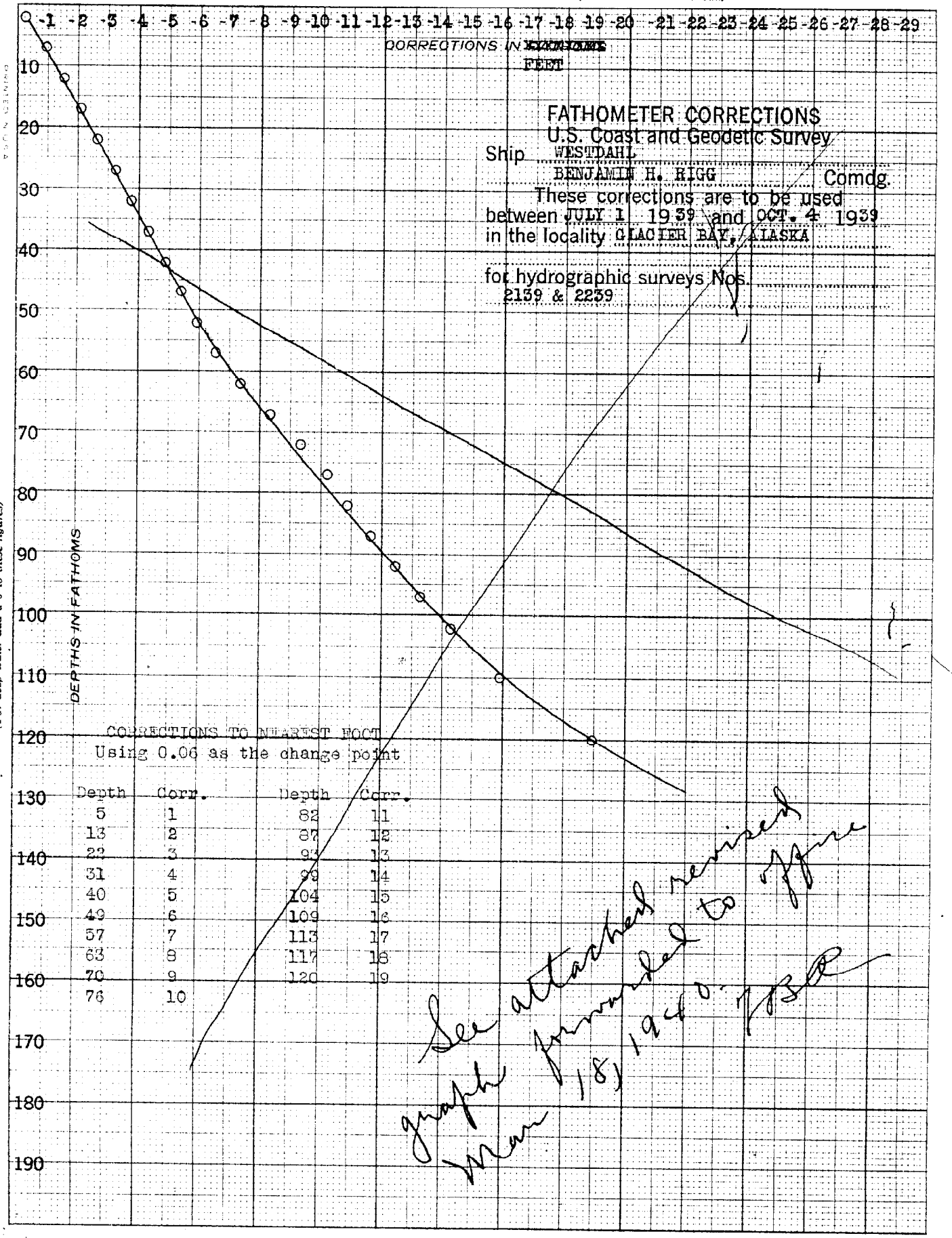
Ship WESTDAHL
BENJAMIN H. RIGG Comdg.

These corrections are to be used
between JULY 1 1939 and OCT. 1 1939
in the locality GLACIER BAY, ALASKA

for hydrographic surveys Nos.
2139 & 2239

See attached revised graph forwarded to office March 18, 1940 JBR

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



FATHOMETER CORRECTIONS

U.S. Coast and Geodetic Survey

Ship WESTDAHL
BENJAMIN H. RIGG Comdg.

