

8535 WIRE DRAG.

Diag. Cht. No. 8502-2.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey WIRE DRAG

Field No. PF-20_1-60WD Office No. H-8535

LOCALITY

State ALASKA

General locality ALASKA SOUTH COAST

Locality CAPE ST ELIAS

1960

CHIEF OF PARTY
M.E. WENNERMARK, CAPT, C&GS, COMDG
USC&GS SHIP PATHFINDER

LIBRARY & ARCHIVES

FEB 20 1963

DATE _____

USCOMM-DC 5087

8535
WIRE DRAG

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-8535

Field No. PF-20-1-60 WD

State Alaska

General locality Alaska South Coast

Locality Kayak Island, Cape St. Elias

Scale 1:20,000 Date of survey 22-24 June 1960

Instructions dated 19 April 1960 - Suppl. - 29 April, 9 May 1960

Vessel USC&GSS PATHFINDER

Chief of party M.E. WENNERMARK, CAPT., COMDG., USC&GS Ship PATHFINDER

Surveyed by C.W. Clark, F.X. Popper, W.D. Barbee

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

Fathograms scaled by C.B. Ellis

Fathograms checked by S. Rose

Protracted by C.B. Ellis

Soundings penciled by

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

REMARKS: Tenders: Launches 2 & 3

Guide Launch 4, End Launch 1 -

Shoran - Visual Control Used

Strips subdivided by: C.B. Ellis; Inked By: Seattle Processing Office

See Pre-Verification note on the Statistics page of this D.R. 7/18/60

Partial verification completed

RHC 4/18/76

910

DESCRIPTIVE REPORT TO ACCOMPANY WIRE DRAG SURVEY H-8535(PF-20-1-60WD)

PROJECT CS-405 1960 - CAPE ST ELIAS, ALASKA SOUTH SHORE

USC&GS SHIP PATHFINDER - M.E. WIENNERMARK, CAPT, C&GS, COMMANDING

A. AUTHORITY - Project SP-4-60. Original Instructions dated 19 April 1960; Supplemental Instructions dated 29 April, 9 May 1960; Letter File Number 211-gvw dated 4 January 1961, signed J. Bowie; Letter dated 10 October 1960 to Chief, Division of Photogrammetry, signed G.C. Saladin, Ensign, Ship PATHFINDER; Letter File Number P8-2, Serial 2134 dated 18 August 1960 from Commander, Seventeenth Coast Guard District to Commanding Officer, USC&GS Ship PATHFINDER; Letter File Number H-1, Serial 7934, dated 25 February 1960 from Commander, Seventeenth Coast Guard District to Commanding Officer, USC&GS Ship PATHFINDER.

B. CHARACTERISTICS and LIMITS of the WORK - The purpose of the survey was to provide a clear approach and anchorage area of 30 foot clearance near Cape St. Elias Light, Alaska, South Shore. Limits of the sheet are SW corner latitude $59^{\circ} 43'$, longitude $144^{\circ} 44'$; NW corner latitude $59^{\circ} 50'$, longitude $144^{\circ} 44'$; SE corner latitude $59^{\circ} 43'$, longitude $144^{\circ} 30'$; NE corner $59^{\circ} 50'$, longitude $144^{\circ} 30'$. Scale 1:20,000. Shore and visual control was used. The Effective Depth ranged from 28 feet to 44 feet.

C. CONTROL and SHORELINE - All control used on this sheet originated with H-8534(PF-20-1-60) 1:20,000, 1960. There are two intersection stations that fall within the limits of this sheet; KAYAK, 1898 and PINNACLE ROCK, 1903. Neither of these two stations was used for control and KYAK, 1898 was plotted on the sheet only as a reference station.

Cape St. Elias Light is a photogrammetric location determined by the Division of Photogrammetry. A Sun Azimuth was observed at latitude $59^{\circ} 47' 56''$, longitude $144^{\circ} 35' 50''$ and an azimuth determined for Cape St. Elias Light. The position of Cape Azimuth Mark (longitude hour 9 hours, 38 minutes 23.3 seconds) is 6.0 meters East of signal Eli(H-8534, H-8535) and is $18^{\circ} 33' 49''$ to CAPE. This observation point was used to rod in the following signals located by graphic control: Guy, Eli, Far, Mat; initialed on Cape St. Elias Light. Signals Ivy and Jay were located by sextant cuts. Signal Her was a photogrammetric location. Signal Kim was located by the following positions and cuts listed in H-8534 volumes:

Launch #2 - Volume #4 page 39 (calibration data)	Kim is the whitewashed concrete base of the old 1915 Cape St Elias Light on the S.W. end of Pinnacle Rock. W.M.M.
" #2 - Volume 4 position 108c	
" #2 - Volume 5 position 159c	

The position of Launch #2(Vol 5, pos 159c, H-8534) changed 0.15 statute mile from boat sheet to smooth plot. This shift moved signal Kim 23 meters to the southeast on the Smooth Sheet. The Smooth Sheet position is below the HWL; the signal was above the HWL. Planimetric manuscript T-9958 compiled November 1960 moved the HWL approximately 20 meters west. It appears that compilation of the new manuscripts T-9958 and T-10925 from an August 1960 flight line included not only more

accurate deliniation of the HWL but also a slight azimuth shift between the south end of Kayak Island and the south end of Pinnacle Rock.

