8065a b

Diag. Cht. Nos. 8102-3 & 8152-2

CS-357

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HO-1153 *Office No.* H-8065 a & b

LOCALITY

State S. E. Alaska

General locality Cordova Bay

Locality South of Barrier Islands

19~~4~~53 - 54

CHIEF OF PARTY

F. R. Gossett

LIBRARY & ARCHIVES

DATE November 1, 1956

B-1870-1 (1)

8065a b

Form 537
(Ed. June 1946)

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-8065

Field No. HO-1153

State S. E. Alaska

General locality Cordova Bay

Locality South of Barrier Islands

Scale 1:10,000 Date of survey 30 May - 5 Sept. 1953 - 1954

Instructions dated 17 March 1953

Vessel Ship HODGSON

Chief of party F. R. Gossett

Surveyed by E. F. Hicks, Jr.

Soundings taken by fathometer, graphic recorder, hand lead, wire 808 Graphic recorder

Fathograms scaled by R. Owens

Fathograms checked by H. Hildahl & D. Williams

Protracted by C.A.J. Pauw & W.M.M.

Soundings penciled by C.A.J.Pauw & W.M.M.

Soundings in fathoms XXXXX at XXXXX MLLW

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 777032

Descriptive Report

to accompany

Hydrographic Survey H-8065 - Field No. HO-1153

Scale 1:10000 Ship HODGSON F.R. Gossett, Comdg.

Surveyed by E. F. Hicks, Jr.

A. PROJECT

This survey was executed as part of Project CS-357 under instructions 22/MEK, S-2-HO dated 17 March 1953.

B. SURVEY LIMITS AND DATES

This survey covers part of the southern part of Cordova Bay south of The Barrier Islands, Lat. 54° 47' and west of south west shore of Prince of Wales Island, Long. 132° 19'. The southern limit is along Lat. 54° 43' to Long. 132° 21' and then runs northwest to Lat. 54° 45', Long. 132° 23.5 thence west to Long. 132° 30' and then northwest to Lat. 54° 47'.

Field work on this survey began on 30 May 1953 and was completed 5 Sept. 1953.

On the north this survey is joined by contemporary survey H-8066, Field HO-1253; on the west and southwest of Long. 132° 21' it is joined by contemporary survey H-8064, Field No. HO-2153 and on the south, east of Long. 132° 21', by Hydrographic Survey H-3042 (1909).

C. VESSEL AND EQUIPMENT

This survey was executed with standard 30 foot hydrographic launch No. 98 and plane personnel Boat No. 134. Both launches were operated from the ship. Both launches had a turning radius of approximately 50 meters at sounding speed.

808 fathometers Nos. 62 and 77 were used on the survey.

D. TIDE AND CURRENT STATIONS

A tide station was maintained in Minnie Bay, Lat. 54° 43.6, Long. 132° 18.2 during the period 1 - 30 June 1953 and at Tah Bay, (outside the limits of this sheet) Lat. 54° 49.70, Long. 132° 19.98 during the entire period. By letter 36-rjb dated 11 Aug. 1953 this party was advised that the tides at Tah Bay and Minnie Bay were similar in time and height and either gage could be used without correction for reduction of soundings throughout the area. In order to simplify reduction of soundings it was decided to use the Tah Bay gage for reduction of all soundings.

No current stations were occupied within the limits of this survey.

E. SMOOTH SHEET

All work on smooth sheet was done by Seattle Processing Office and will be covered by their report which will be an addenda to this report.

F. CONTROL STATIONS

Horizontal control was furnished by 1909 triangulation sheets 236, 245, and 246, Vol. G-609 with additional second order and supplemental triangulation by this party. Topographic stations were located by planetable on graphic control sheets HO-A, HO-B and HO-C all made during the current season. It is believed that all stations are located accurately enough that there would be no effect on the accuracy of the hydrography.

G. SHORELINE AND TOPOGRAPHY

The shoreline and topography is to be added after compilation of air photographic manuscripts.

On account of the steep to, rocky coasts it was impractical to delineate the low water line.

H. SOUNDINGS

All soundings were made using 808 fathometers. Correction to these soundings are discussed in the fathometer report.

I. CONTROL OF HYDROGRAPHY

All hydrography was controlled by visual sextant angles on shore objects or signals.

J. ADEQUACY OF SURVEY

This survey is complete and within limits covered should supersede all prior surveys for charting.

Junction with adjoining surveys appears to be satisfactory.

K. CROSSLINES

There are approximately 61 miles of crosslines or 8 percent of lines run. Crossings appear to be satisfactory and minor discrepancies may be explained by rough, irregular bottom.

L. COMPARISON WITH PRIOR SURVEYS

This survey was compared with surveys H-3042 and H-3043 both 1909 surveys on a 1:20000 scale.

The 1909 surveys were not as complete as the current survey and in many of the areas only a few reconnaissance lines were run. Hence many new shoals, rocks, etc. were found. It is believed all known shoals were proved with an equal or less depth than shown on the original surveys.

M. COMPARISON WITH CHART

This survey was compared with Chart 8145, Second Edition April 1943 last print date 14 May 1951. As the chart was compiled from surveys mentioned in paragraph L the same statement as regarding shoals will suffice. No features not shown on the surveys were noted on the chart. A detailed list of discrepancies with recommendations will be discussed under paragraph N.

N. DANGERS AND SHOALS

The table below lists charted dangers as well as new dangers and is intended also as a comparison between chart and new survey. The depths given are from boat sheet and records, and may be revised slightly when smooth plot is made.

	CHARTED LOCATION	CHARTED DEPTH	NEW LOCATION	NEW DEPTH	RECOMMENDATION
1.	West of Round Islands	3 rocks awash	West of Round Islands	6 rocks awash Pos. 1-6r	Chart 6 rocks
2.	54° 46!3 132° 30!0	kelp patch	54° 46!29 132° 29!98	3.0 Pos. 19aa	Chart new depth and kelp
3.	54° 45!9 132° 30!0	kelp patch 11 fm. sdg.	54° 45!90 132° 29!93	2.1 Pos. 15aa	Chart new depth and kelp
4.	54° 46!1 132° 28!7	kelp patch 2½ fm. sdg.	54° 46!05 132° 28!83	1.4 Pos. 12aa	Chart new depth and kelp
5.	54° 46!8 132° 27!25	kelp 7 fm. sdg.	54° 46!78 132° 27!20	rock awash Pos. 1y	Chart rock awash
6.	54° 46!3 132° 26!6	kelp patch	54° 46!18 132° 26!56	rock uncovered 0.6 feet. Pos. 15e	Chart kelp and rock awash
7.	54° 46!1 132° 26!6	kelp patch	54° 46!04 132° 26!62	2.7 Pos. 24aa	Chart kelp and new depth
8.	54° 46!5 132° 25!9	kelp patch	54° 46!45 132° 25!88	3.6 Pos. 181h+	Chart kelp and new depth
9.	54° 46!6 132° 25!5	kelp patch	54° 46!62 132° 25!65	4.2 Pos. 182h+	Chart kelp and new depth
	(Note: This area is marked by extensive kelp and rough irregular bottom.)				
10.	54° 45!5 132° 25!1	kelp and 8 fm. sdg.	54° 45!47 132° 25!03	4.3 Pos. 19z	Chart kelp and new depth
11.	54° 45!2 132° 25!1	kelp and 4 fm. sdg.	54° 45!18 132° 25!11	2.8 Pos. 17z	Chart kelp and new depth
12.	54° 46!3 132° 23!7	kelp and 2 fm. sdg.	54° 46!28 132° 23!72	1.0 Pos. 15z	Chart kelp and new depth
13.	54° 47!2 132° 22!3	2¼ fm. sdg.	54° 47!20 132° 22!40	2.1 Pos. 172h	Chart kelp and new depth

	CHARTED LOCATION	CHARTED DEPTH	NEW LOCATION	NEW DEPTH	RECOMMENDATION
14.	54° 47!0 132° 22!7	5.0 fms.	54° 46!95 132° 22!65	5.0 Pos.216u+	Chart-Also See No. 2 on new shoals.
15.	54° 44!3 132° 20!9	Sunken rock & breaker	54° 44!28 132° 20!97	1.7 Pos.128a	Chart new depth and kelp.
16.	54° 43!4 132° 19!4	Sunken rock	54° 43!43 132° 19!5[illegible]	0.2 Pos. 5b	Chart new depth and kelp.

