9062

Diag. Cht. No. 8102-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PF-20-3-68 *Office No.* H-9062

LOCALITY

State Alaska

General locality Clarence Strait

Locality Grindall Island to Lyman Anchorage

1968

CHIEF OF PARTY

A. C. Holmes

LIBRARY & ARCHIVES

DATE 9-18-72

USCOMM-DC 37022-P66

9062

FORM C&GS-537
(8-15-59)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

REGISTER NO.

H-9062

HYDROGRAPHIC TITLE SHEET

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

FIELD NO.

PF 20-3-68

State ALASKA

General locality ~~SOUTHEAST ALASKA~~ Clarence Strait

Locality ~~CLARENCE STRAIT~~ Grindall Island to Lyman Anchorage 6

Scale 1:20,000 Date of survey Sept. 28 through Oct. 25, 1968

Instructions dated 8 August 1968 Project No. OPR-465

Vessel USC&GSS PATHFINDER, ML#1, ML#2, and ML#4

Chief of party CDR A. C. Holmes

Surveyed by ship personnel

Soundings taken by echo sounder, ~~hand lead~~, ~~XXX~~

Graphic record scaled by ship personnel

Graphic record checked by ship personnel

Positions Verified by ~~XXXXXXXXX~~ A.P. Vonderohe Automated plot by PACIFIC MARINE CENTER

Soundings verified ~~XXXXXXX~~ by A.P. Vonderohe

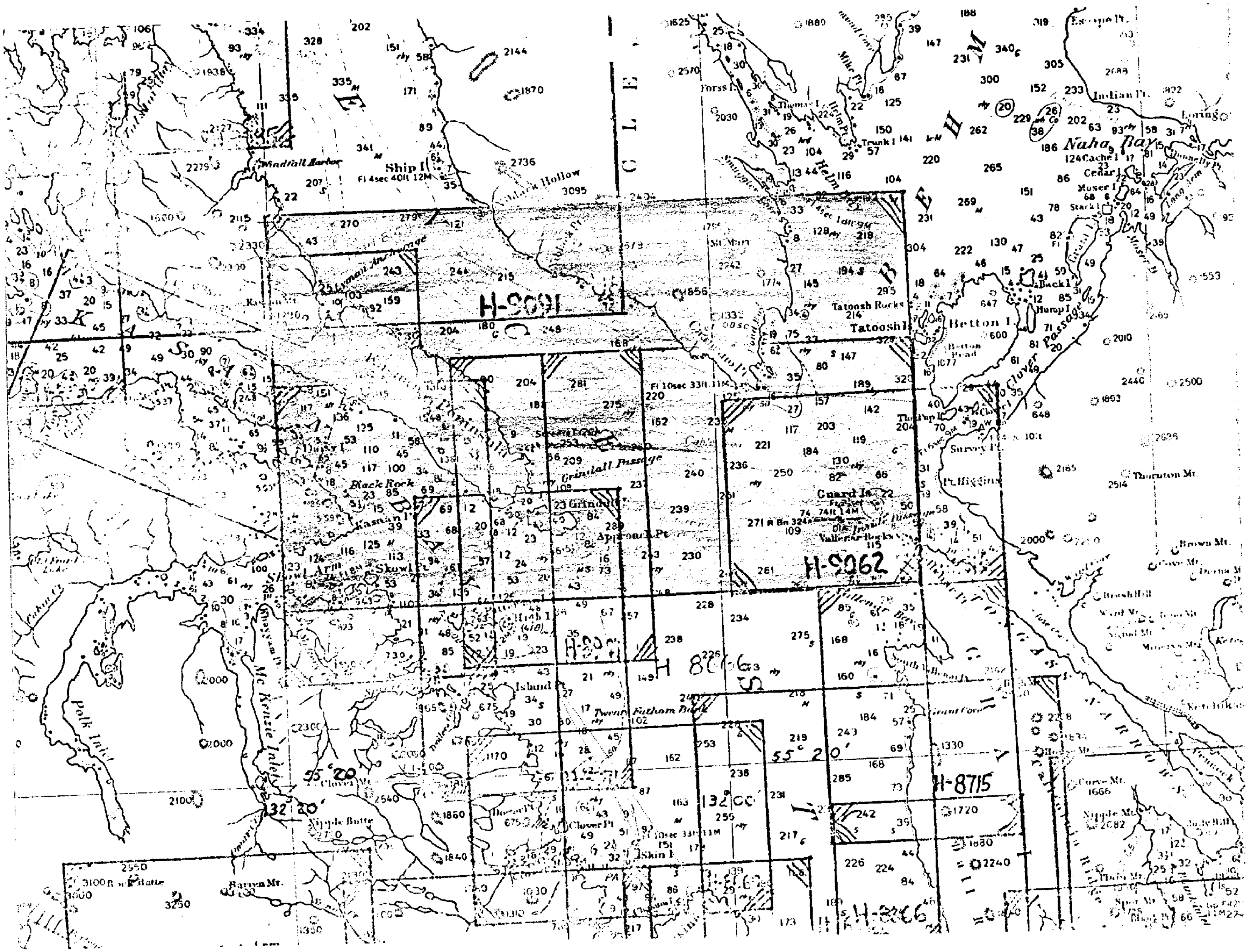
Soundings in fathoms ~~XXX~~ at ~~XXXX~~ MLLW