SOUTHEAST ROCK (Ser) was located on H-8534 by using only the following cuts:

Position 1B, page 36, Vol 1, Ship PATHFINDER ✓

Position 2B, page 36, Vol 1, Ship PATHFINDER ✓

Position 1a, page 4, Vol 3, Launch 2 ✓

ok copy

A Theodolite cut was taken from Cape St. Elias Light to Southeast Rock; the initial was on CAPE AZIMUTH MARK and was from the north. The direction to Southeast Rock (Ser) $173^{\circ} 18' 30''$.

The Shoreline and Topography originated with Planimetric Manuscripts T-9958, T-9959 and T-10925, dated November 1960, and January 1961. All rocks inked on the sheet are from shoreline manuscripts. Those in pencil are from H-8534 and at this writing none have been verified. The rocks inadvertently were inked on the Smooth Sheet and were left as such so as to have only one erasure in the event they were wrong.

The Planetable (Graphic Control) Sheet used to red in Guy, Eli, Far and Hat is not registered. The sheet has no data other than signal location and it was assumed the sheet would be destroyed when the signal positions were verified on H-8534 and H-8535.

The survey was controlled by two shoran stations. One station was located at the lighthouse with the antenna mounted on the catwalk around the light. The ship was used as the second station during the entire survey. The ship was located by a theodolite direction and a shoran distance from CAPE. This data is in Volume 9, H-8535 and Form 251 Observation of Horizontal Directions, Volumes 1 and 2, (H-8534 and H-8535). Ship's Position Volume 9 also covers Ship's Position for H-8534.

D. DATE OF SURVEY - This survey was begun 18 June 1960 but no positions were recorded until 22 June 1960. The drag operations were completed 24 June. Additional shoran calibrations for H-8534 and H-8535 were observed on 25 June 1960.

E. TIDE REDUCERS - Hourly heights were furnished by the Washington Office from the Standard gage at Yakutat (135W). There were no height corrections however, all reducers used were plotted and entered in volumes as 150W time zone.

F. JUNCTIONS - No prior wire drag inside the limits of the sheet.

G. SPLITS - There are no splits within the area dragged.

H. GROUNDINGS AND SHOALS		Least	Cleared	Remarks
✓	Pos. No. & Day	Depth	Eff. Depth	
✓(1)	1a (Lch. #3) 32-33 B	59° 47.2' Lat 144° 35.9' Long	23.0' (HL) Not	Rock-Hang
✓(2)	42c (Lch. #4)	59° 47.29' Lat 144° 35.71 ⁶⁸ Long	29.0' *	Rock ?
✓(3)	49c (Lch. #4)	59° 47.28' Lat 144° 34.61 ⁵⁷ Long	28.0' *	Rock ?
✓(4)	85c (Lch. #4)	59° 44.51 ⁴⁷ Lat 144° 38.05 ⁰⁵ Long	42' Not Cleared (86-92c)	Shoal
(5)	H-8534	59° 44.2' N Lat 144° 38.8' W Long	48.0' ³ 44' ²	This 82 fm sounding fall on the eastern edge of the 42' strip and about in the middle of the 42' strip. To be safe it is called clear at ** Shoal

* These positions were taken by the guide Lch. and were not dragged over.

** Reported by wire to Washington Office 28 June 1960, and copy of Form 786 forwarded.

(I) GENERAL NOTES - Standard Wire Drag procedures were followed throughout, with the following exception:

Position No. 1a (Lch.3)(hang). This hang was on the Western edge of the drag strips for the anchoring basin, adjacent to a charted foul area - and since the barometer was falling rapidly and forecasts indicated approaching storms, it was decided to by-pass the hang and complete as much of the remaining area as possible. The position of this hang was determined by holding the Boat Sheet position, which is 1364.4 meters, 181°T from Cape St. Elias Light.

The Boat Sheet position, Smooth Sheet position as indicated by drag, an arc of Shoran taken at the same time as position 1a(Lch. 3), page 12, all agree within 26 meters. The positions, as determined by Launch 2 (tender record), are out 0.1 statute mile on Ship Station and fall in an area cleared by subsequent drag strips. Launch 2 positions were rejected as obviously unreliable.

Holding the boat sheet position of Kim (as against the smooth plot), the three-point fix (position 1a Lch.#, pg 12) is out 40 meters in a N/E direction.

Discrepancies exist in the smooth plot at this writing. The smooth sheet work was not completed aboard ship.

A discrepancy such as a consistent 0.02 statute mile difference between Shoran and any visual was not resolved aboard ship, and will probably not be resolved by the Processing Office. Shoran calibrations, computations, and entered corrections were re-checked and no error could be found. In the smooth plot, Shoran was used almost exclusively in order to make any error constant. Sextant angles to the guide Launch and end Launch, taken by personnel on the Ship PATHFINDER, disagreed in time from 2 to 5 minutes, in addition to missing the launches by as much as 0.05 Statute Mile. The personnel who took the angles stated that they were taken at the time the mark was called over the radio from the Guide Launch. It seems obvious the clocks were not together. These angles were used in some instances in boat sheet plot by the End Launch. They were used only

This was resolved by correcting the calibration corrections. WMM

in Smooth Plot between End Launch positions 58-63c where control was inadequate and the Boat Sheet Plot was held. The angles were taken to supplement Shoran control in the obscured sector behind Pinnacle Rock.

The wire drag strip for "C" day between positions 70-84, varies in width from the maximum length of drag (1800 ft.) to more than 2100 ft. Time aboard ship did not permit resolving this discrepancy. It should be noted that this portion of the strip is either in or close to the base line extension behind the Ship Station, and increases in width as the distance from the ship increases. It was noted this occurred only on the South end of the Strip toward the baseline extension and only on this particular Strip. Other strips that over-lapped the same general area on "C" day were not affected.