NEW SHOALS

	Location	Depth	Position
1.	54° 45!08 132° 26!51	6.9 fms.	115y+
2.	54° 47!06 132° 22!53	4.0 fms.	1k+
3.	54° 45!80 132° 22!30	5.0 fms.	89ba+
4.	54° 45!38 132° 23!30	12.7 fms.	86a+
5.	54° 46!94 132° 21!21	2.9 fms.	58ba+
6.	54° 46!76 132° 21!15	2.0 fms.	81ba+
7.	54° 45!58 132° 20!25	2.3 fms.	88q+
8.	54° 45!25 132° 20!50	General foul area - numerous rocks	1 - 12s
9.	54° 44!60 132° 21!45	4.4 fms.	27w+
10.	54° 44!25 132° 21!64	7.1 fms.	27a+
11.	54° 44!52 132° 21!13	3.4 fms.	54aa+
12.	54° 43.76 132° 20!78	3.2 fms.	58aa
13.	54° 46!41 132° 26!74	Rock uncov. 1.2 ft.	18e
14.	54° 44!02 132° 19!0	0.5 fms.	3b

All charted dangers, shoals and bare rocks were found as charted or shoaler depths were found on each. Some slight displacement was noted.

O. COAST PILOT INFORMATION

No anchorages are recommended within the area covered by this survey for vessels of any size.

Small boats up to 35 feet in length will find well protected anchorage in Minnie Bay in two fathoms depth, and soft mud bottom.

The ship did not anchor within the limits of this survey.

Small fishing boats in entering Eureka Channel frequently run close along the southwest shore of Prince of Wales Island entering about Lat. 54° 43!0, Long. 132° 18!35 on course 338° T. for 0.65 mile, thence on course 000° T. for 0.3 mile, thence on course 334° T. for 0.4 mile, thence course 305° T for 0.3 mile, thence course 339° T. for 1.7 mile, thence course 000° T. for 0.4 mile, thence course 299° T. for 1.6 mile thence into Eureka Channel. The controlling depth in this channel is about 3 fathoms in the small channel west of Minnie Bay but the width of this channel limits its use to vessels not over 35 to 40 feet in length.

The channel through the Round Islands, course 328° T., is also used quite extensively by fishing boats as well as the channel east of the Round Islands.

In the spring the general wind was from a southerly direction with a corresponding southerly ground swell which makes landing on the exposed rocks and islands rather difficult.

During the period June through August most of the shoals and rocks are marked by kelp patches and while kelp should always be regarded as a danger signal its absence should not be taken to mean the passage is clear.

P. AIDS TO NAVIGATION

Three fixed aids to navigation lie within the limits of this survey, all maintained by U. S. Coast Guard.

a. Round Islands Light
b. Eureka Channel Daybeacon
c. Point Marsh Light

There are no floating aids to navigation within this survey.

Q. LANDMARKS FOR CHARTS

The only landmarks recommended for charting is a monument (signal TOMB), Lat. 54° 45!20, Long. 132° 20!18.

R. GEOGRAPHIC NAMES

See special report.

S. SILTED AREAS

None noticed.

T. BYPRODUCT INFORMATION

None.

U. NOTES FOR INFORMATION OF SMOOTH PLOTTER

The shoreline as shown on boat sheet in red dashed lines is from old (1909) hydrographic survey enlarged from 1:20000 scale and numerous discrepancies were noted during the course of the survey. It is believed these will all be reconciled when manuscripts for nine lens photographs are received.

In areas close to the shore and inside areas marked foul no attempt was made to locate all individual rocks. Most of these were indicated on the air photo inspection.

All signals not on shore or rock islets are described on graphic control sheets HO-A, B, and C with heights above datum plane.

V. GENERAL DESCRIPTION OF SHORE AREA

Practically all the shore area, except small rock islets, is covered with dense growth of evergreen trees ranging from 30 to 90 feet in height and reaching to the high water line. There were practically no sand or gravel beaches in the area and most of the land between high and low water is rocky and covered with kelp.

W-X-Y - NONE

Z. TABULATION OF APPLICABLE DATA

1. Triangulation Records and Report - forwarded to Wash. 12/18/53.
2. Air photo inspection and report - forwarded to Wash. 12/18/53.
3. Fathometer Report - forwarded to Wash. 12/18/53.
4. Coast Pilot Report - forwarded to Wash. 12/18/53.
5. Geographic Names Report - forwarded to Wash. 12/18/53.
6. Graphic Control Sheets HO-A,B, & C and reports. - forwarded to Wash. 12/16/53.

Respectfully submitted,

E. F. Hicks, Jr.
CDR, USC&GS

STATISTICS FOR HYDROGRAPHIC SURVEY H-8065 (1953)

VOL.	DATE	DAY	VESSEL	POSITIONS	SOUNDINGS STAT. MI.
1	30 May	a	98	168	37.3
1	31 May	b	98	150	30.1
2	9 June	c	98	172	34.7
2	10 June	d	98	173	40.3
3	11 June	e	98	172	40.7
3	12 June	f	98	48	10.4
3	13 June	g	98	68	13.6
4	14 June	h	98	185	37.7
4	24 June	j	98	191	39.5
5	25 June	k	98	5	1.0
5	29 June	l	98	202	33.3
6	9 July	m	98	182	33.8
6	10 July	n	98	137	25.4
6	11 July	p	98	12	1.9
6	12 July	q	98	184	31.0
7	13 July	r	98	11	0.7
7	14 July	s	98	177	28.8
8	15 July	t	98	194	38.3
8	22 July	u	98	218	46.9
9	23 July	v	98	193	27.5
9	24 July	w	98	204	41.6
10	25 July	x	98	240	42.3
10	26 July	y	98	204	28.8
12	6 Aug.	z	98	25	2.1
12	7 Aug.	aa	98	65	4.6
13	10 Aug.	ba	98	151	21.4
13	11 Aug.	ca	98	181	30.6
13	12 Aug.	da	98	136	22.4
14	5 Sept.	ea	98	7	--
11	27 July	a	134	219	26.2
11	28 July	b	134	156	14.1
12	29 July	c	134	192	22.2
	Totals for sheet - - - - -			4622	809.0

23.2 square statute miles.

1954 Apr. 19 fa 98 159

Apr. 22 ga 98 127

4908

FATHOMETER CORRECTIONS HYDROGRAPHIC SUVEY H-8065 (1953)

Launch 98 - 808 No. 77

A Scale	B Scale
+0.2 fathom	+0.8 fathoms

Launch 98 - 808 No. 62

A Scale	B Scale
+0.2 fathom	+0.3 fathom

Launch 134 - 808 No. 77

A Scale	B Scale
0.0 fathom	+0.6 fathom

Launch 134 - 808 No. 62

A Scale	B Scale
0.0 fathom	+0.1 fathom

TIDE NOTE FOR HYDROGRAPHIC SURVEY H-8065 (1953)

TIDE STATIONS

TAH BAY - Lat. 54° 49!70
Long.132° 19!98

MLLW = 3.1 feet on staff

MINNIE BAY - Lat. 54° 43!57
Long.132° ~~19!98~~ 18.20

MLLW = 4.6 feet on staff

By letter 36-rjb dated 11 Aug. 1953 this party was advised that tides at Minnie Bay and Tah Bay were practically identical and either could be used without time or height correction. Since the Minnie Bay gage was not in operation during the entire period the Tah Bay gage was used for all tidal reductions.

APPROVAL SHEET

Hydrographic Survey H-8065 (Field No. HO-1153) has been examined and is approved as follows: Boat sheet, records, fathograms and Cdr. Hicks' report.

Sheet is being transferred to Seattle Processing Office for smooth plotting.