REMARKS:

Applied to stds 10/16/72

Examined for VM 10/19/72

USCOMM-DC 19086-P65


H-5061
H-5062
H-8715
H-8066
Naha Bay
Tatoosh Rocks
Betton I
Clover Passage
Grindall Passage
Black Rock
Ship I
Polk Inlet
Mc Kenzie Inlet
Twenty Fathom Bank
Guard Is
55° 20'
132° 00'

Descriptive Report to Accompany
Hydrographic Survey H-9062
Field No. PF 20-3-68
Scale 1:20,000

USC&GSS PATHFINDER
CDR A. C. Holmes, Comdg.

A. PROJECT

The hydrography was done in accordance with project instructions OPR-465, Clarence Strait, dated 8 August 1968. It is a continuation of the work done by the USC&GSS LESTER JONES in 1967 under project instructions OPR-472 dated 1 February 1967.

B. AREA SURVEYED

During the period from 26 September 1968 to 25 October 1968, the PATHFINDER conducted a basic hydrographic survey of Clarence Strait, Southeast Alaska, from Caamano Point to just north of Lyman Anchorage, Lat. 55° 34' N.

Also included in the survey was the detailed hydrographic investigation of a dangerous rock pinnacle reported in the Notice to Mariners dated 23 April 1968. According to this notice, the pinnacle was reported to have a minimum depth of 10 feet where a 4-fathom shoal area was charted on USC&GS Nautical Chart No. 8079.

Junctions were made with the following surveys:
H-8947 (1:10,000 -- 1967), H-8948 (1:5,000 -- 1967),
H-8771 (1:10,000 -- 1963), H-8666 (1:20,000 -- 1962),
~~H-5060 (1:20,000 -- 1930)~~, H-9091 (1:20,000 -- 1969).

C. SOUNDING VESSEL

Soundings for the survey were obtained with the ship PATHFINDER and three of its launches. The identifying colors of each of these vessels were: ship -- green, ML#1 -- blue, ML#2 -- violet, and ML#4 -- brown.

D. SOUNDING EQUIPMENT

The following Raytheon Fathometers were used during the survey:

Vessel	Model	Serial No.	Dates used
Ship	PFR-193	001	30 Sept. -- 2 Oct., 22 Oct.
Ship	PFR-195-1	001	9-,10-,11-,14-,15-, 17-, and 22 Oct.
ML#1	DE-723	140	7 Oct. -- 15 Oct.
ML#1	DE-723	935	24 Oct.
ML#2	DE-723	557	26 Sept. -- 22 Oct.
ML#2	DE-723	140	23-,24 Oct.
ML#4	DE-723	551	17 Oct. -- 25 Oct.

E. SMOOTH SHEET

Smooth sheet projections and plotting will be accomplished by electronic data processing at Pacific Marine Center.

F. CONTROL

Most of the hydrography was done by the ship using Raydist for control. Two Raydist stations were set up on the west shore of Clarence Strait: HAD -- located on reference mark for triangulation station HAD, and APPROACH -- located by horizontal traverse from triangulation station APPROACH. Calibration of the Raydist equipment was accomplished by comparing a series of visual fixes to the corresponding readings from each Raydist station.

Visual control was used by all launches for hydrographic ties to the beach and all other hydrography where safe navigation of the ship was impossible. It was also used by the ship where reception of the Raydist signals was blocked by land or where the Raydist arcs intersected at angles less than 30°.