(J) CURRENTS - The current was estimated to be between 2 and 3 knots. The flow movement generally followed the shoreline of the NE-SW oriented island. On the flood, the current moved generally north by west with a westerly movement between Pinnacle Rock and The Whistle Buoy, and then Northwest from this point. The direction was practically reversed during ebb. (See section N - Recommendations).

(K) DISCREPANCIES AND COMPARISON WITH PREVIOUS SURVEY AND CHARTS - All prior surveys of this area are at small scale and copies were not furnished. In as much as this smooth sheet is not completed, no comparison has been made, however the following sheets or charts should be used: Contemporary Hydrographic Survey H-8534 (PF-20-1-60; 1:20, 000; 1960), C&GS Chart 8513 (Valdez Datum), & the 1:20,000 scale Coast Guard Reconnaissance sketch. (Use with discretion since the projection, shoreline, and sheet in general, is distorted).

(L) PERSONNEL AND EQUIPMENT Standard wire drag procedures and equipment were used throughout. The four 30 ft. motor Launches based aboard the Ship PATHFINDER were used. These Launches were used as follows: Launch 4, guide launch; Launch 1, end launch; Launches 2 & 3 as tenders. The drag was 1,800 feet long with 3 100ft. sections between intermediate buoys. 101.2 Meter to lines were used. Each of the two drag launches was rigged with a line running aft on each side from the Kingpost to the stern. At the stern, the tow line from the drag was shackled to either the port or starboard section of towline on the launch. The Field Operations Officer, Cdr. F.X. Popper was in overall charge of the field work and the guide launch. Lcdr. W.D. Barbee was in charge of the end launch for "A" & "B" day and Cdr. C.W. Clark on "C" day.

	<u>Fath.</u>	<u>Shoran Indicator</u>	<u>Day Letter</u>
Launch 1	57-29	581	Capital Blue
Launch 2	57-22	518	Lower Purple
Launch 3	57-23	1352	Lower Green
Launch 4	74-S	1313	Capital Red

The color code to identify launch positions has been standard aboard this ship for several years, and in all cases the day letters are lower case, except in Wire Drag.

(N) RECOMMENDATIONS - It is recommended a current survey be made Southwest of Kayak Island in the vicinity of Cape St. Elias Lighted Whistle Buoy #2, Pacific Coast, Vol. III lighted list number 2221. (See section (J) on currents.

Charles B. Ellis
Charles B. Ellis
CQS, C&GS
USC&GS Ship PATHFINDER

Approved and Forwarded,

Arthur L. Wardwell
ARTHUR L. WARDWELL, CAPT, C&GS
COMDG, USC&GS SHIP PATHFINDER

STATISTICS TO ACCOMPANY WIRE DRAG SHEET H-8535

DATE <u>1960</u>	LETTER	VOL.	NAUTICAL	POSITIONS*	TENDERS'	
	DAY	NO.	MILES		SOUNDING POSITIONS	
22 June	A	1	2.8	82		
23 June	B	2	2.7	66		
24 June	C	3	11.2	202		
		4				
		<u>5</u>			<u>1</u>	<u>1</u>
		<u>5</u>		<u>350</u>	<u>1</u>	<u>1</u>

3
353

NOTE:

- (1) * Total guide, plus end vessel
- (2) Three detached positions were obtained by guide launch on "C" day - See section (H) - GROUNDINGS & SHOALS.

COLOR CODE FOR VESSELS:

- USC&GS Ship PATHFINDER - Blue - Upper Case Letters
- Launch 1 (End) - Blue - Lower Case Letters
- Launch 2 (Tender) - Purple - Lower Case Letters
- Launch 3 (Tender) - Green - Lower Case Letters
- Launch 4 (Guide) - Red - Lower Case Letters

Pre-Verification Note

Verification was limited to soundings, and one hang which were not cleared. This information was inked and appropriately annotated on the smooth and A+D sheets. The smooth plotted positions of two soundings were revised during the present processing.

The smooth plotting of the drag line on B-day (Positions 14-33 B) was not consistent with the recorded information. For the purposes of the present processing it was not considered necessary to effect extensive revisions of the affected drag strip. Revisions therefore, were limited to those necessary to establish the position of the hang, and shoalest sounding, obtained at positions 32-33 B. (See D.P. - Vol 4, Page 12)

The cleared areas on the A + D sheet, especially in the immediate vicinity of the hang, should not be regarded as fully verified and are to be used for reference purposes only. No further processing of this survey is planned.

K. W. W.
4-16-76

TIDE NOTE
TO ACCOMPANY WIRE DRAG SURVEY H-853⁵/₄ (PF-20-1-60 WD)
USC&GS Ship PATHFINDER

Tide Reducers were derived from hourly heights furnished by the Washington Office. No tide gage was established for this survey as per instructions. A periodic check by radio was made to ascertain proper functioning of the Standard gage at Yakutat. No time or height corrections were applied, however it should be noted the gage at Yakutat is operated on 135 W, and the survey was done using 150 W time zone - The reducers were scaled and entered for 150 W.