F. R. Gossett,
CDR., USC&GS
Comdg., Ship HODGSON

1/11/54

ADDENDA TO DESCRIPTIVE REPORT FOR HYDROGRAPHIC SURVEY

FIELD NO. HO-1153 - REGISTRY NO. H-8065

1. This addenda is to cover additional work accomplished on this survey during the 1954 season under instructions 22/MEK, S-2-HO dated 18 March 1954, Subject "Additional Field Work, Project CS-357".

2. This survey was executed with Launch 98, using 808 fathometer 156SPX calibrated for velocity of 800 fathoms per second. Standard methods were used.

3. Soundings were reduced for tide using tide gage at Tah Bay.

4. Hydrography was controlled by visual sextant angles on shore objects located during the 1953 season.

5. Phase comparison between A & B scales was determined, see pages 71 and 72, Vol. 19, Sheet Field No. HO-1253, Registry No. H-8066. Soundings on B scale have a correction of +2.0 fathoms.

6. The only significant depth found on this additional work was a 3.7 fathom soundings, position 135-136fa, Lat. 54° 44!08, Long. 132° 21!16.

7. In the smooth plotting of the sheet by the Seattle Processing Office, some trouble, due to weak fixes, was noted in the channel and area west of triangulation station MEX. Additional work was done in this area.

8. Statistics for additional work:

Vol.	Date	Day	Vessel		Positions	Soundings Stat. Miles
15	4/19/54	fa	98		159	27.2
15	4/22/54	ga	98		127	18.1
				TOTALS	286	45.3

Respectfully submitted,

E. F. Hicks, Jr.
CDR, USC&GS

Approved:

J. Bowie,
CDR, USC&GS
Comdg., Ship HODGSON

GEOGRAPHIC NAMES ON H-8065

Round Islands

Egg Passage

Dewey Rocks

Kelp Pass

Barrier Islands

Middle Island

Far Point

Rocky Pass

Black Rock

Cordova Bay

Eureka Channel

Mexico Point

Thompson Passage

Prince of Wales Island

Minnie Bay

Minnie Cutoff

Point Marsh

SHEET H-8065

PROCESSING OFFICE NOTES

General

This has been a difficult and tedious sheet to plot. Early this year the sheet was assigned to Mr. Pauw and he worked almost continuously on it until the last part of August. The following are his comments regarding the sheet:

"Smooth Sheet

The projection was drawn by Processing Office Personnel. Triangulation stations were plotted from G.P.'s. Topographic signals were transferred from tracings of the plane-table control sheets and checked from film positives of the same topographic plates. Shorelines were transferred from brome oil prints of the photogrammetric planimetric compilations, T-11304, T-11305, T-11320 and T-11321.

Control

The positions of the hydrographic control stations on the smooth sheet were meticulously compared with those on the boat sheet because some very erratic hydroline plotting needed investigation. It was discovered that triangulation station DEWEY 2 was erroneously plotted on the boat sheet. (West of meridian 132° 29' 00" - should be east, as on smooth sheet and brome oil prints.) Considerable (1 millimeter) displacement was brought to our attention by the Director's letter of 3 March 1954, file 71-aal. Upon discussion and advice of the topographer the following signals were adjusted: AND, CRY, DUD, EST, FRO, JUG, OWL, and KIM. Many of these signals moved as much as 0.8 millimeters. Sounding lines plotted better for time and course. About 300 positions were replotted.

Signal BUM shown on topographic sheet was found to cause considerable jumps in the hyd rographic lines. The hydrographer experienced the same while doing the hydro and he had observed sextant angles at this station. His original notes are pasted inside the cover of Vol. 9, H-8065. All rays were plotted on a sheet of onion-skin; sheets H-8065 and H-8066 were taped together and the vast majority of rays were held so as to pass the plotted signals simultaneously. The resulting hydrographic location moved the signal over 2 millimeters and was much more satisfactory.

Signal ODD - The hydrographer informed us that the islet 130 meters toward the eastward resembled signal ODD, and was in some instances mistaken for signal ODD. When erratic positions using ODD were found the position was tested using the islet object. Latitude 54° 46'.48, Longitude 132° 22'.26.

Signal NED - there is considerable displacement between smooth and boat sheets - smooth sheet position was carefully checked and found to agree with graphic control sheet. Many fixes using signal NED failed to make good for time. The location of this signal as shown on the graphic control is possibly in error.

Hydrographic Plotting

The recorded values in the record frequently do not agree even closely to the position shown on the boat sheet. Numerous notes on plotting were entered - as much adjustment to the sounding lines was needed to make good crossings and satisfy the "time and course" element. Some of the recording was barely legible and mixups in similarity of signal names were frequent, causing the plotter much loss of time. The area which was most difficult to plot satisfactorily was at the entrance to Eureka Channel, one mile westward of triangulation station MEX, 1909. (From ~~Latitude~~ Long 54° 45' 00" to ~~Latitude~~ Long 54° 45' 30" and from ~~Latitude~~ Long 132° 22' 30" to ~~Latitude~~ Long 132° 24' 00".)

The sounding lines as recorded do not make good for time and course, in numerous instances fail to make satisfactory crossings. Many positions as shown on the boat sheet do not agree with: "that which is recorded in the Sounding record." This is especially notable with "a" and "b" days, Launch #98. Positions as shown on the boat sheet are frequently displaced by 1 cm. or more. Boat sheet sounding lines show many unsatisfactory crossings.

In the early stages of smooth plotting these differences between the record and boat sheet were discovered. The smooth plotted positions showed erratic times and courses. These facts were pointed out by the Processing Office to the hydrographer, and as he could not account for the numerous descrepancies, he agreed to run additional lines in said area.

The additional lines run in 1954 also leave much to be desired. The East - West lines plot best, making very good time and quite reasonable courses. Some of the North - South lines regularly fail to make good for time and course and frequently fail to make satisfactory crossings with the East - West lines. Apparently hydro-observers had difficulty seeing signals as corrections appear in the record at most instances where signals observed constituted a new fix (ie: different signals used than before)

The 1954 survey lines were adjusted to obtain agreement in themselves (excepting pos. No. 62 through pos. No. 72, omitted.)

First. The soundings on the 1954 work were plotted - at least on that portion on which the positions plotted made good time and course as recorded in the record.

Second. The soundings on the 1954 work, positions adjusted as previously described were plotted.

Third. Sounding lines of the 1953 survey which made good time and course as recorded in the records and which fitted 1954 soundings for crossings were penciled in.

Fourth. Soundings of the 1954 survey position adjusted for time and course were penciled in, provided their crossings agreed satisfactorily with soundings already shown.

Fifth. Soundings on lines which did not make satisfactory crossings were omitted if coverage was adequate.

Sixth. Where large gaps in hydro lines remained, questionable 1953 lines were adjusted very arbitrarily to fit prior soundings.

Lines of 1953 and 1954 which obviously do not fit and which were not needed to give coverage were: (1) position plotted and pricked - but not inked and not joined up; (2) Marked in the sounding records "Questionable - soundings omitted."

Conclusion and Recommendation

The smooth plotter concludes that the trouble can be accounted for as follows:

1. Small errors in the geographic locations of hydrographic signals. The graphic control location of signal NED is strongly suspected.
2. Erroneous objects observed onto or recorded by the hydrographic party.
3. Weak fixes and swingers - probably no better choice available at the time the hydrography was accomplished.
4. Very irregular and rough bottom, with several shoals and pinnacles which rise abruptly from great depth, make perfect crossings most difficult to attain.
5. Probable currents and edies about the islands and shoals, large tides and exposed area to ocean swells very likely make the running of straight courses most difficult.

Sounding Characteristics

The area covered by this survey is very broken. The channels are deep with steep sides. Numerous shoals and pinnacles abound in random patterns. The sounding lines in general travel north and south - development over shoals East and West. Some developments are so congested that smallest size soundings had to be penciled to even show half the soundings recorded. Crossings are reasonably good throughout the sheet - where these were not, positions were frequently adjusted. Fathograms were spot checked and investigated where differences with cross lines and adjacent soundings were unreasonably large. G-a day Volume 15 was entirely rescanned.

