

8115

Diag. Cht. Nos. 6300-2 and 6330-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

PA-1154

Field No. PA-1354 Office No. H-3115

LOCALITY

State Washington

General locality San Juan Islands

Locality San Juan Channel

194 54

CHIEF OF PARTY

J. C. Partington

LIBRARY & ARCHIVES

DATE March 15, 1957

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-8115

Field No. PA-1154 & PA-1354

State Washington

General locality San Juan Islands

Locality San Juan Channel

Scale 1:10,000 Date of survey 5 May to 29 June 1954

~~Instructions dated~~ Supplemental Instructions dated 11 March 1953, 8 May 1953,
20 January 1954 and 16 February 1954

Vessel PATTON and PATTON's Launch No. 87

Chief of party J. C. Partington

Surveyed by J. C. Partington, F. X. Popper and R. F. Lanier

Soundings taken by ~~fathometer, graphic recorder, hand lead, wire~~ 808A Depth Recorders Nos. 51,
and 74. Hand lead and wire (bottom samples)

Fathograms scaled by Robert Outzen

Fathograms checked by F. X. Popper, R. F. Lanier, D. Doe, & R. Outzen

Protracted by C. A. J. Pauw

Soundings penciled by C. A. J. Pauw

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and are true depths

REMARKS: _____

HB

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY NO. H-8115 (PA-1154)

SAN JUAN CHANNEL, WASHINGTON

SCALE 1:10,000 - DATE 1954

U. S. C. & G. S. S. PATTON, J. C. PARTINGTON, Comdg.

#

A. PROJECT:

This survey was accomplished under Supplemental Instructions for Project CS-2411, issued by the Director and dated 11 March 1953, 8 May 1953, 20 January 1954, and 16 February 1954.

B. SURVEY LIMITS AND DATES:

This survey includes San Juan Channel and adjoining areas of water from Latitude $48^{\circ} 40'$ on the north to Latitude $48^{\circ} 33' 30''$ on the south and from Longitude $123^{\circ} 06'$ on the west to Pole Pass on the east. Deer Harbor is included in this survey. Long. $122^{\circ} 59'$ and

Junction was made on the south with H-8087⁽¹⁹⁵³⁾ (LJ-05253), a 1:5,000 survey of Friday Harbor and vicinity, and on the west with H-8116⁽¹⁹⁵⁴⁾, a 1:10,000 scale survey of Spieden Channel which was also made by the PATTON in 1954. Field work commenced on 5 May 1954 and was completed on 29 June 1954.

C. VESSEL AND EQUIPMENT:

All hydrography was done in Launch No. 87, a 30-ft. diesel powered motorsailer, operating from the PATTON. Soundings were taken with an 808A depth recorder (No. 51), supplemented by hand lead soundings on shoals and in kelp. Bottom samples were taken by wire with a hand sounding machine mounted on the launch, and in deeper areas by the PATTON using an electric wire sounding machine.

D. TIDE AND CURRENT STATIONS:

The records from the standard tide gage located at the oceanographic laboratory near Friday Harbor were used for the reduction of all soundings.

One 100-hour current station was observed on this sheet. It was located in Wasp Passage. A current pole and a Price current meter were used.

E. SMOOTH SHEET:

The smooth sheet will be constructed and plotted by personnel of the Seattle Processing Office.

F. CONTROL STATIONS:

A second order scheme of triangulation was established in this area by J. J. Gilbert in 1894 and additional stations were established by L. C. Wilder in 1940. Three triangulation stations were established this year; they were: GEORGE, PARKS BAY, and SHIRT TAIL REEF LIGHT.

The records and computations for this year's triangulation have been forwarded to the Washington Office.

Additional signals necessary for hydrography were located by plane table on topographic sheet PA-54-C* which includes an area not sufficiently covered by photographs; and by photogrammetric methods on Manuscripts T-5589 and T-5591. (*Graphic Control sheet destroyed)

G. SHORELINE AND TOPOGRAPHY:

The shoreline and topography of the area has already been compiled from air photographs of the area which were field inspected by personnel of the Portland Office. In areas not covered by air photographs, previous topographic surveys will be used. (see Processing Office notes)

The shoreline is abrupt and rocky and in most places it was not possible to establish the low water line by hydrography.

H. SOUNDINGS:

Soundings were taken with an 808A-type depth recorder (No. 51) operated on the fathom scale. Hand lead soundings were taken in critical areas, on shoals, and in kelp. Wire soundings were taken for obtaining bottom samples.

Velocity corrections to fathometer soundings were computed from serial temperatures and salinity observations taken throughout the area.

Phase or scale comparisons of the fathometer were taken in as good weather and on as flat a bottom as could be obtained.

I. CONTROL OF HYDROGRAPHY:

The hydrography is controlled by three-point sextant fixes on signals ashore. No unusual or substandard methods were used for this purpose.

J. ADEQUACY OF SURVEY:

This survey is adequate and complete and should supersede previous surveys of this area.

K. CROSSLINES:

The crosslines on this sheet constitute about 8% of the total miles of soundings for normal spacing of lines. Crossings are satisfactory.

L. COMPARISON WITH PRIOR SURVEYS:

Previous surveys of this area were made in 1894, at a scale of 1:10,000. The area covered by this sheet includes parts of H-2114, H-2213, and H-2214. Sounding lines on previous surveys were more widely spaced and developments were not as complete. While the new survey is more detailed and complete, the old survey agrees remarkably well with the modern survey especially when one considers how few soundings were actually taken. Several additional shoals were found and lesser depths were determined on other shoals, but not in depths that were a danger to surface navigation. There is one exception to the last statement; a 1.4⁴ fathom shoal was determined in an area where it was considered to be a danger to navigation and it was immediately reported to the Coast Guard; a copy of the letter is included in this report. On some of the shoals of interest to navigation, the old survey ~~had~~ up to 1/2 fathom less than this survey determined.

REVIEW
PAR. 5B(5)

Both the old survey and chart 6379 show a 9 fathom sounding in Spring Passage abeam of the midpoint of Jones Island. A thorough development of this area was made and the shallowest sounding that could be obtained was 11 fathoms. As the bottom samples in that vicinity are coarse sand and green mud, it would seem very unlikely that there would be a pinnacle there.