These corrections are to be used between JULY 1 1939 and OCT. 4 1939 in the locality GLACIER BAY, ALASKA

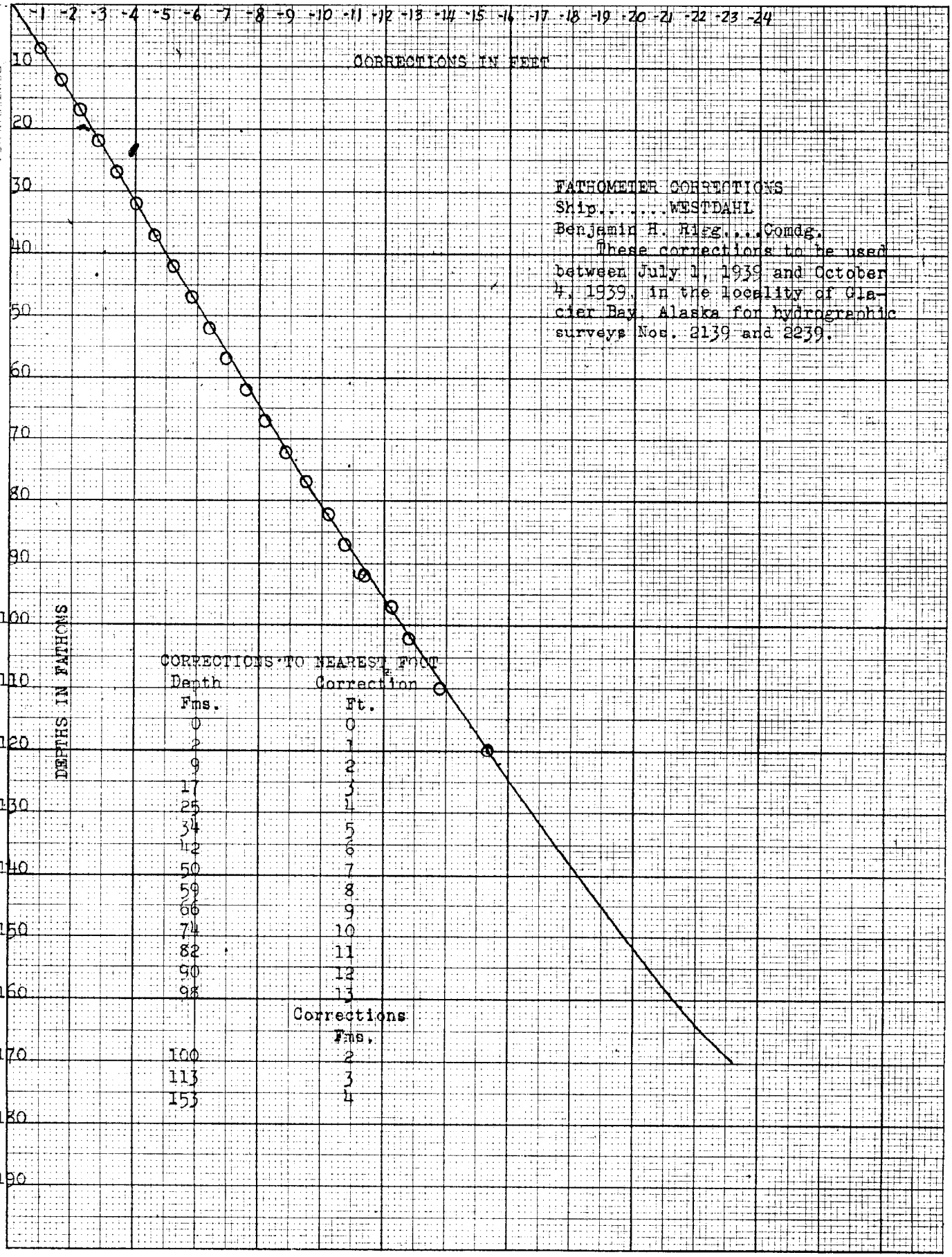
for hydrographic surveys Nos. 2139 & 2239

(For deep water add a 0 to these figures)