Rocks

There are about 85 rocks on this sheet - all those listed in volumes 1 and 2, pages 2, were checked off as plotting proceeded. Several of these rocks also were shown from topography and so noted in the sounding records. At Longitude 54° 45'.7, Latitude 132° 25'.65 rock shown on photo topo was deleted, because it is not substantiated by the hydrography; hydro sounding lines "c" and "g" days pass exactly through purported rock with depth of 10 and more fathoms."

Glenn W. Moore

Glenn. W. Moore
OIC, Seattle Processing Office

COMMENTS ON DESCRIPTIVE REPORT FOR SHEET H-8065 (HO-1153)

The plotting of this smooth hydrographic sheet was assigned to one of the most experienced Cartographers, Mr. Pauw.

Eight Hundred Seven hours were required to complete this smooth plotting exclusive of making the projection. This is close to four times the hours required for the field work and considerably in excess of the time required for the number of positions involved.

It should have been apparent to the hydrographer that some of the control was in error but there is little evidence that additional corrective graphic control was done in the field. One of the graphic control sheets when checked was found to have an error in the projection. The Processing Office made the best adjustments of hydrographic signal position on this sheet as was possible after correction of the projection.

Consultation by the Processing Office with the hydrographer during the winter of 1953-54 failed to produce a solution of the inability to replot many positions on the boat sheet from the data in the sounding volume. A large part of this trouble was in the entrance to Eureka Channel west of Mexico Point.

For this reason additional hydrography was accomplished in the area in question in 1954 and again consistent hydrographic lines were not obtained.

The difficulty in plotting the smooth sheet was further compounded by extremely illegible recording in the sounding volumes and misspelling of many hydrographic signal names.

The Processing Office notes accompanying the Description Report states on page two, the method resorted to to adjust the hydrography. This required extensive compromise for an important approach channel to Cordova Bay.

It is my opinion that the basic trouble encountered on plotting this smooth sheet is due to inaccurate location of some of the graphic control hydrographic signals. The area involved in undoubtedly a very difficult hydrographic area. A swell enters Cordova Bay with the prevailing southerly wind; the foul broken bottom calls for caution; many split lines and development visibility of signals across the sound must have been poor and aggravated by the prevailing swell and motion of the launch.

It is unfortunate that this modern survey is rendered suspect in parts by the conditions and curcumstances described in this note and that of the smooth plotter.

Charles Pierce
Captain, C&GS
Supervisor, NW District

SUPPLEMENT TO PROCESSING OFFICE NOTES

H-8065 (HO-1153)

CONTROL

Signal NED, Lat. 54°46'.60, Long. 132°24'.36 - When the junction between this sheet and H-8064 was compared it became apparent that something was out of position. An investigation of the sounding records showed that in almost every place where there was a discrepancy signal NED was used in the fix. A request was made to the field party to relocate this signal. The new position puts the signal about 30 meters N.W. of the planetable position. A copy of the sextant angles, observed at signal NED and the field computations, along with computations based on the adjusted G.Ps., are included in this report.

Signal OFF, Lat. 54°46'.98, Long. 132°24'.72 - Moved to agree with photo location. All fixes using OFF were not replotted however, only those that involved NED.

Signal YEA, Lat. 54°46'.48, Long. 132°26'.66 - Moved to agree with photo location, though not used in the replot of the sheet.

Signal KEY, Lat. 54°46'.66, Long. 132°23'.62 - Moved from the graphic control location by resection cuts to improve sounding line agreement. Several resection cuts are shown on the blueline print.

All other signals used were left in their original positions and are shown in ink on the blueline sheet.

HYDROGRAPHIC PLOTTING

All positions using NED were replotted using the new location for NED, also a large number of positions, not using NED, that had been adjusted to fit crossings were replotted to obtain agreement with replotted positions using NED. All positions in the area that were not replotted were reinked and all soundings were penciled to make the area complete. It is hoped that this way it can be used as a unit.

The new location for signal OFF was used only where there was conflict with positions using NED. This was done in order to save time.

The above statement also applies to signal KEY except that it was not located on the photo plot and therefore was relocated by resection cuts.

Sextant angles used to locate signal NED, copied from letter of Captain John Bowie to the Seattle District Officer dated 17 September 1954.

MEX, 1909	80°45'
BLACK 2, 1953	
DEWEY 2, 1953	17°12'

Check angles

BLACK * DEB	19°40'	
BLACK - CAR	55°12'	
BLACK - BAT	57°42'	
BLACK - OFF	108°49'	(Checks new photo location)
LAM - BLACK	109°02'	

The fix on the triangulation stations was computed as a three point problem and the position computed.

In the area in the vicinity of triangulation station MEX, 1909 it was necessary to make some adjustment in sounding lines in order to get agreement. In this area the fixes using NED, which is used with signals to the north, are rather weak and do not agree too well with fixes on signals to the east.

A number of crossings were rescanned on the fathograms where crossings appeared bad. In all cases noted the differences were resolved. Due to the rough character of the bottom a small error in time whibe scanning the fathograms makes a considerable difference in depth.

ADEQUACY OF SURVEY

It is belived that the survey is complete and adequate for charting, though some doubt exists because of questionable control, as to the accuracy as regards Coast and Geodetic Survey standards.

The junctions with adjoining surveys are satisfactory and the depth curves can be adequately drawn.

DANGERS AND SHOALS

A Shoal sounding of 6.5 fathoms lies about 80 meters south and west of the deleted photo topo rock mentioned in the orginal processing notes. Possibly a floating kelp patch was mistaken for a rock awash in this area.

Respectfully submitted

William M. Martin

William M. Martin
Cartographer-in-Charge S.P.O.

Approved and forwarded

Frank G. Johnson

Frank G. Johnson, Captain C&GS
Seattle District Officer

22/MEK
D-1-NW

17 January 1955

To: Supervisor, Northwestern District
U. S. Coast and Geodetic Survey
705 Federal Office Building
Seattle 4, Washington

Subject: Surveys by Ship HODGSON in 1953 Field Season

References: (a) Director's letter of 7 October 1954 - 22/MEK, D-1-W
(b) Your Letters of 12, 18 and 22 October 1954

Photogrammetric positions are now available for some of the signals in the part of the HODGSON'S 1953 survey area in which errors were found in the graphic-control positions. The graphic-control sheets, copies of the photogrammetric manuscripts, and descriptive reports for the manuscripts will be sent to your office for use in correcting the questionable positions. In many instances it was necessary to office-identify the signals on the photographs. A color scheme has been used to indicate the method used to identify the signals and it is explained in the descriptive report.

A study shall be made to determine if the signal information now available will rectify the questionable hydrographic positions, or whether additional signal positions are needed. If additional positions are required, this office shall be informed of the areas where new locations are needed in order that instructions can be issued to the PATTON to accomplish the necessary field work the coming field season.

Since a great deal of time has already been spent in plotting the smooth sheets in question, it is desirable that the replotting of positions be restricted to a minimum. It is believed that, in general, the replotting can be restricted to junction areas; large open areas where several different fixes were used, and where there may be a question about adequate line spacing unless the positions are replotted; and important shoals or other dangers to navigation. Areas where the replotting will shift all positions about an equal amount and where the charting information portrayed by the replotted positions will not be appreciably different from that now available do not warrant replotting.

The Washington Office shall be informed of the amount of replotting believed necessary on each of the hydrographic sheets in question and of the estimated time required for each sheet. Information is also desired as to whether the replotting can be done on the smooth sheets now in Seattle, or whether it would be desirable to make blue-line copies of the sheets in the Washington Office and then use these sheets to replot part of the positions. The replotting shall not be started until further authorization is received from this office.