With the exception of one hydrographic signal located by sextant cuts, all signals were located either from existing triangulation or photo identification. Four signals were located on the west shore of Behm Canal in order to provide visual control for the detailed

hydrographic investigation of the pinnacle mentioned in the presurvey review. Niblack Point Daybeacon, Caamano Point Light, and Guard Island Light provided visual control for the hydrography done by the ship. All the rest of the signals were recovered from the 1967 work of the USC&GSS LESTER JONES.

G. SHORELINE

The shoreline was traced onto the boat sheets from the following incomplete manuscripts: T-10688, T-12384, T-10693, T-10694, T-12385, T-12386, T-12387, T-10698, and T-11504.

Both shoreline and topographic details for the west shore of Clarence Strait have been verified. The field edit showed that the manuscripts covering this side of the strait are adequate and complete.

Inspection of the east side of the strait at a relatively high stage of tide indicated that the manuscripts might be inadequate. The shoreline is very rugged with numerous foul areas, detached rocks, and reefs. A thorough field edit of the area was impossible, however, due to the fact that bad weather prohibited operations during those days that the tide was low enough to adequately delineate these hazards.

H. CROSSLINES

Excluding detailed investigations of shoal areas, crosslines made up eleven percent of the total sounding lines. Good agreement was obtained at all crossings.

I. JUNCTIONS

All junctions were in good agreement.

J. COMPARISON WITH PRIOR SURVEYS

only items in (1) Lat. 55° 33.5' Long. 132° 08.2' and (2) Lat 55° 32.3' Long 132° 04.3'

PSR Item No 1 originating from T-4001 and T-4002 (1922)
All piles and fish traps shown on USC&GS Chart No. 8142 and included within the area of this survey were searched for and found to be missing. *Concur - investigation adequate to delete items from chart.

PSR Item
The dangerous pinnacle rock reported in Behm Canal was verified. A detailed hydrographic investigation revealed a least depth of ~~1.8~~ 2.20 fathoms located at Lat. 55° 31' ~~39~~ 38" N, Long. 131° 55' ~~50~~ 49" W. Considerable effort was expended in the search for other pinnacles in the vicinity, but none were discovered.

Concur
Originates with L-567 (68)

The only prior survey of the area covered by this sheet is H-1649b dated 1885. According to the project instructions, all surveys in the area dated prior to 1922 are considered inadequate. Nevertheless, it is interesting to note that the mounds and trough discussed in section O of this report are not indicated

by this prior survey.

K. COMPARISON WITH THE CHART

The same can be said for comparison with the chart that has already been said for comparison with prior survey H-1649b because all subsequent charts are based on this survey.

L. ADEQUACY OF SURVEY

With the exception of the east shoreline of Clarence Strait, this survey is considered adequate and should supersede previous surveys for charting purposes.

M. AIDS TO NAVAGATION

The only aid to navagation in the area included by the survey is the Niblack Point Daybeacon, the location of which we confirmed to be 66.1 meters north of Lat. 55° 33' N and 144.9 meters west of Long. 132° 07' W. We found it to be in good repair and visible throughout the project area.

N. STATISTICS

Vessel	Position numbers	Number of positions	Nautical miles of sounding line
Ship	3001 -- 3811 4001 -- 4217	1028	318.3
ML#1	0001 -- 0421	421	49.2
ML#2	1001 -- 1871	871	130.9
ML#4	2001 -- 2217	217	23.2

Total nautical miles of sounding line = 521.6

Total area of the sheet in square nautical miles = 35.44

Number of current stations = 2

Number of tide stations = 1

Number of oceanographic stations = 1

Number of bottom samples = 28

O. MISCELLANEOUS

A series of three mounds or hills was found about one mile northwest of Streets Island. It trends roughly due north following Long. 132° 09' W from Lat. 55° 29.3' N to Lat. 55° 30.3' N, a distance of one mile. All the mounds in the series have a relief on the order of 20- to 30 fathoms, have fairly gentle slopes, and have a roughly circular shape. The southernmost mound is the shallowest with a minimum depth of ~~29~~ 32 fathoms.

Another interesting feature of the bottom topography is a trough or linear depression of the sea floor on

the west side of the strait. From a saddle one-half miles northeast of Grindall Island (Lat. 55° 27.1' N, Long. 132° 05.1' W), a trough plunges off to the NNW and SSE. From a depth of 220 fathoms at the saddle, the trough plunges to a depth of 280 fathoms at a distance of about three miles to the NNW. At this point it appears to be truncated by the mantle of bottom sediment which blankets most of Clarence Strait. To the SSE the trough continues plunging a distance of two miles to or beyond the boundary of the project.