REVIEW
PAR. 5B(6)

The old survey and the chart show a reef on the east side of Spring Passage at Latitude 48° 37.1', A considerable search was made in this area and no trace of this reef could be found and it is herewith recommended that this reef be deleted.

M. COMPARISON WITH CHART 6379:

This subject is covered in "L". Some additional shoals were found and considerably shoaler depths were found on a number of the deeper shoals. These are enumerated in "N".

N. DANGERS AND SHOALS:

DANGERS:

1. 1.4⁴ fathoms on the west side of McConnell Island in Latitude 48° 35'.78" N., and Longitude 123° 01'.60" W. This was reported to the Coast Guard by letter dated 1 July 1954; Position 5 ka. (CL 592-1154)
2. 0.4⁵ fathoms on the north side of Crane Island in Latitude 48° 36'.19" N and Longitude 122° 59'.84" W. Position 36-37v
3. 1.9^{2.0} fathoms halfway between McConnell and Crane Island in Latitude 48° 35'.80" N and Longitude 123° 00'.72" W., between Positions 75 and 76 ab. Old survey and chart show this as 2-3/4 fathoms. See Processing Office Notes.

SHOALS:

1. 4.7³ fathom shoal WSW of Neck Point in Latitude 48° 35'.05" N and Longitude 123° 01'.10" W, Position 44k.
.08

COAST PILOT: *Referred to C.P. Section 12/27/57 JFE*

Referring to page 427, Line 45 of the Coast Pilot - the cannery mentioned was not in operation in 1954 and had not been for several years; the small wharf mentioned on lines 45 and 46 is in ruins.

There are strong variable currents throughout the area covered by this survey; currents were observed in Wasp Passage and a velocity of from one to two knots obtained and the direction of the current is roughly parallel to the axis of the channel; these observations were not taken in the exact middle of channel nor in the narrowest part. Very strong and variable currents are present off the east end of Spieden Island.

P. AIDS TO NAVIGATION:

All fixed aids to navigation, with one exception, have been located by triangulation before this survey was made. Shirt Tail Reef Light was located by triangulation during the course of this season's work. Its position was reported on Form 567.

A submarine cable extended from Signal "Cable" on Shaw Island to Signal "Jap" (H-8087) on San Juan Island.

The ferry route through these islands goes through Wasp Passage to Friday Harbor and then through San Juan Channel and Spieden Channel to Sydney on Vancouver Island.

Q. LANDMARKS FOR CHARTS:

There are no landmarks for charts in this area which have not already been charted.

R. GEOGRAPHIC NAMES:

See 1954 Geographic Names Report.

S. SILTED AREAS:

No information available on this subject.

U. MISCELLANEOUS INFORMATION:

All the work done on PA-1354 is in one volume and is confined to Parks Bay. All comments in this report apply to Parks Bay. A separate statistics sheet for that survey will be included in this report and it is suggested that Parks Bay be plotted on an insert on this sheet.

Z. TABULATION OF APPLICABLE DATA:

The following listed Special Reports are pertinent to this survey and report:

1. Descriptive Report to Accompany Topographic Sheets PA-54-A, PA-54-B, PA-54-C, and PA-54-D
2. Temperature and salinity observations

Z. TABULATION OF APPLICABLE DATA: (Contin.)

3. Geographic Names Report
4. Triangulation Report
5. Copy of Letter to the Coast Guard Commandant reporting a danger to navigation.

The following applicable data are attached to this report:

1. Tables of Statistics for PA-1154 and PA-1354
2. Tide Note
3. Abstract of Bar Checks and Computation of Index Error and Phase Comparison Note
4. Abstracts of Velocity Corrections

Respectfully submitted,

Francis X. Popper

F. X. Popper
LCDR USC&GS
Ship PATTON

Approved and Forwarded:

J. C. Partington

J. C. Partington
CDR USC&GS
Cmdg., Ship PATTON

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

1 July 1954

USC&GS PATTON, 705 Federal Office Bldg., Seattle 4, Wash. POST OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

JCP/dd

To: Commandant
13th Coast Guard District
618 Second Avenue
Seattle, Washington

Subject: Reporting of shoal

A shoal covered by 1.3 fathoms at MLLW discovered;
distant 1140 yards, bearing 334° T from Shirt Tail Reef Light;
Latitude 48° 35' 47" N., Longitude 123° 01' 36" W.

J. C. Partington
CDR USC&GS
Cmdg., Ship PATTON

c.c. Director, U.S.Coast & Geodetic Survey
Supervisor, NW Dist., C&GS

LIST OF HYDROGRAPHIC SIGNALS H-8115 (PA-1154)

USC&GSS PATTON - PROJECT CS-241

Hydrographic Name	Source	Hydrographic Name	Source
Abe	PA-54-C	Deer	Tri.Sta.DEER 1894,1940
Ace	"	Dick	Tri.Sta.DICK2 1940
Act	T-5591-N	Dif	PA-54-C
Add	"	Dim	T-5591-N
Ado	"	Dip	T-5591-N
Ago	"	Disney	Tri.Sta.DISNEY 1940
Aha	"	Dix	H-8115, Vol.12, P.68
Aim	T-5589-S	Doc	T-5591-N
Alp	PA-54-C	Dog	T-5591-N
Amy	"	Den	PA-54-C
Ann	H-8115, Vol.12, P.67	Dot	PA-54-C
Arm	T-5591-N	Dud	T-5589-S
Axe	T-5589-S	Duo	PA-54-C
Bag	T-5591-N	Ear	PA-54-C
Bah	PA-54-C	Eat	T-5591-N
Bamboo	Tri.Sta.BAMBOO 1894,1940	Ebb	"
Bat	T-5591-N	Eel	"
Bed	"	Egg	Tri.Sta.EGG2 1940
Bib	"	Ego	PA-54-C
Big	"	Elf	T-5591-N
Boa	T-5589-S	Elm	PA-54-C
Bob	T-5591-N	Emo	T-5589-S
Bon	T-5589-S	End	T-5591-N
Box	T-5591-N	Eon	PA-54-C
Bum	PA-54-C	Era	T-5591-N
Bus	H-8115, Vol.12, P.67	Erg	PA-54-C
But	PA-54-C	Est	T-5589-S
Cab	T-5591-N	Fair	Tri.Sta.FAIRVIEW 1894,1940
Cable	PA-54-C	Far	PA-54-C
Cam	"	Fat	"
Car	T-5591-N	Fed	T-5591-N
Cat	"	Few	"
Caution	Tri.Sta.CAUTION 1940	Fez	PA-54-C
Caw	T-5591-N	Fig	T-5591-N
Cliff	Tri.Sta.CLIFF ISLAND	Fin	T-5591-N
	LIGHT 1950	Fit	PA-54-C
Cod	PA-54-C	Fix	LJ #05253 H-8087
Con	T-5591-N	Flattop	Tri.Sta.FLATTOP 1894,1940
Coo	T-5589-S	Fly	T-5591-N
Cop	T-5591-N	Fog	T-5591-N
Cow	PA-54-C	Fro	T-5589-S
Crane	Tri.Sta.CRANE 1894,1940	Fry	"
Cry	T-5591-N	Gab	T-5591-N
Cue	PA-54-C	Gad	"
Cur	"	Gag	"
Cut	H-8115, Vol.12, P.67	Gal	PA-54-C
		Gam	PA-54-C
Daw	PA-54-C	Gas	T-5591-N
Day	T-5591-N	Gem	T-5591-N
Deb	"	Geo	PA-54-C