Acting Director

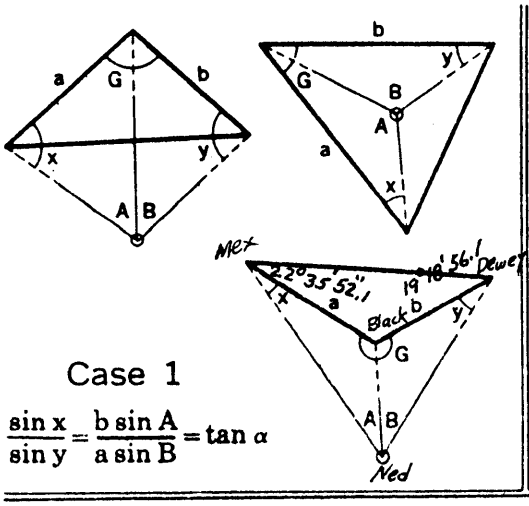
cc. Ship PATTON
Ship HODGSON
Chart Division

Form 653a
(6-4-54)

From adjusted GPs
7-26-56

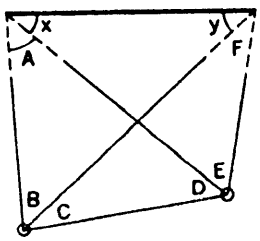
U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

SPECIAL ANGLE COMPUTATION



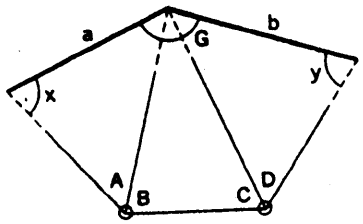
Case 1

$$\frac{\sin x}{\sin y} = \frac{b \sin A}{a \sin B} = \tan \alpha$$



Case 2

$$\frac{\sin x}{\sin y} = \frac{\sin A \sin C \sin E}{\sin B \sin D \sin F} = \tan \alpha$$



Case 3

$$\frac{\sin x}{\sin y} = \frac{b \sin A \sin C}{a \sin B \sin D} = \tan \alpha$$

A 80°45'
B 17 12
G 221 54 48.2
319 51 48.2
159 55 54.1

$\frac{1}{2}(x+y) =$

Case 1: $180° - \frac{1}{2}(A+B+G) =$ 20° 04' 05".9

Case 2: $\frac{1}{2}(C+D) =$

Case 3: $270° - \frac{1}{2}(A+B+C+D+G) =$

Leave blanks below here for values not involved in the CASE used.

log b = 3.607 466	log a = 3.542 368
log sin A = 9.994 316	log sin B = 9.470 863
log sin C =	log sin D =
log sin E =	log sin F =
*①Sum = 3.601 782	*②Sum = 3.013 231
-② – 3.013 231	-① –
log tan α = 0.588 551	log tan α =
α = 75° 32' 19".0	α =
α - 45° = 30 32 19.0	α - 45° =

$\log \tan \frac{1}{2}(x+y) =$ 9.562 674	$\log \tan \frac{1}{2}(x+y) =$
log tan (α - 45°) = 9.770 818	log tan (α - 45°) =
Sum = $\log \tan \frac{1}{2}(x-y) =$ 9.333 492	Sum = $\log \tan \frac{1}{2}(y-x) =$
$\frac{1}{2}(x-y) =$ 12° 09' 44".9	$\frac{1}{2}(y-x) =$
$\frac{1}{2}(x+y) =$ 20 04 05.9	$\frac{1}{2}(y+x)$
x 32 13 50.8	y
y 07 54 21.0	x

α is an auxiliary angle needed only for the computation: it is always between 45° and 90°

comp WMM

From adjusted G.A
7-26-56

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 25
Ed. Jan., 1929

11—9121

COMPUTATION OF TRIANGLES

State: Alaska

NO.	STATION	OBSERVED ANGLE	CORR'N	SPHER'L ANGLE	SPHER'L EXCESS	PLANE ANGLE AND DISTANCE	LOGARITHM
	2-3						3. 542 368
	1 Ned	80 45 —					0. 005 684
	2 Mex	32 13 50.8					9. 726 997
	3 Black	(67 01 09.2)					9 964 088
	1-3					1883.86	3. 275 049
	1-2					3251.92	3. 512 140
		180 00 00.0					
	2-3						3. 847 621
	1 Ned	97 57 —					0. 004 194
	2 Mex	54 49 42.9					9. 912 452
	3 Dewey	27 13 17.1					9. 660 325
	1-3					5811.22	3. 764 267
	1-2					3251.92	3. 512 140
		180 00 00.0					
	2-3						3.607 466
	1 Ned	17 12					0. 529 137
	2 Black	(154 53 39.0)					9. 627 664
	3 Dewey	07 54 21.0					9. 138 446
	1-3					5811.22	3. 764 267
	1-2					3251.92	3. 275 049
		180 00 00.0					
	2-3						
	1						
	2						
	3						
	1-3						
	1-2						

Do not write in this margin

comp Wmm

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 27
Ed. April 1945

POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

			°	′	″
α	2 MEX to 3 BLACK 2		108	46	25.2
2d ∠	&		+ 32	13	50.8
α	2 to 1 Ned		141	00	16.0
Δα			−	01	33.5
			180	00	00.0
α′	1 to 2		320	58	42.5
			80	45	

			°	′	″
α	3 BLACK 2 to 2 MEX		288	43	54.4
3d ∠	&		−(67	01	09.2)
α	3 to 1 Ned		221	42	45.2
Δα			+		57.3
			180	00	00.0
α′	1 to 3		41	43	42.5

First Angle of Triangle

	°	′	″			°	′	″
φ	54	45	14.615	2 MEX	λ	132	22	27.203
Δφ	+	01	21.718		Δλ	+	01	54.476
φ′		46	36.333	1 Ned	λ′	132	24	21.679

	°	′	″			°	′	″
φ	54	45	50.861	3 BLACK 2	λ	132	25	31.805
Δφ	+		45.472		Δλ	−	01	10.125
φ′	54	46	36.333	1 Ned	λ′	132	24	21.680

	Logarithms
s	3.512 140
Cos α	9.890 530
B	8.509 729
h	1.912 399
s^2	7024 28
$\sin^2\alpha$	9 597 66
C	1.553 82
	8.17576
h^2	3.8248
D	2.367 4
	6.192 2

Values in seconds		
n		
1st term	81.″733	
2d term	+ .015	
3d term	+ —	
−Δφ	81.718	

½(φ+φ′)	54 ° 45 ′ 45.7 ″	
	Logarithms	Values in seconds
s	3.512 140	
Sin α	9.798 830	P
A′	8.508 744	
Sec φ′	0.239 002	
Δλ	2.058 716	114.4764
$\sin\frac{1}{2}(\phi+\phi')$	9.912 099	
−Δα	1.970 815	93.501

	Logarithms
s	3.275 049
Cos α	9.873025
B	8.509 728
h	1.657 802
s^2	6.550 10
$\sin^2\alpha$	9.646 16
C	1.553 98
	7.750 24
h^2	3.3156
D	2.3674
	5.6830

Values in seconds		
n		
1st term	45.″478	
2d term	+ .006	
3d term	+ —	
−Δφ	45.472	

½(φ+φ′)	54 ° 46 ′ 13.59 ″	
	Logarithms	Values in seconds
s′	3.275 049	
Sin α	9.823 079	n
A′	8.508 744	
Sec φ′	0.239 002	
Δλ	1.845 874	70.″1252
$\sin\frac{1}{2}(\phi+\phi')$	9.912 141	
−Δα	1.758 015	57.282

16—44238-1 U. S. GOVERNMENT PRINTING OFFICE

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 27
Ed. April 1945

POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

				°	′	″						°	′	″
α	2 MEX	to 3	DEWEY 2	86	10	33.1	α	3 DEWEY 2	to 2	MEX		266	05	12.3
2d ∠		&		+54	49	42.9	3d ∠		&			-27	13	17.1
α	2 MEX	to 1	Ned	141	00	16.0	α	3 DEWEY 2	to 1	Ned		238	51	55.2
Δα				−	01	33.5	Δα					+	03	47.3
				180	00	00.0						180	00	00.0
α′	1	to 2		320	58	42.5	α′	1	to 3			58	55	42.5
				97	57									

First Angle of Triangle

	°	′	″			°	′	″			°	′	″			°	′	″
φ	54	45	14.615	2	MEX	λ	132	22	27.203	φ	54	44	59.253	3	DEWEY 2	λ	132	28	59.948
Δφ	+	01	21.718			Δλ	+	01	54.476	Δφ	+	01	37.080			Δλ	−	04	38.268
φ′	54	46	36.333	1	Ned	λ′	132	24	21.679	φ′	54	46	36.333	1	Ned	λ′	132	24	21.680