In cross section, the character of the trough is variable; but, in general, its west or landward flank is steep (almost vertical in some places) and rises on the order of sixty fathoms above its bottom. The east or seaward flank slopes very gently and rises only twenty fathoms above the bottom of the trough.

In accordance with the project instructions, the PATHFINDER installed Geodyne current meters at the following locations in Clarence Strait:

Station No. 1: 2.5 miles northeast of Tolstoi Point, Lat. 55° 42.0' N, Long. 132° 20.0' W

Station No. 2: Midchannel west of Onslow Island, Lat. 55° 52.0' N, Long. 132° 28.0' W

Both of these meters were suspended from Roberts radio current meter buoys. The following sequence of events describes the loss of one of these meters and the

unsuccessful attempt to obtain current information in Clarence Strait:

25 September 1968 -- Meter J-149 was installed at Station No. 1.

30 September 1968 -- Meter J-149 was moved to Station No. 2. The film record of its five days at Station No. 1 was left inside the meter. It was seen for the last time. Meter J-137 was installed at Station No. 1.

3 October 1968 -- At 0900, Meter J-137 was seen for the last time at Station No. 1.

4 October 1968 -- An extensive search was made for both Meter J-137 and Meter J-149. Meter J-149 was never found, and Meter J-137 was found with its anchor cable parted at Lat. 55° 58.2' N, Long. 132° 42.9' W, 16 miles north of Station No. 1.

P. RECOMMENDATIONS

A thorough field edit of the east shore of Clarence Strait will have to be made.

It is further recommended that future hydrography in Southeast Alaska be pursued during the summer months when better weather conditions and more hours of daylight make hydrography more practical and economical.

Q. REFERENCE TO REPORTS

See the following reports:

USC&GSS PATHFINDER 1968 Field Season Report

Special Report on Raydist Operation for 1968, OPR-429

Loss of Roberts Radio Current Meter Buoy and Geodyne Current Meter No. J-149: dated 13 October 1968

Fathometer Report, 1968 Field Season - USC&GSS PATHFINDER

Respectfully submitted,

Robert J. Barday
Lt(jg) USESSA

Approved by,

Walter Bradley
LCDR USESSA
Field Operations Officer
USC&GSS PATHFINDER

APPROVAL SHEET

The field work on this survey has been inspected and approved. The boatsheets and field records have been inspected and approved.

A. C. Holmes
CDR USESSA
Commanding Officer
USC&GSS PATHFINDER

ATTACHMENT

OPR 465 Clarence Strait, Alaska

Before the Raydist system could be used on the Clarence Strait Project the operating frequencies had to be changed because of possible interference problems in the new area. The new frequencies were 3281.080 khz for the mobile transmitter, 1640.315 khz for the "Red" shore transmitter, and 1640.725 khz for the "Green" shore transmitter.

There was some concern as to whether the frequency change could be made on board the ship with the available test equipment. Hastings did not recommend this, but said the conversion could be done, and they sent a manual covering the modification. The signal generator on board is not calibrated and is very unstable, and we do not have a 50 ohm terminated wattmeter. The ship does have an excellent Tektronics oscilloscope and a good Hewlett Packard frequency counter. A 50 ohm dummy load was constructed and used in conjunction with an inline wattmeter. This worked satisfactorily, but we had no way to determine the voltage output level of the signal generator. However, the frequency conversion was attempted on the shore stations and one mobile set. It required more than merely changing crystals due to the relatively large frequency change. Many of the tuned circuits had to be realigned. The instructions were clear but in a few instances, tuning did not give the exact response indicated in the manual so a compromise had to be made. After the conversion, the system did operate very well. The second mobile transmitter (#20) would not operate on the new frequency due to a parasitic oscillation. No attempt was made to repair the transmitter since only one set was needed for the ship hydrography in the area.

Due to the relatively small working area and the terrain of the location for the shore stations, it was not necessary or practical to use the full 100 feet for the antennas. The green station used a 55 foot antenna and the red station had a 65 foot antenna. The ground plane consisted of 16 radials of 100 foot length. It was necessary to place some of the radials near or in the water. The transmitters loaded the antenna systems very well, but it was observed that the tide level affected the loading considerably. Lane loss occurred whenever the ship was maneuvered into an area where land was between the ship and one of the shore stations. If the ship came within 50 lanes of one of the shore stations, the signal from the far base station would be lost due to the nearer base station "blocking" the receiver on the ship. In all other cases, the system operated well.