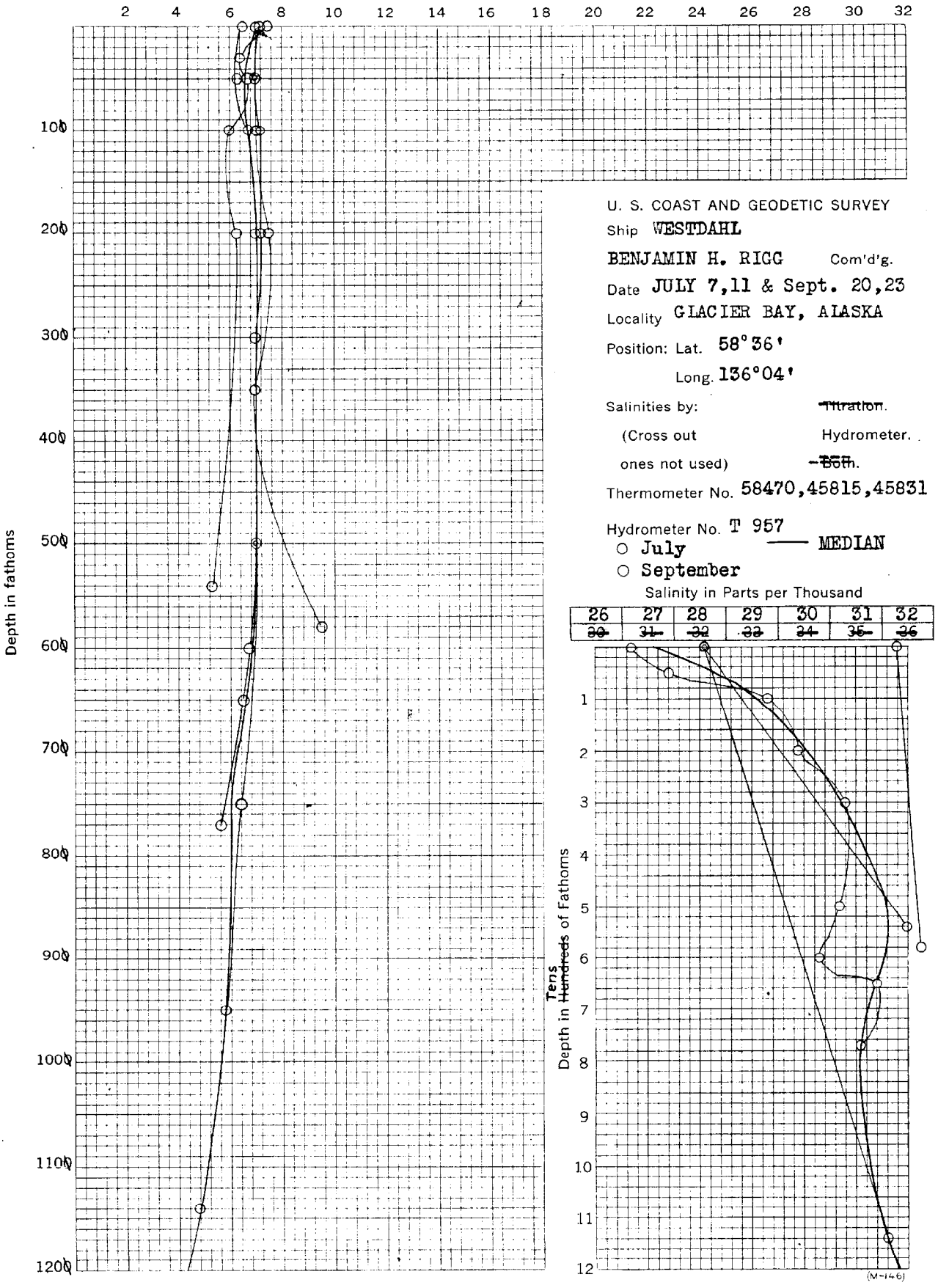
CORRECTIONS TO NEAREST FOOT
Using 0.06 as the change point

Depth	Corr.	Depth	Corr.
5	1	82	11
13	2	87	12
22	3	93	13
31	4	99	14
40	5	104	15
49	6	109	16
57	7	113	17
63	8	117	18
70	9	120	19
76	10		

See attached revised graph furnished to me on May 18, 1940. J.P.S.