	Logarithms	Values in seconds
s	3.512 140	
Cos α	9.890 530	n
B	8.509 729	
h	1.912 399	1st term 81.733
s²	7.024 28	
Sin²α	9.597 66	
C	1.553 82	
	8.175 76	2d term + .015
h²	3.824 8	
D	2.367 4	
	6.192 2	3d term + —
		−Δφ 81.718

	°	′	″	Logarithms	Values in seconds
½(φ+φ′)	54	45	45.47		
s				3.512 140	
Sin α				9.798 830	p
A′				8.508 744	
Sec φ′				0.239 002	
Δλ				2.058 716	114.4764
Sin½(φ+φ′)				9.912 099	
−Δα				1.970 815	93.501

	Logarithms	Values in seconds
s	3.764 267	
Cos α	9.713 534	n
B	8.509 729	
h	1.987 530	1st term 97.169
s²	7.528 53	
Sin²α	9.864 90	
C	1.553 76	
	8.947 19	2d term + .089
h²	3.975 1	
D	2.367 4	
	6.342 5	3d term +
		−Δφ 97.080

	°	′	″	Logarithms	Values in seconds
½(φ+φ′)	54	45	47.79		
s				3.764 267	
Sin α				9.932 451	n
A′				8.508 744	
Sec φ′				0.239 002	
Δλ				2.444 464	278.2685
Sin½(φ+φ′)				9.912 103	
−Δα				2.356 567	227.28

16—44238-1 U. S. GOVERNMENT PRINTING OFFICE

comp WMM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 27
Ed. April 1945

POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

		°	′	″
α	2 BLACK 2 to 3 DEWEY 2	66	49	06.2
2d ∠	&	(+154	53	39.0)
α	2 DEWEY 2 to 1 Ned	221	42	45.2
Δα		+		57.3
		180	00	00.0
α′	1 to 2	41	43	42.5
		17	12	—

		°	′	″
α	3 DEWEY 2 to 2 BLACK 2	246	46	16.2
3d ∠	&	− 07	54	21.0
α	3 DEWEY 2 to 1 Ned	238	51	55.2
Δα		+	03	47.3
		180	00	00.0
α′	1 to 3	58	55	42.5

First Angle of Triangle

	°	′	″			°	′	″
φ	54	45	50.861	2 BLACK 2	λ	132	25	31.805
Δφ		+	45472		Δλ	−	01	10.125
φ′	54	46	36.333	1 Ned	λ′	132	24	21.680

	Logarithms	Values in seconds
s	3.275 049	
Cos α	9.873 025	n
B	8.509 728	
h	1.657 802	1st term 45.478
s²	6.550 10	
Sin²α	9.646 16	
C	1.553 98	
	7.75024	2d term + .006
h²	3.3156	
D	2.367 4	
	5.6830	3d term +
		−Δφ 45.472

½(φ+φ′)	54 46 13.59		
		Logarithms	Values in seconds
s	3.275 049		
Sin α	9.823 079	n	
A′	8.508 744		
Sec φ′	0.239 002		
Δλ	1.845 874	70.1252	
Sin ½(φ+φ′)	9.912 141		
−Δα	1.758 015	57.282	

	Logarithms	Values in seconds
s	3.764 267	
Cos α	9.713 534	n
B	8.509 729	
h	1.987 530	1st term 97.169
s²	7.528 53	
Sin²α	9.878 90	
C	1.553 76	
	8.961 19	2d term + .089
h²	3.9751	
D	2.367 4	
	6.3425	3d term +
		−Δφ 97.080

½(φ+φ′)	54 45 47.79		
		Logarithms	Values in seconds
s	3.764 267		
Sin α	9.932 451	n	
A′	8.508 744		
Sec φ′	0.239 002		
Δλ	2.444 464	278.2685	
Sin ½(φ+φ′)	9.912 103		
−Δα	2.356 567	227.283	

16—44238-1 U. S. GOVERNMENT PRINTING OFFICE

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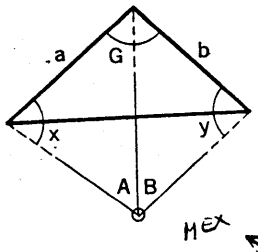
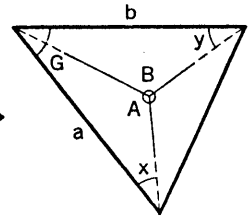
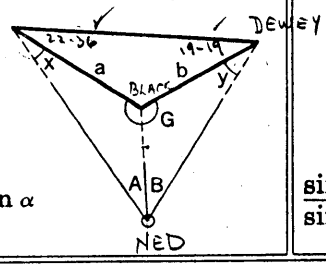
Form 655a
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

SPECIAL ANGLE COMPUTATION

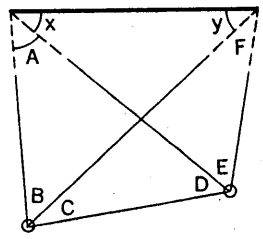






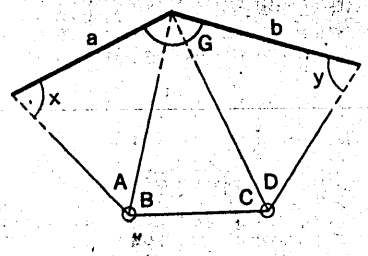
Case 1

$$\frac{\sin x}{\sin y} = \frac{b \sin A}{a \sin B} = \tan \alpha$$



Case 2

$$\frac{\sin x}{\sin y} = \frac{\sin A \sin C \sin E}{\sin B \sin D \sin F} = \tan \alpha$$



Case 3

$$\frac{\sin x}{\sin y} = \frac{b \sin A \sin C}{a \sin B \sin D} = \tan \alpha$$

A = 80-45
17-12
G = 221-55

$$\frac{1}{2}(x+y) = \begin{cases} \text{Case 1: } 180° - \frac{1}{2}(A+B+G) = & 20° \; 04' \; '' \\ \text{Case 2: } \frac{1}{2}(C+D) = & \\ \text{Case 3: } 270° - \frac{1}{2}(A+B+C+D+G) = & \end{cases}$$

Leave blanks below here for values not involved in the CASE used.

log b = 3607 449	log a = 3.542 325
log sin A = 9.994 316	log sin B = 9.470 863
log sin C =	log sin D =
log sin E =	log sin F =
*① Sum = 3.601 765	*② Sum = 3.013 188
-② — 3.013 188	-① —
log tan α = 0.588 577	log tan α =
α = 75° 32' 22"	α =
α - 45° = 30 - 32 22	α - 45° =

log tan ½(x+y) = 9.562 636	log tan ½(x+y) =
log tan (α-45°) = 9.770 832	log tan (α-45°) =
Sum = log tan ½(x-y) = 9.333 468	Sum = log tan ½(y-x) =
½(x-y) = 12° 16' 55"	½(y-x) =
½(x+y) = 20 - 04	½(y+x)
x 32 - 14	y
y 07 - 54	x

Computation not checked

α is an auxiliary angle needed only for the computation: it is always between 45° and 90°

* Where ① is greater than ② use only the left side of the form below here, and vice-versa.