The line follower was not used in this operation as running arcs would not allow efficient coverage of the survey area. Since both dials had to be read simultaneously, it was sometimes desirable for two people to read them. The strip chart recorder was used to resolve lane loss. The Omnigraphic track plotter was used, and it is discussed in the next section.

ATTACHMENT

The mobile installation on the ship operated very well. The radar antenna did cause slight detuning of the Raydist transmitter as it rotated, but the detuning was negligible. There were no noise problems on the ship that had to be corrected. There was interference from the Collins SSB transmitter that caused lane loss, and the Northern transmitters caused slight interference. Radio silence was maintained on these units during Raydist operations. The FM ship-to-launch and ship-to-shore party radio did not cause any interference and was still operational. Occasionally atmospheric conditions caused slight noise in the system, but no problems were encountered as a result.

The calibration of the system was accomplished with sextant fixes on visual signals located on a 1 : 5000 boatsheet and then scaling the Raydist lane count from the sheet. Under ideal conditions, the repeatability of the calibration was about $\pm$ .1 lanes. Except in the case where lanes were lost due to the above-mentioned reasons, the calibration of the Raydist was rechecked following the day's operation. In all cases, lane count was verified with the strip chart recorder, and all lane losses that occurred were resolved. All hydrography was rejected after any lane loss until the system was recalibrated. Lanes whose accuracy was in doubt, were rerun using visual control.

The sounding transducers are positioned approximately below the Raydist antenna so that no correction was deemed necessary for the ship's heading.

LIST OF SIGNALS

The units for the tabulated values of latitude and longitude are degrees, minutes, and meters.

Signal No.	Latitude	Longitude	Origin of Position
			2 9
091	55 30 0398 22.672"	131 57 0301 09.732"	MAN 1927
092	55 31 1104	131 56 0569	BOND 1930
Add 094 093	55 31 1705	131 56 0393	T-12387
340	55 30 0561	132 10 0790	BO 1922
341	55 30 0994	132 11 0180	T-10694
342	55 30 1294	132 11 0472	T-10694
343	55 30 1478	132 11 0752	T-10694
401	55 32 0789	132 15 0725	HAD 1915 Raydist (Green)
403	55 32 0976	132 16 0514	TRY 1915
414	55 32 1048	132 17 0753	T-10693
416	55 33 0323	132 17 0983	T-10693
417	55 33 0776	132 18 0010	T-10693
418	55 33 1147	132 18 0161	T-10688
419	55 33 1481	132 18 0440	T-10688
420	55 33 1781	132 18 0566	SET 1922
515	55 30 1670	132 11 0880	T-10694
516	55 30 1766	132 12 0079	T-10694
517	55 31 0171	132 12 0411	T-10694
518	55 31 0257	132 12 0835	T-10694
519	55 31 0380	132 13 0039	T-10694
520	55 31 0771	132 13 0400	JED 1922
521	55 31 0796	132 13 0915	T-10694
522	55 31 1059	132 14 0252	T-10694
523	55 31 1335	132 14 0326	T-10694
524	55 31 1654	132 14 0580	T-10694
525	55 32 0138	132 15 0222	T-10693
526	55 32 0311	132 15 0587	T-10693
535	55 30 1724	132 01 0228	JAY 1922
536	55 31 0153	132 01 0379	T-12386
537	55 31 0659	132 01 0819	T-12386
538	55 31 1360	132 02 0200	T-12386
539	55 31 1813	132 02 0682	T-12386
540	55 32 0240	132 03 0042	T-12386
541	55 32 0713	132 03 0694	T-12386
542	55 32 0989	132 04 0144	T-12386
543	55 32 1258	132 04 0472	T-12386
544	55 32 0578	132 04 0545	T-13286, ~~hydro.~~
545	55 32 0910	132 05 0194	T-12386
546	55 32 0606	132 05 0097	PEN 1915
547	55 32 1388	132 05 0547	T-12385
548	55 32 1406	132 06 0014	T-12385
549	55 33 0012	132 06 0310	T-12385
550	55 33 0062	132 07 0142	T-12385
551	55 33 0457	132 07 0636	T-12385
552	55 33 0903	132 08 0008	T-12385

LIST OF SIGNALS (continued)