-1 -2 -3 -4 -5 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20 -21 -22 -23 -24
CORRECTIONS IN FEET
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
DEPTHS IN FATHOMS
FATHOMETER CORRECTIONS
Ship.....WESTDAHL
Benjamin H. Ring....Comdg.
These corrections to be used between July 1, 1939 and October 4, 1939, in the locality of Glacier Bay, Alaska for hydrographic surveys Nos. 2139 and 2239.
CORRECTIONS TO NEAREST FOOT
Depth Fms. | Correction Ft.
0 | 0
2 | 1
9 | 2
17 | 3
25 | 4
34 | 5
42 | 6
50 | 7
59 | 8
66 | 9
74 | 10
82 | 11
90 | 12
98 | 13
Corrections Fms.
100 | 2
113 | 3
153 | 4
PRINTED IN U.S.A.
EUGENE DIETZGEN CO. NO. 340 A

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

Ship WESTDAHL

BENJAMIN H. RIGG Com'd'g.

Date JULY 7,11 & Sept. 20,23

Locality GLACIER BAY, ALASKA

Position: Lat. 58°36'

Long. 136°04'

Salinities by: ~~Titration~~.

(Cross out Hydrometer.

ones not used) ~~Both~~.

Thermometer No. 58470,45815,45831

Hydrometer No. T 957

○ July —— MEDIAN

○ September

(M-146)

POST-OFFICE ADDRESS: 601 Federal Office Bldg.
Seattle, Washington

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

80 KTA
82 7130
20 22
82

1940 MAR 22 PM 3:34

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

March 18, 1940

To: The Director,
Washington, D.C.

From: Commanding Officer,
m/v Westdahl.

Subject: Errata for Fathometer Report, Project HT-221, 1939

Enclosed is errata for Fathometer Report, Project HT-221, Glacier Bay, 1939. In the Director's letter dated February 27, 1940, Ref. 22mjc - 1995 WE4, we were informed as to the proper method of computing salinities. The receipt of this letter is greatly appreciated for it explained the faults in our former methods. Lieut. J.C. Bose further facilitated our work and the errors have been corrected in the submitted report.

It is respectfully requested that these enclosed sheets be substituted for the corresponding sheets in the submitted report.

Benjamin A. Bagg,
Commanding Officer.

TABLE 1
Fathometer Corrections

Depth Fms.	Temp. C	Mean Temp. C	Salinity PP/1000	Mean Salinity PP/1000	Factor	Correction Fms.	Correction Ft.
2	6.7		27.6				
7	6.7	6.7	28.7	28.2	-0.0227	-0.16	-0.96
12	6.8	6.7	29.4	28.6	-0.0223	-0.27	-1.62
17	7.0	6.8	29.8	28.9	-0.0219	-0.37	-2.22
22	7.1	6.9	30.2	29.1	-0.0214	-0.47	-2.82
27	7.0	6.9	30.6	29.4	-0.0211	-0.57	-3.42
32	7.0	6.9	30.9	29.6	-0.0210	-0.67	-4.02
37	7.0	6.9	31.1	29.8	-0.0209	-0.77	-4.62
42	7.0	6.9	31.4	30.0	-0.0207	-0.87	-5.22
47	7.0	6.9	31.6	30.1	-0.0206	-0.97	-5.82
52	7.0	6.9	31.6	30.3	-0.0204	-1.06	-6.36
57	7.1	6.9	31.6	30.4	-0.0203	-1.16	-6.96
62	6.7	6.9	31.5	30.5	-0.0203	-1.26	-7.56
67	6.5	6.9	31.3	30.5	-0.0203	-1.36	-8.16
72	6.1	6.8	31.2	30.6	-0.0205	-1.48	-8.88
77	6.0	6.8	31.1	30.6	-0.0205	-1.58	-9.48
82	6.0	6.7	31.1	30.6	-0.0207	-1.70	-10.20
87	5.9	6.7	31.2	30.7	-0.0206	-1.79	-10.74
92	5.8	6.7	31.2	30.7	-0.0206	-1.90	-11.40
97	5.7	6.6	31.2	30.7	-0.0209	-2.03	-12.18
102	5.5	6.6	31.3	30.7	-0.0209	-2.13	-12.78
110	5.1	6.5	31.5	30.8	-0.0211	-2.32	-13.92
120	4.3	6.4	31.8	30.8	-0.0213	-2.56	-15.36

TABLE 2

Fathometer Corrections
0-170 fathoms

Depths Fms.	Depths Ft.	Correction Ft.
0 -	1/5	0
2 -	8/5	- 1
9 -	16/5	- 2
17 -	24/5	- 3
25 -	33/5	- 4
34 -	41/5	- 5
42 -	49/5	- 6
50 -	58/5	- 7
59 -	65/5	-8
66 -	73/5	- 9
74 -	81/5	-10
82 -	89/5	-11
90 -	97/5	-12
98 -	99/5	-13

Depth Fms.	Correction Fms.
100 - 112	-2
113 - 152	-3
153 - 170	-4

RQC
HRE.