To Accompany Wire Drag Survey (H-8535)

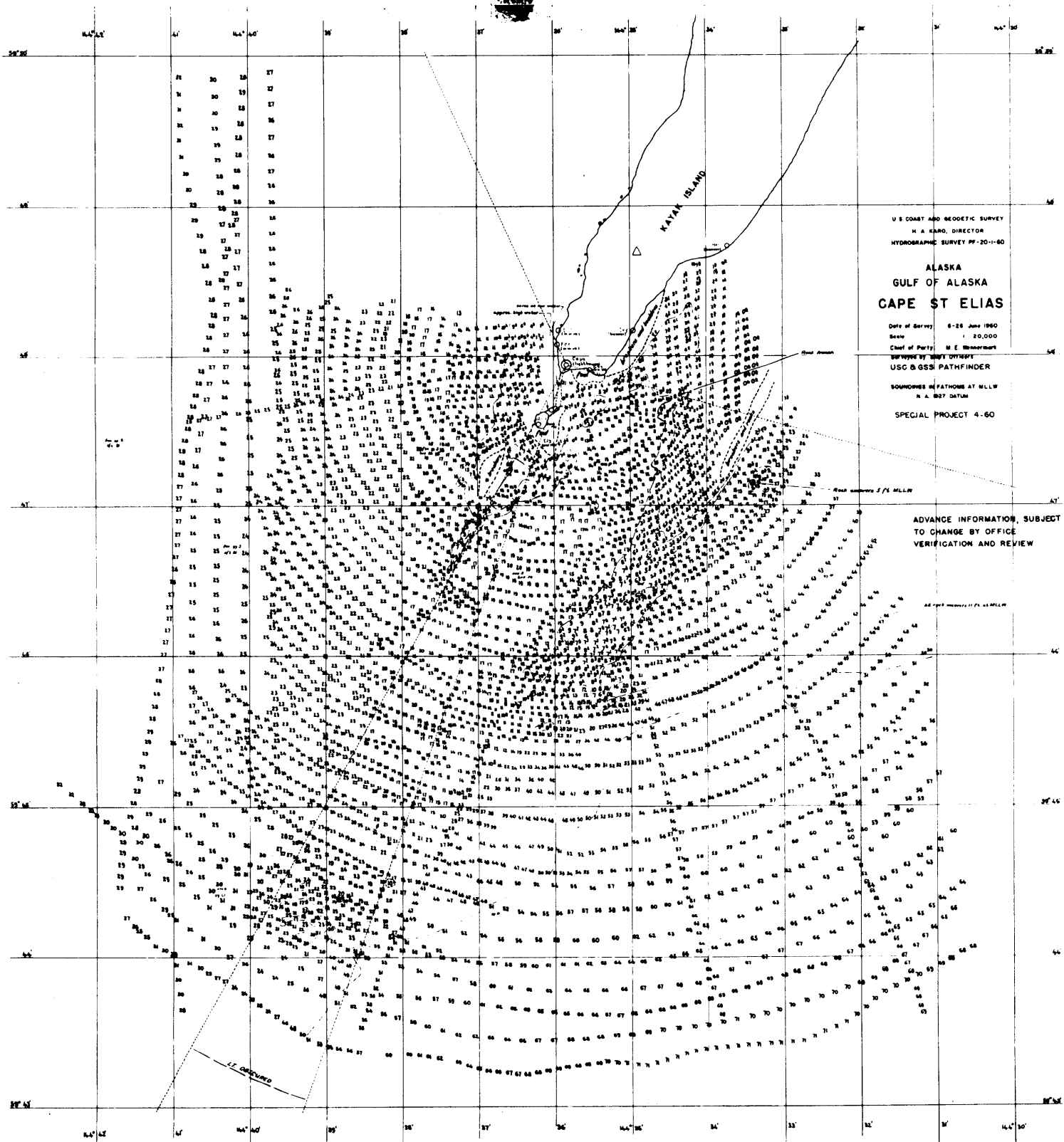
To: Seattle Processing Office

Subj: Items incomplete on Wire Drag Survey Sheet H-8535 (PF-20-1-60WD)

The following items specifically need to be either completed or checked:

1. Ink lines 5 mm. long (in color of launch) from corresponding Guide Launch positions.
2. Pencil soundings on Smooth Sheet
3. Make Smooth A&D sheet on Tracing Cloth, using Vellum A&D (as a guide, inking effective depths as indicated on preliminary (Vellum)).
4. Ink mileage numbers for Shoran arcs (blue) on the Smooth Sheet.
5. Ink eleven individual drag strips already drawn (included in the Descriptive Report).
6. Plot position of Cape St Elias Lighted Whistle Buoy 2 (navigation) (position 23b (lch 3) Volume 2 (H-8534)).
7. Check drag strips for correct width, especially between 58C & 84C.
8. Ink name for SOUTHEAST ROCK (Ser, hydrographic name in blue).
9. Comparison with prior surveys and Chart 8513 dtd 52-4/28.
10. Make up addendum sheet to Descriptive Report for Floating Aids to Navigation (Cape St. Elias Lighted Whistle Buoy 2, and Fixed Aids to Navigation, Cape St. Elias Light.