Signal No.	Latitude	Longitude	Origin of Position
553	55 33 1060	132 08 0477	T-12384
554	55 33 1440	132 08 0904	T-12384
555	55 34 0336	132 09 0290	T-12384
556	55 34 0787	132 09 0686	T-12384
700	55 29 1722	131 58 0971	CAAMANO POINT LIGHT 1930 62
701	55 26 1444	131 52 0807	GUARD ISLAND LIGHT 1930
702	55 32 0898	132 04 0549	T-12386, hydro
703	55 33 1604	132 09 0031	CLAN 1922
094	55 33 1417	131 56 0317	GUM 1930
800	55° 26' 05.50"	132 06 46.00"	Rayplot/Read

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

The following table of velocity corrections was computed from an oceanographic station taken on 11 October 1968 at Latitude 55° 30.2' N, Longitude 132° 06.3' W. It applies to all soundings taken during the course of the survey. The depth and correction are listed in fathoms.

Depth	Correction	Depth	Correction
0		67	
	+ 0.0		+ 0.7
4		85	
	+ 0.1		+ 0.8
12		108	
	+ 0.2		+ 1.0
22		191	
	+ 0.3		+ 1.5
31		257	
	+ 0.4		+ 2.0
41		300	
	+ 0.5		
53			
	+ 0.6		

The TRA correction is the algebraic sum of the draft correction and the initial correction. All corrections are listed in the following table so that they apply from the time at which they are listed up to but not including the next tabulated time. They are listed in fathoms.

ML#1

Draft	Initial	TRA	Time	Day
+ 0.4	0.0	+ 0.4	125530	281
+ 0.3	0.0	+ 0.3	090700	282
+ 0.3	- 0.1	+ 0.2	095330	"
+ 0.3	- 0.2	+ 0.1	124000	"
+ 0.3	0.0	+ 0.3	135630	"
+ 0.4	0.0	+ 0.4	092500	283
+ 0.4	+ 0.1	+ 0.5	124000	"
+ 0.4	0.0	+ 0.4	125800	"
+ 0.4	+ 0.1	+ 0.5	144430	"
+ 0.4	- 0.1	+ 0.3	153030	"
+ 0.4	0.0	+ 0.4	154400	"
+ 0.4	0.0	+ 0.4	092230	284
+ 0.4	+ 0.1	+ 0.5	094700	"
+ 0.4	0.0	+ 0.4	102000	"
+ 0.4	+ 0.1	+ 0.5	105700	"

ML#1 (continued)

Draft	Initial	TRA	Time	Day
+ 0.4	- 0.1	+ 0.3	114800	284
+ 0.3	- 0.1	+ 0.2	094400	285
+ 0.3	0.0	+ 0.3	104730	"
+ 0.3	+ 0.2	+ 0.5	112800	"
+ 0.3	+ 0.1	+ 0.4	114300	"
+ 0.3	0.0	+ 0.3	125100	288
+ 0.3	+ 0.1	+ 0.4	135430	"
+ 0.3	0.0	+ 0.3	135700	"
+ 0.3	+ 0.1	+ 0.4	150430	"
+ 0.3	0.0	+ 0.3	151330	"
+ 0.3	+ 0.1	+ 0.4	151449	"
+ 0.3	0.0	+ 0.3	160530	"
+ 0.4	0.0	+ 0.4	100730	289
+ 0.4	- 0.1	+ 0.3	103500	"
+ 0.4	0.0	+ 0.4	115630	"
+ 0.4	- 0.1	+ 0.3	150030	"
+ 0.4	- 0.2	+ 0.2	094430	298
+ 0.4	- 0.1	+ 0.3	111630	"
+ 0.4	0.0	+ 0.4	144230	"
+ 0.4	- 0.1	+ 0.3	155200	"
+ 0.4	0.0	+ 0.4	160800	"

ML#2

Draft	Initial	TRA	Time	Day
+ 0.3	+ 0.1	+ 0.4	135400	270
+ 0.3	0.0	+ 0.3	140100	"
+ 0.3	+ 0.1	+ 0.4	143430	"
+ 0.3	0.0	+ 0.3	144000	"
+ 0.3	+ 0.1	+ 0.4	144400	"
+ 0.3	0.0	+ 0.3	151600	"
+ 0.3	+ 0.1	+ 0.4	160000	"
+ 0.3	0.0	+ 0.3	161300	"
+ 0.4	- 0.1	+ 0.3	120200	274
+ 0.4	0.0	+ 0.4	134400	"
+ 0.4	0.0	+ 0.4	084800	278
+ 0.4	+ 0.1	+ 0.5	104715	"
+ 0.4	0.0	+ 0.4	113230	"
+ 0.4	+ 0.1	+ 0.5	114430	"
+ 0.4	0.0	+ 0.4	114730	"
+ 0.4	+ 0.1	+ 0.5	115530	"
+ 0.4	0.0	+ 0.4	120630	"
+ 0.4	- 0.1	+ 0.3	131800	"
+ 0.4	0.0	+ 0.4	133530	"
+ 0.4	- 0.1	+ 0.3	134700	"
+ 0.4	0.0	+ 0.4	141100	"