Hydrographic		Hydrographic	
Name	Source	Name	Source
George	Tri.Sta.GEORGE 1954	Leg	T-5591-N
Get	PA-54-C	Leo	"
Gig	T-5589-S	Let	"
Gin	"	Life	Tri.Sta.LIFE 1940
Gpb	PA-54-C	Lime	" " LIME 1940
Got	T-5589-S	Lip	T-5591-N
Goose	Tri.Sta.GOOSE ₂ 1940	Liz	"
Gull	Tri.Sta.GULL 1954	Log	PA-54-C
Gus	T-5591-N	Look	Tri.Sta.LOOK 1940
		Lop	PA-54-C
Hag	PA-54-C	Low	T-5591-N
Hat	T-5591-N	Lux	T-5589-S
Hem	"		
Her	PA-54-C	Mag	PA-54-C
Hex	T-5589-S	Mal	T-5591-N
Hid	T-5591-N	Man	PA-54-C
His	"	Mar	T-5591-N
Hod	"	Maw	"
Hoe	PA-54-C	Max	T-5591-N
Hop	T-5591-N	Met	PA-54-C
How	PA-54-C	Mid	T-5591-N
Hub	PA-54-C	Moo	T-5591-N
Hug	T-5589-S	Mop	"
		Mug	PA-54-C
Ice	PA-54-C		
Ida	T-5591-N	Nat	T-5591-N
Ilk	"	Nav	"
Ink	PA-54-C	Ned	"
Ion	T-5591-N	Neck	Tri.Sta.NECK 1894,1940
Irk	"	Neo	T-5591-N
Its	"	New	"
Ivy	PA-54-C	Nig	"
Jap	boat sheet	Nip	PA-54-C
Jar	PA-54-C	Nit	T-5589-S
Jaw	PA-54-C	Nix	T-5591-N
Jib	T-5591-N	Nod	"
Jim	"	Non	T-5589-S
Job	"	Now	PA-54-C
Joe	"	Nun	"
Jones	Tri.Sta.JONES 1894,1940		
Joy	PA-54-C	Oak	PA-54-C
Jut	T-5591-N	Obi	T-5591-N
Jug	"	Odd	"
		Off	"
Ked	PA-54-C	Ohm	"
Ken	T-5591-N L J-05253	Oil	"
Key	" H-8087	Old	"
Kid	PA-54-C	O'Neal	Tri.Sta.O'NEAL 1894,1940
Kim	T-5591-N	Ora	PA-54-C
Kik	"	Orb	T-5591-N
		Out	"
Lad	PA-54-C	Owl	"
Lam	T-5591-N		
Laurel	Tri.Sta.LAUREL 1940,1950	Pad	T-5591-N
Lax	T-5591-N	Pal	"
Lay	"	Par	"
Lead	Tri.Sta.LEAD 1894,1940	Parks	Tri.Sta.PARKS BAY 1954

Hydrographic Name	Source
Paw	T-5591-N
Peg	"
Pen	"
Penin	Tri.Sta.PENIN 1940
Pet	T-5591-N
Pie	"
Pin	PA-54-C
Pix	PA-54-C
Ply	T-5589-S
Pole	Tri./Sta.POLE PASS LIGHT 1950
Pro	T-5589-S
Quo	T-5591-N
Rag	PA-54-C
Ram	T-5591-N
Rat	"
Rev	"
Rig	PA-54-C
Rim	T-5591-N
Rio	"
Rip	"
Rot	"
Roy	PA-54-C
Rub	PA-54-C <i>OK</i> <i>LJ 05252 H-8007</i>
Rue	T-5589-S
Rum	"
Sad	PA-54-C
Sag	T-5591-N
Sam	"
Sax	"
Sal	T-5591-N
Set	T-5591-N
She	T-5589-S
Shirt	Tri.Sta.SHIRT TAIL REEF LIGHT 1954
Sic	T-5589-S
Sip	T-5591-N
Sir	PA-54-C
Sis	PA-54-C
Slant	Tri.Sta.SLANT 1894, 1940
Sly	T-5589-S
Socket	Tri.Sta.SOCKET 1894, 1940
Spike	" " SPIKE 1894, 1940
Splice	" " SPLICE 1894, 1940
Spring	" " SPRING 1940, 1950
Stack	" " DEER HARBOR CANNERY STACK 1950
Swift	Tri.Sta.SWIFT 1894, 1940
Table	Tri.Sta.TABLE 1894, 1940
Tan	PA-54-C
Tap	T-5591-N
Tax	T-5589-S
Ted	T-5591-N
Thy	"