Charles B. Ellis



U.S. COAST AND GEODETIC SURVEY
 H. A. KERO, DIRECTOR
 HYDROGRAPHIC SURVEY PP-20-1-60

ALASKA
GULF OF ALASKA
CAPE ST ELIAS

Date of Survey: 6-26 June 1960
 Scale: 1:20,000
 Chief of Party: M. E. Wassenaar
 Surveyed by: USCGC PATHFINDER
 SOUNDINGS IN FATHOMS AT MLLW
 N. A. 827 DATUM
 SPECIAL PROJECT 4-60

ADVANCE INFORMATION, SUBJECT
 TO CHANGE BY OFFICE
 VERIFICATION AND REVIEW

49' 40'

39'

38'

37'

36'

35'

34'

33'

48'

+

+

+

+

+

+

48'

ADVANCE INFORMATION, SUBJECT
TO CHANGE BY OFFICE
VERIFICATION AND REVIEW

47'

+

+

+

+

+

+

47'

46'

+

+

30' FATHOM DEPTH

+

+

+

46'

59' 45"

+

+

+

+

+

+

59' 45"

421 A or OVER

WENTLE "R"

44' 40'

39'

38'

37'

36'

44' 35'

34'

44' 33'



KAYAK ISLAND

bars of low water
approx. high water

O East (20 m)

O Far (20 m)

O Cape (20 m)

O (20 m)

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U.S. COAST AND GEODETIC SURVEY
M. A. KARO, DIRECTOR
WIRE DRAG SURVEY PP-20-1-80ms

ALASKA
GULF OF ALASKA
CAPE ST ELIAS

Date of Survey 25-28 June 1960
Scale 1 : 20,000
Chief of Party M. E. Wannermark
Surveyed by Ship's Officers
USC & GSS PATHFINDER

DRAG DEPTHS REDUCED TO MLLW
N. A. 1927 DATUM

SPECIAL PROJECT 4-60



40831 AUG 60 W1743



ADVANCE REPORT OF DANGERS TO BE CHARTED

Survey (Sheet) No. PF 20-1-60 Datum NA-1927 Locality Cape St. Elias State Alaska Date July 15, 1960
Checked by CBE & SR

I recommend that the following dangers to navigation be charted. The positions given have been checked after listing; Checked by _____

M. E. Wennermark, CAPT., Chief of Party

Type of Danger	*Depth (Feet)	Latitude and Longitude		† From Charted Object or Natural Feature			‡ Chart Used		Date of Location	Remarks
		°	'	Seconds in Meters	True Bearing	Distance (Meters)	Object or Feature	No.		
Shoal	Fm. Z 8.0	59-44.4N 144-38.8W		203° 09'	N.Ml. 3.86	Cape St. Elias Lt.	8502 8513	8/28/58 4/28/52	June 1960	Cleared by 42.5 ft. @ MLW with wire drag. Confirms dispatch of 28 June 1960.

* Record least depth over danger reduced to plane of reference of charted soundings, using observed tides, if available.
† Record location both by geographic position and by true bearing with distance from object or natural feature shown on chart.
‡ Use largest scale chart and note print date given in lower left corner of chart.

NOTE - This form to be used during the season for prompt reports of uncharted dangers. If reports have been sent by wire, fill out this form and mail with confirmations. Enter dates of wires under "Remarks". Copies of reports on this form should be retained and submitted with the descriptive report.

FATHOMETER CORRECTIONS
SP-4-60

<u>LAUNCH</u>	<u>A</u>	<u>B</u>
2 (57-22)	+0.1	-0.9
3 (57-23)	+0.3	-0.9
4 (74-8)	+0.2	-0.7

TABULATION - VELOCITY CORRECTIONS
CAPE ST. ELIAS
Project SP-4-60

Ship PATHFINDER

<u>Corrn</u>	<u>Depth</u>
0.0	to 6.5 fm
+0.1	to 27.5 fm
+0.2	to 65.1 fm
+0.3	to 80 + fm

Launch Hydrography

<u>Corrn</u>	<u>Depth</u>
0.0	to 4.4 fm
+0.1	to 20.0 fm
+0.2	to 60.0 fm
+0.3	to 81.4 fm

PROCESSING OFFICE NOTES H-8635
(PF-20-1-60 WD)

SMOOTH SHEET

The original smooth sheet for this survey was discarded and a new one was constructed, using standard methods of construction and checking, by the Seattle Hydrographic Processing Unit. Because the original smooth sheet had been plotted using erroneous shoran corrections, which made it necessary to replot all of the wire drag positions, it was thought that a more presentable survey would result with the new smooth sheet.

SHORELINE

The shoreline was transferred from T-9958 and T-9959. Offshore rocks and reefs, except Southeast Rock, were not shown on the wire drag sheet, since they are on the hydrographic sheet.

GENERAL NOTES

Position 1b (Launch #3) at the hang on position 33B was plotted by extending the bite of the drag back through the Near and Far buoys from the Guide and End Launches. This was found to agree with the notation on page 26, Vol. 1 (Guide Launch) that the hang was between buoys No. 1 and 2. It also agrees fairly well with the shoran distance of 0.854 miles from Cape.

The discrepancies discussed on page 3 of the field report were found to have been caused by erroneous shoran positions which were the result of faulty calibration values used to plot the Ship's position and hence had an effect on all the launch calibrations to the Ship station. For Launch No. 2 the zero check correction was found to have been applied in the wrong direction. The new values caused a considerable shift in wire drag positions; but resulted in strips which do not exceed the 1800 foot length of the drag.

Graphic tests were made using the Ship's calibration of the 14 and 15 of June and those on 25 June. The 25 June calibrations appeared to give better results for the wire drag survey than those of 14 and 15 June, which were used for the hydrography, so they were used for the wire drag plotting.