ML#2 (continued)

Draft	Initial	TRA	Time	Day
+ 0.4	+ 0.1	+ 0.5	153400	278
+ 0.3	- 0.1	+ 0.2	134200	281
+ 0.3	0.0	+ 0.3	144455	"
+ 0.4	0.0	+ 0.4	083500	282
+ 0.4	- 0.1	+ 0.3	105700	"
+ 0.4	- 0.2	+ 0.2	140030	"
+ 0.4	- 0.1	+ 0.3	140630	"
+ 0.4	0.0	+ 0.4	143200	"
+ 0.4	+ 0.1	+ 0.5	143800	"
+ 0.4	0.0	+ 0.4	152100	"
+ 0.4	- 0.1	+ 0.3	154230	"
+ 0.4	0.0	+ 0.4	155030	"
+ 0.4	0.0	+ 0.4	084130	283
+ 0.4	+ 0.1	+ 0.5	141600	"
+ 0.4	0.0	+ 0.4	145130	"
+ 0.4	- 0.1	+ 0.3	150630	"
+ 0.4	0.0	+ 0.4	152000	"
+ 0.4	+ 0.1	+ 0.5	154645	"
+ 0.4	0.0	+ 0.4	155300	"
+ 0.4	+ 0.1	+ 0.5	163610	"
+ 0.4	0.0	+ 0.4	083930	284
+ 0.4	- 0.1	+ 0.3	091000	"
+ 0.4	+ 0.1	+ 0.5	113630	"
+ 0.4	0.0	+ 0.4	125800	"
+ 0.4	- 0.1	+ 0.3	132315	"
+ 0.4	0.0	+ 0.4	135400	"
+ 0.4	- 0.1	+ 0.3	140130	"
+ 0.4	0.0	+ 0.4	141500	"
+ 0.4	- 0.1	+ 0.3	142730	"
+ 0.4	0.0	+ 0.4	154500	"
+ 0.4	0.0	+ 0.4	094900	285
+ 0.4	- 0.1	+ 0.3	100500	"
+ 0.4	0.0	+ 0.4	101700	"
+ 0.4	- 0.1	+ 0.3	104930	"
+ 0.4	0.0	+ 0.4	124800	288
+ 0.4	0.0	+ 0.4	090445	289
+ 0.4	- 0.1	+ 0.3	103630	"
+ 0.4	- 0.2	+ 0.2	142030	"
+ 0.4	0.0	+ 0.4	151200	"
+ 0.4	0.0	+ 0.4	090730	291
+ 0.4	+ 0.1	+ 0.5	092730	"
+ 0.4	0.0	+ 0.4	100830	"
+ 0.4	0.0	+ 0.4	091700	296
+ 0.4	- 0.1	+ 0.3	094830	"
+ 0.4	0.0	+ 0.4	102630	"
+ 0.4	- 0.1	+ 0.3	113630	"
+ 0.4	0.0	+ 0.4	115500	"
+ 0.4	- 0.1	+ 0.3	130600	"
+ 0.4	0.0	+ 0.4	131430	"

ML#2 (continued)

Draft	Initial	TRA	Time	Day
+ 0.4	0.0	+ 0.4	125930	297
+ 0.4	- 0.1	+ 0.3	085700	298
+ 0.4	0.0	+ 0.4	094430	"
+ 0.4	- 0.1	+ 0.3	100630	"
+ 0.4	0.0	+ 0.4	111230	"
+ 0.4	- 0.1	+ 0.3	143615	"
+ 0.4	- 0.2	+ 0.2	143800	"
+ 0.4	- 0.1	+ 0.3	144500	"
+ 0.4	0.0	+ 0.4	161100	"

ML#4

Draft	Initial	TRA	Time	Day
+ 0.4	0.0	+ 0.4	090630	291
+ 0.4	+ 0.1	+ 0.5	091930	"
+ 0.4	0.0	+ 0.4	093630	"
+ 0.4	- 0.1	+ 0.3	103130	"
+ 0.4	0.0	+ 0.4	113700	"
+ 0.4	- 0.1	+ 0.3	133100	"
+ 0.3	- 0.1	+ 0.2	104100	296
+ 0.3	- 0.1	+ 0.2	085300	298
+ 0.4	0.0	+ 0.4	102630	299

All soundings taken by the ship PATHFINDER require the following corrections: Draft = 2.4 fathoms, Initial = 0.0, and TRA = 2.4 fathoms.