Hydrographic Name	Source
Tom	T-5591-N
Toy	T-5589-S
Try	T-5591-N
Tub	T-5591-N
Twist	Tri.Sta. TWIST 1894, 1940
Use	PA-54-C
Uno	T-5591-N
Val	PA-54-C
Van	T-5591-N
Vet	"
Vex	"
Via	T-5589-S
View	Tri.Sta. VIEW 1894, 1940
Vim	T-5591-N
Wad	PA-54-C
Wag	T-5591-N
Wan	"
War	"
Was	T-5589-S
Wasp	Tri.Sta. WASP 1894
Wed	T-5591-N
Wedge	Tri.Sta. WEDGE 1894, 1940
Wee	T-5591-N
Weed	Tri.Sta.WEED 1894, 1940
Wen	PA-54-C
Who	"
Why	T-5591-N
Wig	H-8115, Vol.12, P. 67
Win	T-5589-S
Wit	"
Woo	PA-54-C
Yak	PA-54-C
Yam	T-5591-N
Yea	"
Yellow	Tri.Sta.YELLOW ₂ 1940
Yes	T-5591-N
Yet	T-5589-S

Zag	T-5591-N
Zig	"
Zip	"
Zoo	PA-54-C

OK

LIST OF HYDROGRAPHIC SIGNALS SHEET PA-1354

PARKS BAY, SAN JUAN CHANNEL, WASHINGTON

Hydrographic		Hydrographic	
Name	Source	Name	Source
Abe	PA-54-C	Hag	PA-54-C
Ace	"	Hat	"
Bag	PA-54-C	Ice	PA-54-C
Bah	"		
Bay	Tri.Sta.PARKS BAY 1954	Jap	PA-54-C
Cab	PA-54-C	Key	PA-54-C
Cam	"	Log	PA-54-C
Daw	PA-54-C	Mal	PA-54-C
Deb	"		
Ear	PA-54-C	New	PA-54-C
Erg	"	Ohm	PA-54-C
Far	PA-54-C	Peg	PA-54-C
Fat	"		
Gal	PA-54-C		
Gus	"		
George	Tri.Sta.GEORGE 1954		

STATISTICS FOR HYDROGRAPHIC SURVEY H-8115 (PA-1154)

USC&GSS PATTON - PROJECT CS-241

Date 1954	Day Letter	Vol. No.	Handlead & Wire Soundings	Number of Positions	Statute Miles of Soundings	Remarks
5 May	a	1	-	208	24.5	
6 "	b	1 & 2	-	335	43.9	
7 "	c	3	-	293	37.7	
8 "	d	4	-	320	37.2	
9 "	e	5	-	32	4.4	
10 "	f	5	-	214	21.9	
11 "	g	5 & 6	2	141	11.3	
12 "	h	6	2	194	17.3	
19 "	j	7	-	195	21.4	
20 "	k	7 & 8	4	213	15.8	
21 "	l	8	1	37	1.4	
22 "	m	8	1	91	8.3	
23 "	n	8 & 9	3	256	26.8	
24 "	p	9 & 10	-	160	16.9	
25 "	q	10 & 11	1	285	24.3	
26 "	r	11 & 12	1	318	27.4	
3 June	s	12	7	215	17.3	
4 "	t	13	-	266	39.2	
5 "	u	14	-	276	32.0	
6 "	v	15	3	252	21.2	
7 "	w	15 & 16	-	233	39.1	
8 "	x	16 & 17	-	351	44.0	
9 "	y	18	-	293	26.7	
10 "	z	18 & 19	-	216	18.2	
11 "	aa	19 & 20	-	223	22.0	
12 "	ab	20 & 21	7	247	18.2	
13 "	ca	21	-	240	18.8	
14 "	da	22	52	105	3.2	
22 "	ea	22 & 23	5	198	19.8	
24 "	fa	23	-	236	19.6	
25 "	ga	23 & 24	6	192	13.1	
26 "	ha	24 & 25	-	198	18.6	
28 "	ja	25	35	35	- -	
29 "	ka	25	16	31	- -	
29 "	a(red)	-	15	15	- -	Dory
				7112	709.2	

27.6 Square Statute Miles

STATISTICS FOR HYDROGRAPHIC SURVEY PA-1354

USC&GSS PATTON - PROJECT CS-241

Date 1954	Day Letter	Volume Number	Handlead & Wire Soundings	Number of Positions	Statute Miles of Soundings
21 May	a	1	-	8	- -
22 "	b	1	1	110	7.0
24 "	c	1	-	<u>95</u>	<u>2.5</u>
				213	9.5
				7112	
				7325	

0.22 Square Statute Miles

TIDAL NOTE

to accompany

Hydrographic Sheet Field No. PA-1154, Office No. H-8115

The standard automatic tide gage at Friday Harbor, Washington was used to reduce all soundings on this sheet.

FRIDAY HARBOR TIDE GAGE

Location:

Oceanographic Laboratories, University of Washington located at Friday Harbor, Washington.

Latitude: $48^{\circ} 32.8'$ N. Longitude: $123^{\circ} 00.4'$ W.

Plane of reference:

Mean lower low water. This value corresponds to 3.6 feet on the tide staff as furnished by the Washington office.

Hourly heights of the tide were furnished by the Washington office.

ABSTRACT OF BAR CHECKS SHEET H-8115 (PA-1154)

Date 1954	Day	2 fms	Date	Day	2 fms	Date	Day	2 fms
5 May	a	+0.3 0.3	24 May	p	+0.3	12 June	ab	0.3 0.3
6 May	b	+0.3 0.3	25 "	q	0.3 0.3	13 June	ca	0.3 0.3
7 May	c	0.4 0.3	26 "	r	0.4 0.2	14 June	da	0.4 0.3
8 May	d	0.3 0.3	3 June	s	0.3 0.4	22 June	ea	0.3 0.3
9 May	e	0.3	4 June	t	0.3 0.3	24 June	fa	0.3 0.3
10 May	f	0.3 0.3	5 June	u	0.2 0.4	25 June	ga	0.2 0.3
11 May	g	0.3	6 June	v	0.3 0.3	26 June	ha	0.3 0.3
12 May	h	0.2 0.3	7 June	w	0.3	28 June	ja	0.3
19 May	j	0.3 0.3	8 June	x	0.3 0.3	29 June	ka	0.5 16) 5.0
20 May	k	0.3 0.3	9 June	y	0.3 0.4	Mean of all columns 23 6.7 22 6.9 16 5.0 61)18.6 = <u>+0.3</u>		
21 May	l	0.2 0.3	10 June	z	0.4 0.3			
22 May	m	0.3	11 June	aa	0.3 0.3			
23 May	n	0.2 0.3			22) 6.9			
		23) 6.7						

FATHOMETER PHASE CORRECTIONS

fathoms Fath. No. 51
 A = 0.0
 B = +0.8
 C = +1.0
 D = +0.8

From Vol. 14, P. 63, PA-1254

Fath No. 74
 A = 0.0
 B = +0.7
 C = +0.6
 D = -1.9
 E = -1.4

ABSTRACT OF VELOCITY CORRECTIONS

U.S.C. & G.S.S. PATTON - J. C. PARTINGTON, COMDG.