M 2235.12

FIRST

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 25
Ed. Jan., 1929

11—0121

COMPUTATION OF TRIANGLES

State: _____

NO.	STATION	OBSERVED ANGLE	CORR'N	SPHER'L ANGLE	SPHER'L EXCESS	PLANE ANGLE AND DISTANCE	LOGARITHM
	2-3						3.542 325
	1 NED	80-45					0.005 684
	2 MEX	32-14					9.727 027
	3 BLACK	(67-01)					9.964 080
	1-3	180 00				1884	3.275 036
	1-2					3252	3.512 089
	2-3						3.697 448
	1 NED	17-12					0.529 137
	2 BLACK	(154-54)					9.627 570
	3 DEWEY	07-54					9.138 128
	1-3	180 00				5810	3.769 156
	1-2					1882	3.279 714
	2-3						3.847 595
	1 NED	97-57					0.004 194
	2 MEX	54-50					9.912 477
	3 DEWEY	27-13					9.460 576
	1-3	180-00				5811	3.764 266
	1-2					3251	3.517 945
	2-3						
	1						
	2						
	3						
	1-3						
	1-2						

Do not write in this margin

Computation not checked

30.922
36.318
47376
30922
92766
185532
92766
1123025196

1072 8

23.682
30.922
47364
47364
21318
71046
732948604

38.35

536.4
143.0
5.4
.9
6857

357.6
17.9
10.7
.9
3871

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 27
Ed. April 1945

POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

				°	′	″								°	′	″	
α	2 MEX	to 3	BLACK	108	46	05.748		α	3 Black	to 2	MEX	288	43	35.000	
2d ∠	&			+32	14	10.000		3d ∠	&			-67	00	50.000	
α	2 MEX	to 1	NED	141	00	15.748		α	3 Black	to 1	Ned	221	42	45.000	
Δα				—	01	33.484		Δα							
				180	00	00.0						180	00	00.0	
α′	1 NED	to 2	MEX	320	58	42.264		α′	1 Ned	to 3	Black				

First Angle of Triangle

	°	′	″			°	′	″			°	′	″			°	′	″
φ	54	45	14.615	2 MEX	λ	132	22	27.203	φ	54	45	50.847	3 Black	λ	132	25	31.777
Δφ	+	1	21.700		Δλ	+	01	54.451	Δφ	+	0	45.477		Δλ	—	1	10.722
φ′	54	46	36.315	1 NED	λ′	132	24	21.654	φ′	54	46	36.318	1 Ned	λ′	132	24	21.055

	Logarithms	Values in seconds
s	3.512 0445	N 732.4 1122.9
Cos α	9.890 5294	
B	8.509 7285	
h	1.912 3024	1st term + 81.715
s²	7.024 089	
Sin² α	9.597 662	
C	1.553 83	
	8.175581	2d term + 0.015
h²	3.8246	
D	2.3674	
	6.1920	3d term + 0.000
		−Δφ N 81.700

	°	′	″
½(φ+φ′)	54	45	53.465

	Logarithms	Values in seconds
s	3.512 0445	
Sin α	9.798 8309	P
A′	8.508 7437	
Sec φ′	0.239 0020	P
Δλ	2.058 6211	114.451
Sin ½(φ+φ′)	9.912 1140	
−Δα	1.970 7351	93.484

	Logarithms	Values in seconds
s	3.275 0344	N (732.3) 1123.0
Cos α	9.873 0258	
B	8.509 7278	
h	1.657 7880	1st term 45.4766
s²	6.550 07	
Sin² α	9.646 16	
C	1.553 99	
	7.75022	2d term +0.0056
h²	3.3158	
D	2.3674	
	5.6	3d term + XXXX
		−Δφ − 45.477

	°	′	″
½(φ+φ′)	54	46	13.585

	Logarithms	Values in seconds
s	3.275 0344	
Sin α	9.823 0784	N
A′	8.508 7436	
Sec φ′	0.239 0020	P
Δλ	1.845 8584	70.122
Sin ½(φ+φ′)		
−Δα		

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B1 Δ

Mex Δ

$\frac{37}{102}$

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 27
Ed. April 1945

POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

				°	′	″
α	2	to 3				
2d ∠		&		+		40.159
α	2 Black	to 1	Mex	288	43	~~35.00~~
Δα					+ 2	30.748
				180	00	00.0
α′	1 Mex	to 2	Black	108	46	~~05.748~~

				°	′	″
α	3	to 2				
3d ∠		&		−		
α	3	to 1				
Δα						
				180	00	00.0
α′	1	to 3				

FIRST ANGLE OF TRIANGLE 101.906

	°	′	″			°	′	″
φ	54	45	50.847	2 Black	λ	132	25	31.777
Δφ	− 0	0	36.232		Δλ	− 0	3	04.574
φ′	54	45	14.615	1 Mex	λ′	132	22	27.203

	°	′	″			°	′	″
φ				3	λ			
Δφ					Δλ			
φ′				1	λ′			

	Logarithms		Values in seconds
s	3.048 ~~8688~~ 96 P		
Cos α			
B	8.509 7278		
h	1.558 ~~5866~~ 6246	1st term	+ 36.193″
s²	7.037 34		
Sin² α			
C	1.553 99		
	8.591 33	2d term	+ 0.039
h²	3.1172		
D	2.3674		
	5.4846	3d term	+ 0.0000
	1.559 0923	−Δφ	+ 36.232

	°	′	″
½(φ+φ′)	54	45	32.731

	Logarithms	Values in seconds
s	3.518 6681	N
Sin α		
A′	8.508 7460	
Sec φ′	0.238 7584	P
Δλ	2.266 1705	184.574″
Sin ½(φ+φ′)	9.912 0802	
−Δα	2.178 2508	150.748

s sin α = 3.518 6681 P
s cos α = 3.048 ~~8688~~ 96 n
Tan α = − 0.469 ~~7793~~ n
α = ~~288 43 35.0~~
40.159

	Logarithms		Values in seconds
s			
Cos α			
B			
h		1st term	″
s²			
Sin² α			
C			
		2d term	+
h²			
D			
		3d term	+
		−Δφ	

	°	′	″
½(φ+φ′)			

	Logarithms	Values in seconds
s		
Sin α		
A′		
Sec φ′		
Δλ		″
Sin ½(φ+φ′)		
−Δα		

3.048 ~~8688~~ 96
Cos α 9.506 6937
3.542 2892 931

3.518 6681
Sin α 9.976 3756
3.542 ~~2925~~ 930

DEPARTMENT OF COMMERCE
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Form 27
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POSITION COMPUTATION, THIRD-ORDER TRIANGULATION

			°	′	″				°	′	″
α	2	to 3	168	46	14.3	α	3	to 2	288	43	43.5
2d ∠		&	+ 32	14		3d ∠		&	− 67	01	
α	2	to 1	141	00	14.3	α	3	to 1	221	42	43.5
Δα						Δα					
			180	00	00.0				180	00	00.0
α′	1	to 2				α′	1	to 3			

FIRST ANGLE OF TRIANGLE

	°	′	″			°	′	″			°	′	″			°	′	″
φ	54	45	14.610	2 NEX	λ	132	22	27.191	φ	54	45	50.847	3 BLACK	λ	132	25	31.777
Δφ	+	1	21.788		Δλ	+	1	54.464	Δφ	+		45.471		Δλ	−	1	10.122
φ′	54	46	36.318	1 NED	λ′	132	24	21.655	φ′	54	46	36.318	1 NED	λ′	132	24	21.655

	Logarithms	Values in seconds
s	3.512 089	
Cos α	9.890 5	− 732.3
B	8.509 729	+ 1123.0
h	1.912 32	1st term 81.723
s²	7.024 2	
Sin²α	9.597 7	
C	1.553 8	
	8.175 7	2d term +0.015
h²		
D		
	—	3d term + —
		−Δφ 81.708

	°	′	″	Logarithms	Values in seconds
½(φ+φ′)					
s				3.512 089	
Sin α				9.798 8	+
A′				8.508 743	− 685.7
Sec φ′				0.238 001	+ 387.1
Δλ				2.058 668	114.464
Sin ½(φ+φ′)					
−Δα					

	Logarithms	Values in seconds
s	3.275 036	
Cos α	9.872	−
B	8.509 728	
h	1.657 7	1st term 45.477
s²	6.550 1	
Sin²α	9.646 2	
C	1.554 0	
	8.750 3	2d term + 0.006
h²		
D		
		3d term +
		−Δφ 45.471

	°	′	″	Logarithms	Values in seconds
½(φ+φ′)					
s				3.275 036	
Sin α				9.823	−
A′				8.508 743	
Sec φ′				0.238 001	
Δλ				1.844 854	70.122
Sin ½(φ+φ′)					
−Δα					

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Scaled off Photostat — +1104

+364

Computation Not checked

Lat

-161
+178 m-
939

752
+176
928

-171
+362
533

-172
-364
536

927.6

928

11

536.4

176
928
1104

GEOGRAPHIC NAMES

Survey No.
H-8065 a & b

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	
Southeast Alaska										1
Prince of Wales Island										2
Cordova Bay										3
Minnie Bay			(tide station)							4
Minnie Cutoff										5
Point Marsh										6
Mexico Point										7
Thompson Passage		(see latest print of chart 8145 for placement after inking)								8
Eureka Channel									BGN	9
Far Point										10
Barrier Islands										11
Rocky Pass										12
Middle Island										13
Kelp Pass										14
Egg Passage										15
Black Rock										16
Dewey Rocks										17
Round Islands										18
			Names approved 11-9056 L. Herk							19
										20
Tah Bay		(tide station off sheet)								21
										22
										23
										24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8065 a & b.