Where the Guide and/or End Launch positions fell in the "Obscured Sector" of Cape St. Elias Light, Pinnacle Rock apparently greatly distorts the Shoran readings. In this sector the positions are primarily controlled by shoran distances and sextant cuts from the Ship with sextant angles and cuts from the Guide and End Launches. Whenever this situation occurred, explanatory notes were entered, in blue pencil, in the sounding records by the smooth plotter.

The clock time confusion of from 2 to 5 minutes between the Ship's time and the Launch time was difficult to resolve. This was important where positions were controlled by cuts from the PATHFINDER. Positions on either end of the drag strip not affected by clock time discrepancies were plotted first. The in-between positions were then spaced by time and course. The loci of all data then were drawn for each position. The visual cuts were plotted last and sorted out to fit. Occasionally, small compromises were made to obtain the most reasonable appearing positions.

Respectfully submitted,



William M. Martin
Supervisory Cartographer

Approved and forwarded



M. E. Wennemark
Captain, C&GS
Seattle District Officer

SHORAN CORRECTIONS

Launch #1 - Set #581

Station Ship - Drift

	<u>14 & 15 June '60</u>	<u>25 June '60</u>
Drift Station Zero Check 99.771 to 99.780	Table 1	Table 4
99.781 to 99.790	" 2	" 5
99.791 to 99.800	" 3	" 6

(Ship Position determined from 14 & 15 June Ship Calibrations)

<u>Distance in Miles</u>	<u>Correction</u>		
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>
0.00 - 0.83	+0.06	+0.05	+0.04
0.84 - 4.15	+0.05	+0.04	+0.03
4.16 - 7.49	+0.04	+0.03	+0.02

(Ship Position determined from 25 June Ship Calibration)

	<u>Table 4</u>	<u>Table 5</u>	<u>Table 6</u>
0.00 - 2.49	+0.03	+0.02	+0.01
2.50 - 5.82	+0.02	+0.01	0.00
5.83 - 9.18	+0.01	+0.00	-0.01

SHORAN CORRECTIONS

Launch #2 - Set #581

Station Ship - Drift

Drift Station Zero Check	99.775 - 99.784	Table 1	Table 5
" " " "	99.785 - 99.794	" 2	" 6
" " " "	99.795 - 99.804	" 3	" 7
" " " "	99.805 - 99.814	" 4	" 8

(Ship Position determined from 14 & 15 June '60 Ship Calibrations)

<u>Distance in Miles</u>	<u>Correction</u>			
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>	<u>Table 4</u>
0.09 - 3.40	+0.07	+0.06	+0.05	+0.04
3.41 - 6.73	+0.06	+0.05	+0.04	+0.03
6.74 - —	+0.05	+0.04	+0.03	+0.02

(Ship Position determined from 25 June '60 Ship Calibration)

	<u>Table 5</u>	<u>Table 6</u>	<u>Table 7</u>	<u>Table 8</u>
0.00 - 1.07	+0.05	+0.04	+0.03	+0.02
1.08 - 4.38	+0.04	+0.03	+0.02	+0.01
4.39 - 7.73	+0.03	+0.02	+0.01	0.00
7.74 - —	+0.02	+0.01	0.00	-0.01

SHORAN CALIBRATION

Launch #3 - Set #1352

Station Ship - Drift

Drift Station Zero Check	99.776 - 99.785	Table 1	Table 6
	99.786 - 99.795	" 2	" 7
	99.796 - 99.805	" 3	" 8
	99.806 - 99.815	" 4	" 9
	99.816 - 99.825	" 5	" 10

(Ship Position determined from 14 & 15 June '60 Ship Calibration)

<u>Distance in Miles</u>	<u>Correction</u>				
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>	<u>Table 4</u>	<u>Table 5</u>
0.00 - 1.72	+0.06	+0.05	+0.04	+0.03	+0.02
1.73 - 4.92	+0.05	+0.04	+0.03	+0.02	+0.01
4.93 - 8.16	+0.04	+0.03	+0.02	+0.01	+0.00

(Ship Position determined from 25 June '60 Ship Calibration)

	<u>Table 6</u>	<u>Table 7</u>	<u>Table 8</u>	<u>Table 9</u>	<u>Table 10</u>
0.00 - 2.85	+0.03	+0.02	+0.01	0.00	-0.01
2.86 - 6.18	+0.02	+0.01	0.00	-0.01	-0.02
6.19 - --	+0.01	0.00	-0.01	-0.02	-0.03

SHORAN CORRECTIONS

Launch 4 - Set #1313

Station Ship - Drift

Drift Station Zero Check	99.779 - 99.788	Table 1	Table 4
	99.789 - 99.798	" 2	" 5
	99.799 - 99.808	" 3	" 6

(Ship Position determined from 14 & 15 June '60 Ship Calibrations)

<u>Distance in Miles</u>	<u>Correction</u>		
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>
0.00 - 0.95	+0.08	+0.07	+0.06
0.96 - 7.02	+0.07	+0.06	+0.05
7.03 - ---	+0.06	+0.05	+0.04

(Ship Position determined from 25 June '60 Ship Calibration)

	<u>Table 4</u>	<u>Table 5</u>	<u>Table 6</u>
0.00 - 2.30	+0.05	+0.04	+0.03
2.31 - 7.84	+0.04	+0.03	+0.02
7.85 - ---	+0.03	+0.02	+0.01

SHORAN CORRECTIONS

Ship Set #1192

Station Cape - Rate

		<u>14 & 15 June '60</u>	<u>25 June '60</u>
Rate Station Zero Check	99.756 to 99.765	Table 1	Table 5
	99.766 to 99.775	" 2	" 6
	99.776 to 99.785	" 3	" 7
	99.786 to 99.795	" 4	" 8