LOCALITY: SAN JUAN CHANNEL

SAN JUAN ISLANDS, WASHINGTON

HYDROGRAPHIC SURVEY NO. PA-1154

FOR USE BETWEEN 5 MAY AND 16 MAY 1954

LAUNCH NO. 87

MEAN OF VELOCITY CORRECTIONS NOS. 1 AND 2

0.0 Fms		to	7.0 Fms
+0.1 "	from 7.1 Fms	" 19.5 "	
+0.2 "	" 19.6 "	" 32.0 "	
+0.3 "	" 32.1 "	" 44.0 "	
+0.4 "	" 44.1 "	" 68.0 "	
+0.6 "	" 68.1 "	" 92.0 "	
+0.8 "	" 92.1 "	" 116.0 "	
+1.0 "	" 116.1 "	" 144.0 "	

ABSTRACT OF VELOCITY CORRECTIONS

US.C.& G.S.S. PATTON - J. C. PARTINGTON, COMDG.

LOCALITY: SAN JUAN CHANNEL

SAN JUAN ISLANDS, WASHINGTON

HYDROGRAPHIC SURVEY NO. PA-1154

FOR USE BETWEEN 17 MAY AND 29 JUNE 1954

SHIP PATTON AND LAUNCH NO. 87

MEAN OF VELOCITY CORRECTIONS NOS. 3, 4, 5 AND 6

0.0 Fms		to	5.0 Fms
+0.1 "	from 5.1 Fms	"	14.0 "
+0.2 "	" 14.1 "	"	23.0 "
+0.3 "	" 23.1 "	"	33.0 "
+0.4 "	" 33.1 "	"	52.0 "
+0.6 "	" 52.1 "	"	73.0 "
+0.8 "	" 73.1 "	"	92.0 "
+1.0 "	" 92.1 "	"	Above

E. The projection was constructed and inked by hand in the Seattle Processing Office. As suggested by the field party, PA-1354 was shown as an insert.

F. Control Stations

All triangulation stations were plotted by latitude and longitude. The topographic signals originate from photographic locations as shown by field party on advanced vinylite manuscripts T-5591 N, T-5591 S, T-5589 S and planetable sheet PA-54-C. Topo signal JAP was transferred from the boat sheet; it was used only twice in hydro position fixes. Station JAP is also the western terminus of submarine cable between Shaw and San Juan Islands.

G. Shorelines and Topography

The shorelines were transferred from advance prints (blue line) T-5591 N, T-5591 S, T-5589S, and the following old topographic sheets; T-2192 of 1894 (from Lat. $48^{\circ} 39' 30''$ to $48^{\circ} 40' 00''$), T-2229 of 1895 (Eastern shore of Deer Harbor and Eastern half of Wasp Passage), T-2230 of 1895 (Parks Bay and vicinity). Adjustment for datum differences of these old surveys were made in the Seattle Processing Office.

I. Control of Hydrography

The sounding lines were quite irregular - much jogging (10 to 40 meters) was employed to make good the courses. These jogs show up on the boat sheet and are recorded in the hydro-volumes. This irregularity made plotting slow - frequent referral to boatsheet had to be made, and much extra time was spent on checking vernier settings and signals used. A considerable number of split fixes, erroneous signal names, etc. were corrected by the plotter in the sounding volumes.

J. Adequacy of Survey

This survey is complete and adequate and should supersede all prior surveys. Depth curves 0 to 5 fathoms were shown only where feasible and practical. Excellent junction with the contemporary survey H-8116 was made. A good junction was made with H-8087.

K. Crosslines

Good crosslines were obtained throughout the survey. No crossing exceeds a difference of over one fathom. Very little rescanning of fathograms proved necessary

L. Comparison with prior surveys

The smooth sheet H-8115 was compared to charts 6379 and 6380. No profound changes were found that were not previously described by the field party.

The 9 fm sounding in Spring Passage, mentioned by the hydrographer in the field report, falls in an area of 19 fms soundings. It may be that a 10 fm error was made in the original sounding.

M. Comparison with Chart 6379

A charted 45 fm sounding at Lat. $48^{\circ} 36'.1$, Long. $123^{\circ} 03'.5$ falls in an area of 78 fm soundings.

A charted 7.5 fm shoal at Lat. $48^{\circ} 35'.8$, Long. $123^{\circ} 02'.15$ is not indicated on the smooth sheet.

A 33 fm sounding on chart at Lat. $48^{\circ} 34'.2$, Long. $123^{\circ} 02'.55$ appears to be about 10 fms too deep.

see Review
Section 5

N. Dangers and Shoals

- ✓ $\overset{2.0}{\underset{1.5}{}}$ fm sounding at Lat. $48^{\circ} 35'.8\overset{1}{\underset{1}{}}$, Long. $123^{\circ} 00'.7\overset{2}{\underset{0}{}}$, Pos. $78-79\overset{5}{\underset{6}{}}$ ab
✓ $\overset{5.3}{\underset{5.3}{}}$ fm sounding at Lat. $48^{\circ} 37'.5\overset{3}{\underset{5}{}}$, Long. $123^{\circ} 02'.6\overset{13}{\underset{2}{}}$, Pos. 37aa
 $\overset{10.0}{\underset{10.1}{}}$ fm sounding at Lat. $48^{\circ} 35'.8\overset{36.0}{\underset{35.1}{}}$, Long. $123^{\circ} 04'.5$, Pos. 61-62d