Records accompanying survey:

Boat sheets ..1..; sounding vols. ..15..; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 8-Envelopes

special reports, etc. .1-Descriptive report, .1-Smooth sheet,....

and 1-Blueline print with partial replot. Attached to the.....
Boat Sheet, 2 Overlays of 1954 work.

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

Number of positions on sheet		.....
Number of positions checked		.....
Number of positions revised		.....
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	.....

Verification by.....Total time ..... Date .....

Reviewed by..... Time ..... Date .....

M-2232-1

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-8065 a & b

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

RAC

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~ 11/16/56

Division of Charts: R. H. Carstens

Plane of reference approved in
15 volumes of sounding records for

HYDROGRAPHIC SHEET 8065a & b

Locality Cordova Bay, Alaska

Chief of Party: F. R. Gossett in 1953 - 1954
Plane of reference is mean lower low water, reading
3.1 ft. on tide staff at Tah Bay (1953)
3.2 ft. ~~below B.M.~~ on tide staff at Tah Bay (1954)

12.6 ft. below B.M. 2 (1909)

Height of mean high water above plane of reference is 11.7 feet.

Condition of records satisfactory except as noted below:

William Shafer

Chief, ~~Division of~~ Tides ~~and Currents~~ Branch

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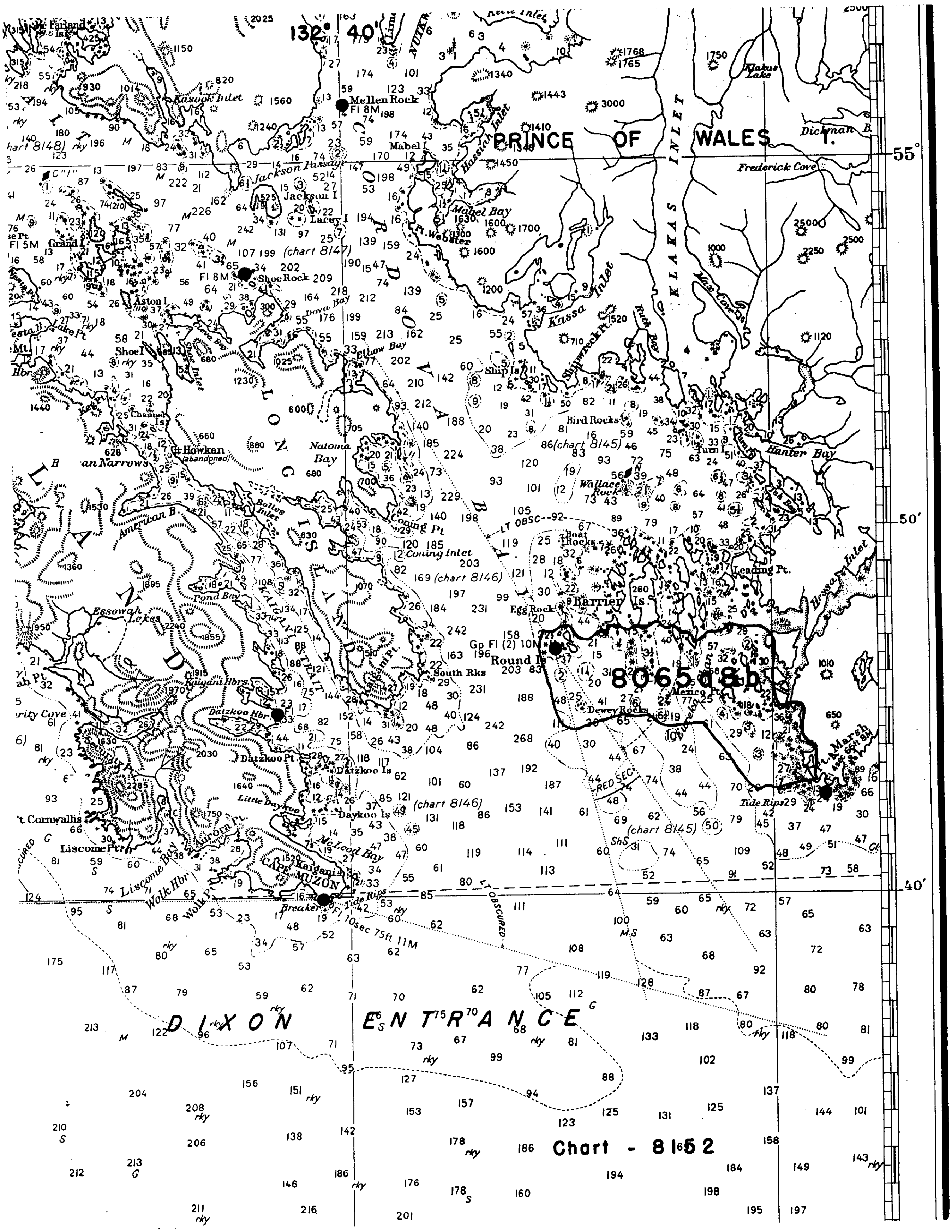

132° 40'
55°
50'
40'
PRINCE OF WALES I.
KLAKAS INLET
LONG ISLAND
CORDOVA BAY
DIXON ENTRANCE
Mellen Rock
Fl 8M
Mabel I.
Jackson Passage
Jackson I
Lacey I
Kasook Inlet
Hassiah Inlet
Mabel Bay
Pt. Webster
Kassa Inlet
Ruth Bay
Shipwreck Pt.
Ship Is
Bird Rocks
Frederick Cove
Hunter Bay
Dickman B.
Klakas Lake
(chart 8148)
(chart 8147)
(chart 8146)
(chart 8145)
Shoe Rock
Fl 8M
Aston I
Shoe I
Dova Bay
Elbow Bay
Natoma Bay
Howkan (abandoned)
American B.
Rolles Inlet
Coning Pt
Coning Inlet
Wallace Rock
Boat Rocks
Leading Pt.
Barrier Is
Egg Rock
Round I.
Gp Fl (2) 10M
South Rks
Dewey Rocks
Mexico Pt.
Brown Inlet
8065d8b
Tide Rips
Essowah Lakes
Pond Bay
Kaigani Hbrs
Kaigani Strait
Datzkoo Hbr
Datzkoo Pt.
Datzkoo Is
Little Daykoo
Daykoo Is
McLeod Bay
Cape Muzon
Kaigani
Breaker
Fl 10sec 75ft 11M
Tide Rips
Liscome Pt
Liscome Bay
Wolk Hbr
Wolk Pt
Aurora Pt
Pt Cornwallis
Trinity Cove
Channel
Grand I
LT OBSC
RED SEC
OBSCURED
Chart - 8152

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8065 a & b.

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6-5-57	8145	O.R. Wittmann	Before ~~After~~ Verification and Review
8-15-5			
8-15-58	8102	R.E. Elkins	Examined – partly applied thru the previously Before ~~After~~ Verification and Review Partial application to chart 8145.
8-17-58	8152	R.E. Elkins	Before ~~After~~ Verification and Review Partly app. app thru chs 8102 dtg 11.
11 March 60	8001	Earl M Bragonje	Before ~~After~~ Verification and Review Partly appd thru 8152 dtwg 12
2/4/71	8145	Eric Frey	Part Before ~~After~~ Verification and Review Appd critical corrections only
5/22/75	8145	M. D. Kanis	PART APP. Before ~~After~~ Verification and Review Re-examined only for items in conjunction with Reviewed T-11304
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			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.