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Ed. Feb. 1935

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. H. R. Edmonston

Tide Reducers are approved in
17 volumes of sounding records for

HYDROGRAPHIC SHEET 6457

Locality Beardsles Islands, Glacier Bay, Alaska

Chief of Party: B. H. Rigg in 1939
Plane of reference is mean lower low water reading
4.2 ft. on tide staff at Willoughby Island
21.9 ft. below B.M. 1

Height of mean high water above plane of reference is 15.3 feet.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE

FORM M-238

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

No. H H6457
~~No. T~~

received Oct. 8, 1940
registered Oct. 10, 1940
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.

ROUTE		Initial	Attention called to
20			
22			
24			
25	✓	HE	Pages 1 to 8
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed

✓ 8330

POST-OFFICE ADDRESS: Box 1828, Pensacola, Florida.

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

Reply to letter by Director Nov. 14, 1941
See Review of this survey page 3. Paragraph 7d

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

November 17, 1941

To: The Director,
U. S. Coast and Geodetic Survey,
Washington, D. C.

From: William F. Deane,
Lieutenant (j.g.), Coast and Geodetic Survey.

Subject: Hydrographic survey H-6457 (1939).

Reference: 82-DRM.

A study of the Director's letter and enclosure of November 14, 1941 has been made. Fortunately, I remember definitely the incident of the grounding and can endorse the reviewer's recommendation in regard to the discrepancy.

The note should have been placed in the sounding volume between positions 81y and 82y because the launch hit the rock while running parallel to the shore. The recorder obviously misplaced his note or else meant it as an explanation of why the day ended in so unorthodox manner.

I wish to express my regret for t he confusion caused by this note.

William F. Deane

William F. Deane,
Lieut. (j.g.), C.&G.S.

NOV 22 AM 8:37

82-DRM

November 14, 1941

To: Lieut. (j.g.) Wm. F. Deane,
U. S. Coast and Geodetic Survey,
Ship HYDROGRAPHER,
P. O. Box 1828,
Pensacola, Florida.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: Hydrographic survey H-6457 (1939).

There is enclosed a photostat of a section of hydrographic sheet H-6457, Glacier Bay, surveyed by you. Paragraph 7d of the review of this survey states,

> "A note in the sounding records, volume 10 page 25, at tender position 83y reads 'Struck rock and bent propeller'. This is the final position for the day and is in Lat. 58°30.27', Long. 135°54.55' about 225 meters west of the shoreline. The sounding obtained was 8 fathoms, in agreement with adjacent depths. As the tidal reduction at the time was 10 feet this rock bares approximately 7 feet at MLLW. It is not shown on the boat sheet or on T-6677 (1938-39) although the topographer states that the low water line was obtained at within 3 feet of MLLW and the rock would therefore have been visible.
>
> It is therefore believed that the tender struck the rock while turning at the foreshore (pos.81-82y) where soundings of -4/6 and 1/6 fathoms were obtained. The rock has been plotted between these soundings at the position of a large boulder symbol on T-6677 (1938-39)."

If you have reason to believe this discrepancy should be disposed of in any manner other than recommended in the review, please so inform this office.

(Signed) J. H. HAWLEY
Acting Director.

Enclosure.

Reply dated Nov. 17, 1941 is included in this report.
HTA

DIVISION OF CHARTS

Surveys Section

REVIEW OF HYDROGRAPHIC SURVEY — REGISTER NO. H-6457
Field No. 2139

S. E. Alaska - Glacier Bay; Beardslee Islands
Surveyed in June - October 1939, Scale 1:20,000
Instructions dated March 10, 1938; April 19, 1939

Soundings:

Dorsey No. 3 Fathometer
Machine
Hand Lead

Control:

3 Point fixes on shore signals

Chief of Party - B. H. Rigg
Surveyed by - G. A. Nelson; W. F. Deane
Protracted by - H. C. P.
Soundings plotted by H. C. P.
Verified and inked by - G. B. Littlepage
Reviewed by - H. F. Stegman, October 29, 1941
Inspected by - H. R. Edmonston

1. Shoreline and Signals

Shoreline and topographic signals originate with plane table surveys T-6677 (1938-39) and T-6678 (1939).