Respectfully submitted,

Cornelius A. J. Pauw
Cornelius A. J. Pauw
Cartographer, C&GS

Examined and Approved

William M. Martin
William M. Martin
Cartographer in Charge, SPO

Approved and Forwarded

Frank G. Johnson
Frank G. Johnson, Captain
Seattle District Officer

GEOGRAPHIC NAMES PENCILED ON H-8115

Bell Island

BIRD ROCK

✓ CAUTION (PT)

CLIFF ISLAND

COON ISLAND

CRANE ISLAND

DANGER ROCK

DEER HARBOR

✓ DISNEY (POINT)

FAWN ISLAND

FLATTOP ISLAND

GULL ROCK

GREEN POINT

JONES ISLAND

LOW ISLAND

MC CONNEL ISLAND

NECK POINT

NOB ISLAND

NORTH PASS

O'NEAL ISLAND

ORCAS ISLAND

PARKS BAY

POINT GEORGE

POLE PASS

PRESIDENT CHANNEL

REEF ISLAND

ROCKY BAY

SAN JUAN CHANNEL

SAN JUAN ISLAND

SHAW ISLAND

SPRING PASSAGE

STEEP POINT

WALDRON ISLAND

WASP ISLANDS

WASP PASSAGE

WHITE ROCK

YELLOW ISLAND

GEOGRAPHIC NAMES

Survey No. 8115

No. 1

Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
A	B	C	D	E	F	G	H	K	
<u>Washington</u>		(for title)						BGN	1
<u>San Juan Islands</u>		(")						"	2
<u>San Juan Channel</u>									3
<u>San Juan Island</u>									4
<u>Point Caution</u>									5
<u>Point George</u>									6
<u>Parks Bay</u>									7
<u>Shaw Island</u>									8
<u>Neck Point</u>									9
<u>Wasp Passage</u>									10
<u>Crane Island</u>									11
<u>Pole Pass</u>									12
<u>Bell Island</u>									13
<u>Cliff Island</u>									14
<u>Low Island</u>									15
<u>Nob Island</u>									16
<u>Coon Island</u>									17
<u>Yellow Island</u>									18
<u>McConnell Island</u>								BGN	19
<u>Wasp Islands</u>									20
<u>Bird Rock</u>		(not Rks)							21
<u>Reef Island</u>									22
<u>North Pass</u>									23
<u>Dear Harbor</u>		(not Hbr, as it is town name)							24
<u>Fawn Island</u>									25
<u>Steep Point</u>									26
<u>Jones Island</u>									27

GEOGRAPHIC NAMES

Survey No. H-8115

No. 2

Name on Survey

	A	B	C	D	E	F	G	H	K	
<u>Spring Passage</u>										1
<u>Orcas Island</u>										2
<u>President Johnson Channel</u>									BGN	3
<u>Waldron Island</u>										4
<u>Point Disney</u>										5
<u>Danger Rock</u>										6
<u>White Rock</u>										7
<u>Flattop Island</u>										8
<u>Gull Rock</u>										9
<u>Green Point</u>										10
<u>O'Neal Island</u>										11
<u>Rocky Bay</u>										12
										13
										14
										15
										16
<u>Friday Harbor</u>										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27
										M 234

Names Approved 4-18-57

(see chart 6379 for best placement of names)

(tide station)

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8115...

Records accompanying survey:

Boat sheets 1...; sounding vols. 27...; wire drag vols.;
bomb vols.; graphic recorder rolls 11...; Envelopes
special reports, etc. 1... Smooth sheet, 1... Descriptive report, ...
and 1... Special Report 1954 No. 156,

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

Number of positions on sheet		7325
Number of positions checked		400*
Number of positions revised		2
Number of soundings revised (refers to depth only)		20
Number of soundings erroneously spaced		—
Number of signals erroneously plotted or transferred		—
Topographic details	Time	10
Junctions	Time	16
Verification of soundings from graphic record	Time	50

Verification by... A. J. Hoffman ... Total time 492 Date 9/5/57.

Reviewed by... [Signature] ... Time 98 Date 12/27/57

* required to identify positions

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8115

FIELD NO. PA-1154
PA-1354

Washington - San Juan Islands - San Juan Channel

Surveyed May-June 1954

Scale 1:10,000

Project No. CS 241

Soundings:

808A depth recorder

hand lead

Control:

3-point sextant fixes

on shore signals

Chief of Party - J. C. Partington

Surveyed by - J. C. Partington, F. X. Popper, R. F. Lanier

Protracted by - C. A. J. Pauw (Seattle P. O.)

Soundings plotted by - C. A. J. Pauw

Verified and inked by - A. J. Hoffman

Reviewed by - L. V. Evans III

Inspected by - R. H. Carstens

Date: 12/27/57

1. Shoreline and Control

The shoreline originates with reviewed photogrammetric survey T-5589 (1949-54) and unreviewed photogrammetric survey T-5591 (1949-54). Although T-5591 has been reviewed, reviewed prints have not been available during the processing of this survey. East of long. 123°00', the shoreline originates with T-2192 (1894), T-2229 (1895) and T-2230 (1895).

The sources of control are given by the field party in the Descriptive Report.

2. Sounding Line Crossings

Depths are in good agreement at crossings.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately defined except that the steep foreshore precluded delineation of most of the mean low-water line.

This is an inshore survey in an area of numerous medium to small islands having fairly rugged terrain. That rugged nature also characterizes the bottom where passages between islands are relatively narrow and deep with fairly steep slopes. There are many sharply-rising shoals, pinnacles and submerged ridges.

4. Junctions with Contemporary Surveys

A satisfactory junction was effected with H-8087 (1953) to the south. The junction with H-8116 (1954) to the west will be considered in the review of that survey. Contemporary surveys to the north are not yet registered.

Field Examination No. 7, 1957, lies entirely within the area of the present survey in Wasp Passage. Least depths on two shoals, and several supplementary soundings, have been transferred to the present survey from that examination.

Project surveys to the east in the vicinity of Crane Island have not yet been made. Survey depths in that area are in adequate agreement with charted depths.

5. Comparison with Prior Surveys

A) H/T-333 (1852) 1:214,240

The present survey supersedes, within the common area, this early reconnaissance which contains nothing of cartographic interest.