<u>Distance in Miles</u>	<u>Correction</u>			
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>	<u>Table 4</u>
<u>14 & 15 June</u>				
0.00 - 2.26	+0.07	+0.06	+0.05	+0.04
2.27 - 7.81	+0.06	+0.05	+0.04	+0.03
7.82 - —	+0.05	+0.04	+0.03	+0.02
<u>25 June</u>	<u>Table 5</u>	<u>Table 6</u>	<u>Table 7</u>	<u>Table 8</u>
0.00 - 1.83	+0.04	+0.03	+0.02	+0.01
1.84 - 7.99	+0.03	+0.02	+0.01	0.00
8.00 - —	+0.02	+0.01	0.00	-0.01

SHORAN CORRECTIONS

Launch #1 - Set #581

Station Cape - Rate

Rate Station Zero Check	99.776 to 99.785	Table 1
" " " "	99.786 to 99.795	" 2
" " " "	99.796 to 99.805	" 3
" " " "	99.806 to 99.815	" 4

<u>Distance in Miles</u>	<u>Correction</u>			
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>	<u>Table 4</u>
0.00 to 1.23	+0.05	+0.04	+0.03	+0.02
1.24 - 4.57	+0.04	+0.03	+0.02	+0.01
4.58 - 7.93	+0.03	+0.02	+0.01	0.00
7.94 - —	+0.02	+0.01	0.00	-0.01

SHORAN CORRECTIONS

Launch 2 - Set #518

Station Cape - Rate

Rate Station Zero Check	99.776 - 99.785	Table 1
	99.786 - 99.795	" 2
	99.796 - 99.805	" 3

<u>Distance In Miles</u>	<u>Correction</u>		
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>
0.00 to 0.95	+0.04	+0.03	+0.02
0.96 - 4.28	+0.03	+0.02	+0.01
4.29 - 7.62	+0.02	+0.01	0.00
7.63 - 10.00	+0.01	0.00	-0.01

SHORAN CORRECTIONS

Launch 3 - Set #1352

Station Cape - Rate

Rate Station Zero Check	99.764 - 99.773	Table 1
	99.774 - 99.783	" 2
	99.784 - 99.793	" 3
	99.794 - 99.803	" 4

<u>Distance in Miles</u>	<u>Correction</u>			<u>Table 4</u>
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>	
0.00 - 2.90	+0.030	+0.020	+0.01	0.00
2.91 - 6.30	+0.020	+0.010	0.00	-0.01
6.31 - 9.75	+0.010	0.00	-0.01	-0.02

SHORAN CORRECTIONS

Launch #4 - Set #1313

Station Caps - Rate

Rate Station Zero Check	99.776 - 99.785	Table 1
	99.786 - 99.795	" 2
	99.796 - 99.805	" 3
	99.806 - 99.815	" 4

<u>Distance in Miles</u>	<u>Correction</u>			<u>Table 4</u>
	<u>Table 1</u>	<u>Table 2</u>	<u>Table 3</u>	
0.00 - 0.72	+0.040	+0.030	+0.020	+0.010
0.73 - 4.05	+0.030	+0.020	+0.010	0.000
4.06 - 7.38	+0.020	+0.010	0.000	-0.010

8330
RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

April 23, 1963

Nautical Chart Division: R. H. Carstens

Plane of reference approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 8535

Locality Cape St. Elias, Alaska

Chief of Party: M. E. Wennermark 1960

Plane of reference is mean lower low water

ft. on tide staff at

ft. below B. M.

Height of mean high water above plane of reference at the
working grounds is 9.2 ft.

Condition of records satisfactory except as noted below:

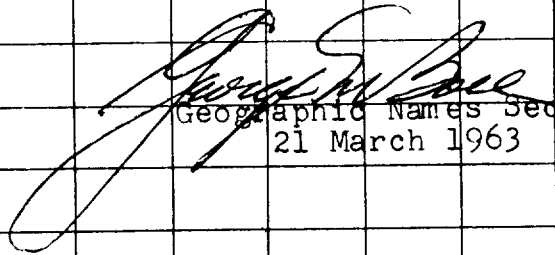


Chief, Tides and Currents Branch

GEOGRAPHIC NAMES

Survey No. H-8535W.D.

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On Chart No. 8513</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On previous survey No.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On U. S. quadrangle Maps</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">From local information</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On local Maps</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">P. O. Guide or Map</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Rand McNally Atlas</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">U. S. Light List</div> </div>										
	A	B	C	D	E	F	G	H	K		
Cape St. Elias	x									x	1
Gulf of Alaska	x										2
Kayak Island	x									x	3
Pinnacle Rock	x										4
Southeast Rock	x										5
											6
											7
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 Geographic Names Section
 21 March 1963

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8535 W.D.

Records accompanying survey: Smooth sheets 1

Combined with
H-8534

{ boat sheets 1; sounding vols. 2*; wire drag vols. 3;

Descriptive Reports 1; graphic recorder envelopes 1;

special reports, etc. #1 Additional vol. filed with H-8534;

I&D Sheet; 1-Mylar boat sheet; 3-Blue-line Manuscripts filed

with H-8534 & 1 Stereo pr. color photos Nos. 60W1743 & 1744 } See Descriptive Report.