2. Depth Curves

The usual depth curves can be satisfactorily drawn.

3. Sounding Line Crossings

Sounding line crossings are satisfactory.

4. Junctions with Contemporary Surveys

a. Junctions with H-6458 (1939-40) on the west, and H-6575 (1940) on the north are satisfactory.

b. The junction with H-6340 (1938) on the southwest is satisfactory. As recommended in the Descriptive Report and review of H-6340, the shoal area in the vicinity of Lat. 58°29', Long. 136°01' was adequately developed on the present survey. The results of this development are noted in the Descriptive Report, page 1, paragraph 5. Within the common area the soundings of H-6340 (1938) which are not superseded by H-6457 (1939) are shown in red on the latter survey.

5. Comparison with Prior Surveys

There are no prior surveys by this Bureau in the area covered by the present survey.

6. Comparison with Chart 8306 (Latest Print dated 9-30-40)

a. Hydrography

1. There are no charted soundings within the area of H-6457 except those to the south and west of Strawberry Island which originate with the adjoining survey H-6340 (1938). (See paragraph 4b above.) The 7-1/2-fm. sounding in Lat. 58°29.5', Long. 136°01.3' and the 5-1/2 fm. sounding in Lat. 58°29.0', Long. 136°00.3' are superseded by the present survey.

2. The reef awash at high tide in Lat. 58°32', Long. 136°01' originates with Chart Ltr. 473 (1936). This reef was observed at a distance of about 2 miles by the Coast Guard Cutter "Tallapoosa" and sketched on the chart. It is undoubtedly the reef shown on the present survey in Lat. 58°31.9', Long. 136°00.2'. H-6457 supersedes this chart letter.

3. Rocks awash and low water line on the chart originate with plane table survey T-6677 (1938-39) and will be considered in the review of that survey.

b. Aids to Navigation

There are no aids to navigation within the area of H-6457 (1939).

7. Condition of Survey

a. The sounding records are neat and legible.

b. The Descriptive Report satisfactorily covers all matters of importance except as noted in par. 7(d) below.

c. The field drafting was satisfactory except that all recorded soundings were plotted. In many cases the soundings were so small and closely spaced that they were illegible. In congested areas a proper selection of soundings should be made in accordance with paragraphs 149 and 150 of the General Instructions for Hydrographic Work.

d. A note in the sounding records, volume 10, page 25, at t ender position 83y reads "Struck rock and bent propeller." This is the final position for the day and is in Lat. 58°30.27', Long. 135°54.55' about 225 meters west of the shoreline. The sounding obtained was 8 fathoms, in agreement with adjacent depths. As the tidal reduction at the time was 10 feet, this rock bares approximately 7 feet at MLLW. It is not shown on the boat sheet or on T-6677 (1938-39) although the topographer states that the low water line was obtained at within 3 feet of MLLW and the rock would therefore have been visible.

It is therefore believed that the tender struck the rock while turning at the foreshore (pos. 81-82y) where soundings of -4/6 and 1/6 fathoms were obtained. The rock has been plotted between these soundings at the position of a large boulder symbol on T-6677 (1938-39).® ® See letter of Nov 17, 1941 attached to this report which states that this position is correct as plotted H.F.S.

8. Compliance with Instructions for the Project

Satisfactory.

9. Additional Field Work Recommended

This is an excellent survey and no further field work is required. In Lat. 58°33.4', Long. 135°52.9' a shoal sounding of 5-2/6 fathoms was obtained in depths of 9-1/2 to 12 fathoms. No further investigation of this shoal was made and shoaler depths may exist in the vicinity. In Lat. 58°31.9', Long. 135°54.4' a least depth of 4-4/6 fathoms was obtained in general depths of 5 to 11 fathoms. A shoal sounding of 6-4/6 — plotted fathoms lies 200 meters northward and possibly shoaler water exists in this direction.

10. Superseded Surveys

None.

Examined and approved:

Robert W. Knox
Chief, Surveys Section

F. S. Borden
Chief, Division of Charts

L. A. Rayner
Chief, Section of Hydrography

G. G. Rude
Chief, Division of Coastal Surveys

Applied to CLT 8306 10/1/41 P.B.C.
" " " 8202 via 8306 J.M.A. May 1942
" " " 8306 (10 fm curve) 8/29/42 HTL

17318 4/25/79 N.J. Brownell Fully appd hydro after inspection.