B) H-2113 (1891) 1:20,000 H-2213 (1894) 1:10,000
H-2114 (1891) 1:20,000 H-2214 (1894) 1:10,000

These prior surveys, with H/T-333, comprise the previous coverage of the present survey area. A comparison between

these and the present survey shows that very little change has taken place in the bottom. The more intensive development of the present survey has resulted in obtaining more detail, and some lesser depths, on previously found shoals, as well as finding some previously undetected shoals. Slightly different positions of many depths on the present survey, as compared with depths on the prior surveys, are attributed to better controlled lines (due in part to the higher speed of the sounding launch in fathometer sounding as compared to lead line or wire sounding, hence better control of positions in this area of strong, variable currents) and more careful plotting.

Numerous soundings charted from these prior surveys along the steep slopes of the islands and shoals fall in deeper depths on the present survey, due principally to inaccuracies in their plotted positions on the old sheets. All such soundings should be disregarded without further specific discussion of each sounding in this review. The following are typical examples of this condition:

<u>Prior Depths (fms.)</u>	<u>Lat.</u>	<u>Long</u>	<u>Present Depth(fms.)</u>
8 1/4 (H-2114)	48°35.43'	122°59.53'	12
1 " ✓	48°35.47'	123°02.20'	12
1 3/4 "	48°35.53'	123°02.15'	6.2
14 "	48°35.42'	123°02.27'	40-50
9 3/4 (H-2214) ✓	48°37.19'	123°05.79'	13-21

Attention is called to the following specific items, all of which should be disregarded in future charting:

(1) The following soundings, charted from H-2114, fall in an area of fairly even bottom where they are discredited by the development of the present survey and are presumed to have been incorrectly positioned:

- (a) 9 3/4 fms. in lat. 48°35.33', long. 123°00.36'
- (b) 10 1/4 fms. in lat. 48°35.37', long. 123°00.37'
- (c) 8 3/4 fms. in lat. 48°35.31', long. 123°00.54'

(2) The $4\frac{1}{2}$ -fm. sounding charted from H-2114 in lat. $48^{\circ}35.92'$, long. $123^{\circ}00.73'$, should have been $9\frac{1}{2}$ fms., as recorded in the sounding volume, which agrees adequately with the present survey of the slope on which it occurs.

(3) The $6\frac{1}{2}$ -fm. sounding charted from H-2114 in lat. $48^{\circ}36.77'$, long. $123^{\circ}00.46'$ is discredited by the present development. The sounding probably was an "11" incorrectly recorded as "7" and reduced to $6\frac{1}{2}$.

(4) The following soundings charted from H-2213 are superseded by present depths:

- (a) $7\frac{1}{2}$ fms. in lat. $48^{\circ}35.81'$, long. $123^{\circ}02.17'$
- (b) $7\frac{3}{4}$ fms. in lat. $48^{\circ}35.83'$, long. $123^{\circ}02.08'$
- (c) 10 fms. " " $48^{\circ}35.79'$, " $123^{\circ}02.08'$
from H- H-2214
- (d) 19 fms. in lat. $48^{\circ}35.89'$, " $123^{\circ}01.95'$
- (e) 25 " " $48^{\circ}35.92'$, " $123^{\circ}01.89'$

These soundings in their original positions are discredited by the closer development of the present survey where they fall in depths of 31 to 49 fms. The records indicate confusion and uncertainty in the control of the sections of lines on which these soundings were taken, and contain revised angles (possibly changed in the office) and conflicts between plotted fixes and notes by the hydrographer. These disproved soundings obviously belong some 250 m. to the southeast on the slope of a shoal.

✓(5) The 9-fm. sounding charted from H-2214 in lat. $48^{\circ}36.84'$, long. $123^{\circ}01.97'$ is disproved by the development of the present survey. In an intensive investigation of the area of this sounding depths of 18 and 19 fms. were found, indicating the probability of a 10-fm. error in this unsupported prior sounding.

✓(6) The reef charted from H-2214 in lat. $48^{\circ}37.11'$, long. $123^{\circ}01.74'$ does not exist. It originated from misinterpretation of an ambiguous "kelp" note in the records of the prior survey.

✓(7) The 45-fm. sounding charted from H-2214 in lat. $48^{\circ}36.1'$, long. $123^{\circ}-3.5'$ is an unsupported sounding falling in an area of even bottom with depths of 78-79 fms. on both the present and prior surveys. The 45 fms. is adequately discredited by the present hydrography.

(8) The 69-fm. sounding charted from H-2214 in lat. $48^{\circ}37.03'$, long. $123^{\circ}04.78'$ is an unsupported sounding which falls in an area of 78-79-fm. depths along a uniform slope on the present survey, and which conflicts with a nearby 81-fm. sounding on the prior survey. This sounding is very likely 10-fms. in error and should be disregarded.

A number of soundings have been carried forward to the present survey from the prior surveys as least depths on rocks or rocky shoals where the present survey did not obtain the same or lesser depths. With the addition of those soundings the present survey is adequate to supersede the prior surveys within the common areas.

6. Comparison with Chart 6379 (print date 8/12/57)
Chart 6380 (print date 11/25/57)

A) Hydrography

The charted hydrography originates principally with the prior surveys treated in Section 5 and that portion needs no further discussion.

✓ The 1-fm. shoal charted in lat. $48^{\circ}35.78'$, long. $123^{\circ}01.60'$ originated with the advance report (CL 592-1954) by the field party. In the final reduction of soundings the least depth on this shoal reduced to 1.4 fms.

A number of the more important soundings have been charted from preliminary application of the present survey before verification and review. Some changes have been made in verification and review, such as in the $1\frac{1}{2}$ -fm. sounding in lat. $48^{\circ}35.84'$, long. $123^{\circ}00.70'$ which was found to have been read on kelp and was corrected to 2.8 fms.

The present survey, within the area covered, entirely supersedes the charted hydrography.

B) Aids to Navigation

Shirt Tail Reef Light and Pole Pass Light are the only charted aids to navigation within the area of this survey.

They are charted in substantial agreement with their positions on this survey and adequately mark the intended features.

7. Condition of Survey

- a. The field records are complete and comprehensive.
- b. The smooth plotting was satisfactory except that some 200 positions were labeled with the wrong position number or day letter. Many positions had to be replotted by the verifier for identification.