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

Number of positions on sheet	353
Number of positions checked	20
Number of positions revised	2
Number of soundings revised (refers to depth only)	
Number of soundings erroneously spaced	
Number of signals erroneously plotted or transferred	
Topographic details	Time
Junctions	Time
Verification of soundings from graphic record	Time
Special adjustments	Time 20

Pre-Verification by X. W. Wellman

20 hrs.

4-16-76

Verification by Total time Date

Reviewed by Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-8535 W. D.

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

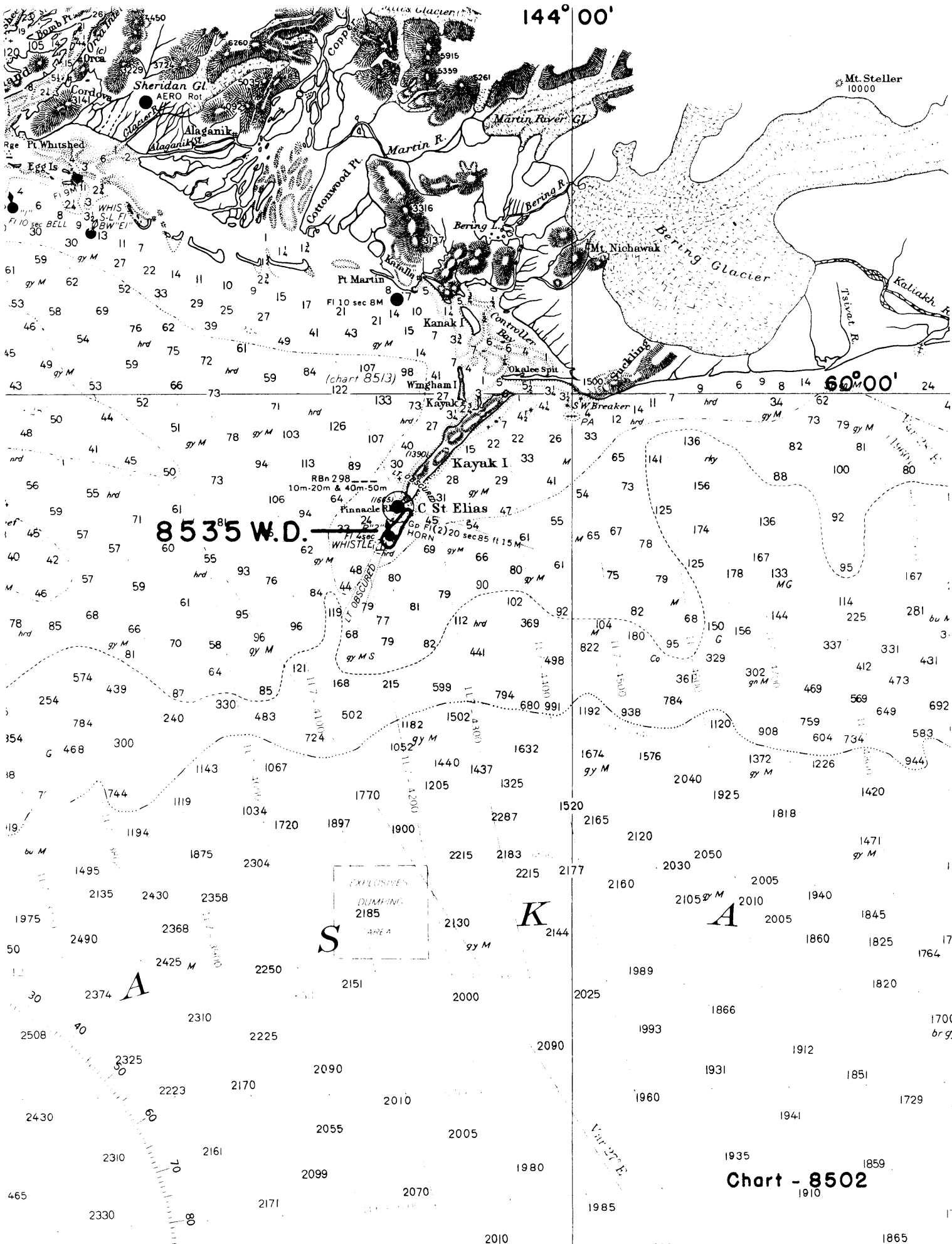
1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
5. All items affecting 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 and are a little larger than the adjacent soundings.
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 and overlapping curves made identical.
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
18. The depth curves have been inspected before inking.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
20. Heights of rocks were checked against range of tide.
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
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.
25. Degree and minutes values and symbols have been checked.
26. Questionable soundings have been checked on the fathograms.

27. Source of shoreline and signals (when not given in report).
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
30. Depth curves were satisfactory except as follows:
31. Sounding line crossings were satisfactory except as follows:
32. Junctions with contemporary surveys were satisfactory except as follows:
33. Condition of sounding records was satisfactory except as follows:
34. The protracting was satisfactory except as follows:
35. The field plotting of soundings was satisfactory except as follows:
36. Notes to reviewer:

Verified by

Date



8535 W.D.

EXPLOSIVES
DUMPING
2185

K

A

Chart - 8502

1910

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8535 W. D.

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
4/26/63	8513	<i>h. j. keeler</i>	Before After Verification and Review, Part. app'd.
4-22-63	8002	<i>h. j. keeler</i>	Before After Verification and Review No correction. thru cht 8513
8-14-64	8502	<i>G. R. McCANN</i>	Before After Verification and Review No correction thru Cht 8513 Dwg #4 Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.