8. Compliance with Project Instructions

Except for the development of least depths on the shoals covered by FE 7 (1957) mentioned in the next paragraph, the present survey adequately complies with the Project Instructions.

9. Additional Field Work Recommended

With the addition of several least depths from prior surveys and from F. E. No. 7, 1957, this survey is considered a good basic survey and no further field work is recommended.

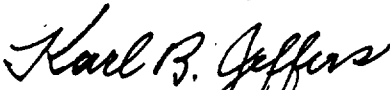
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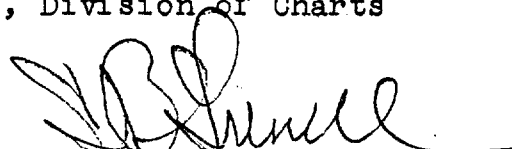
Max G. Ricketts
Chief, Nautical Chart Branch



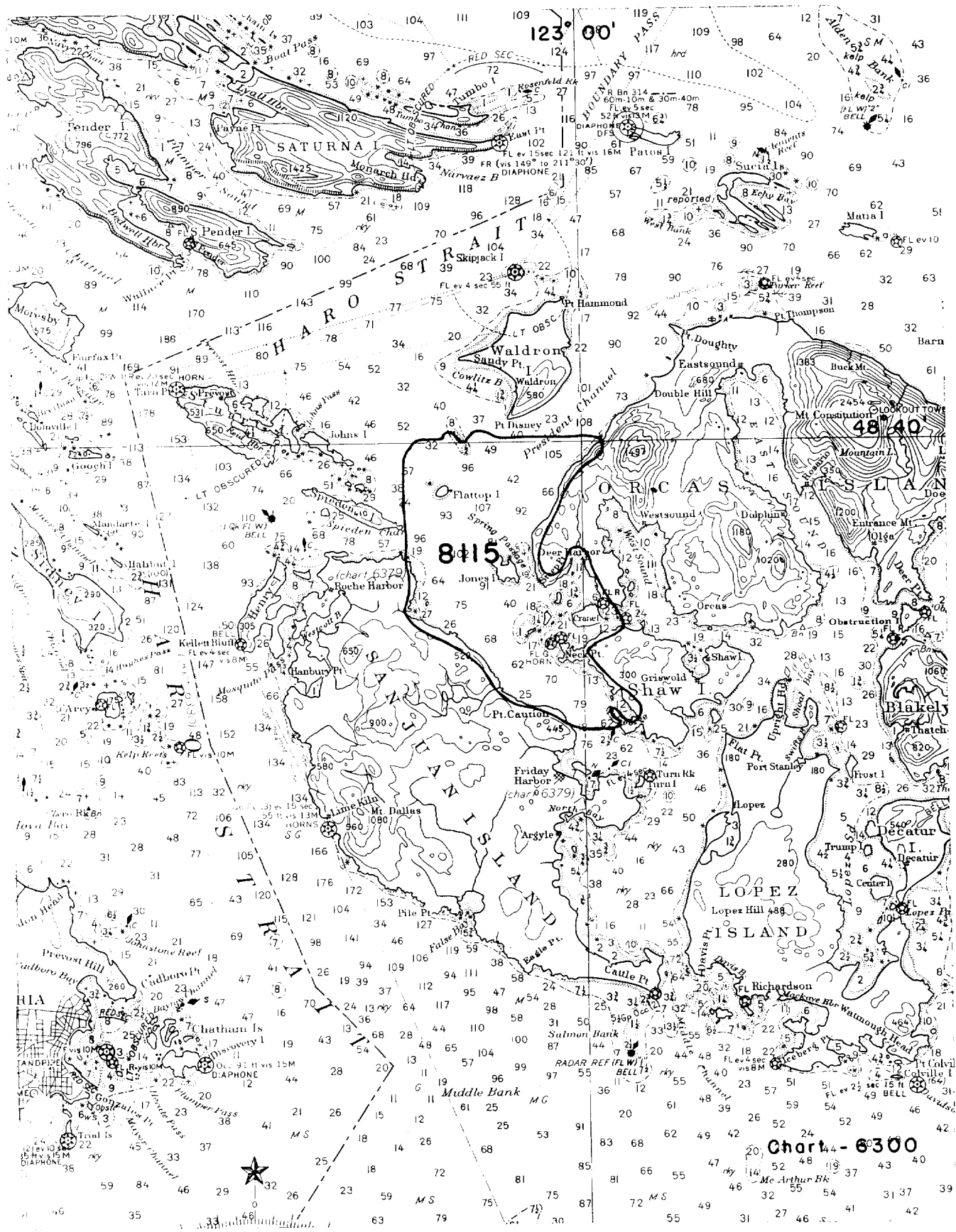
Charles A. Schanck
Chief, Division of Charts



Karl B. Jeffers 2-5-58
Chief, Hydrography Branch



Samuel B. Grenell
Chief, Division of Coastal Surveys



NAUTICAL CHARTS BRANCH

SURVEY NO. H 8115

Reviewed 12-27-57

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
3/28/57	6380	S.A.M.	Partially applied. Before After Verification and Review <i>Revised a few edgs, added shoal edgs and rocks awash</i>
6/21/57	6379	S.A.M.	Before After Verification and Review Partially applied.
8-7-57	6300	Carl M. Horgan	Before After Verification and Review cut sandys thru 6380.
28 Feb '58	6380	H.E. MacEwen	Before After Verification and Review Delete and revise shoal soundings mentioned in review.
5-17-58	6300	R.H. Henderson	Partially applied Before After Verification and Review. Delete & revise shoal edgs mentioned in review thru chart 6380.
2-2/60	6379	M. Rogers	Before After Verification and Review (Completely applied)
2/25/60	6380	M. Rogers	Completely applied thru chart 6379 Before After Verification and Review
12/16/60	6300	M. Rogers	Fully applied Before After Verification and Review thru dig #24 chart 6380
5/29/79	18433	Stephen Hill 6-13-79 ROS	Fully applied After Before After Verification and Review
6/6/79	18432	Contra 7-16-79-ROS	Before After Verification and Review Fully Applied
2-25-80	18434	P. SHUMAR	FULLY APPLIED AFTER VERIFICATION & 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.