Stylus corrections are not necessary for any of the soundings taken.

ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS

There are no corrections to be applied to distance measurements taken for this survey.

TIDE NOTE

Predicted tides for Lyman Anchorage were used to reduce soundings on the Boat Sheet. Tide reducers for the Smooth Sheet will be computed from the actual tides as recorded at the Lyman Anchorage Bubbler Tide Gage. The time meridian for this survey is Long. 105° W.

FORM C&GS-712
(3-9-64)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET 2/18/69

~~Nautical Chart Division~~ Pacific Marine Center

Plane of reference approved ~~as~~ for tide tape smooth reducer print-out

HYDROGRAPHIC SHEET H-9062

Locality: Clarence Strait, S.E. Alaska

Chief of Party: A. C. Holmes

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681): Lyman Anchorage S.E. Alaska

Height of Mean High Water above Plane of Reference is as follows: 14.8 feet

Remarks

C. L. Thurlow
for Chief, Tides and Currents Branch

USCOMM-DC 6680-P64

FORM 197
(3-16-55)

GEOGRAPHIC NAMES

Survey No. H-9062

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Approach Point										1
Behm Canal										2
Bond Bay										3
Cazamano Point										4
Clarence Strait										5
~~Cleveland Peninsula~~ Figgins Point										6
Grindall Island										7
Grindall Passage										8
Kasaan Peninsula										9
Lyman Anchorage										10
Lyman Point										11
Niblack Point										12
Pen Cove										13
Pen Point										14
Prince of Wales Island										15
Sawmill Point										16
Streets Island										17
Bittersweet Rock GFH 5-8-74										18
										19
				Names checked + approved						20
				A. J. Wright						21
				10-20-72						22
										23
										24
										25
										26
										27

APPROVAL SHEET

The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's Report.)

Examined and approved,

William M. Martin
Supervisory Carto. Tech.

Approved and Forwarded,

Walter L. Bradly, CDR, NOAA
Chief, Processing Division
Pacific Marine Center

FORM C&GS-946
(REV. 11-65)
(PRESC. BY
HYDROGRAPHIC
MANUAL 20-2,
6-94, 7-13)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
NAUTICAL CHART DIVISION

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9062 (PF20-3-68)

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & PNO	1	BOAT SHEETS	3
DESCRIPTIVE REPORT	1	OVERLAYS	10

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	* 1					
VOLUMES	13					
BOXES	1 (PPRs)					

T-SHEET PRINTS *(List)*

SPECIAL REPORTS *(List)*

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				2537
POSITIONS CHECKED		about 25%		
POSITIONS REVISED		163		
DEPTH SOUNDINGS REVISED		405		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		—		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		none	2	
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		63	20	
JUNCTIONS		42	8	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		93	30	
SPECIAL ADJUSTMENTS		105	6	
ALL OTHER WORK		491	62	
TOTALS		794	126	

PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE
VERIFICATION BY Alan D. Vondrohe	BEGINNING DATE 28 Nov. 1971	ENDING DATE 22 Aug, 1972
REVIEW BY George Myers	BEGINNING DATE Apr. 8, 1974	ENDING DATE May 8, 1974

Insp. R.W. DeKazanich Oct 13, 1976 69 hrs. - ENGLE 12 hrs

USCOMM-DC 36271-P65

Reg. No. H-9062

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE_____ TIME REQ'D_____ INITIALS_____

REMARKS:

H-9062

Items for Future Presurvey Reviews

This survey covers the area of Clarence Strait from the vicinity of Grindall Island to the entrance at Lyman Anchorage. The scarcity of prior depths in the area precludes a comparison between the prior and present surveys. However, it is noted the general bottom configuration has remained the same.

Future surveys should include least depth determination by hand lead of features listed in item 3C of the review.

Position Index		Bottom Change Index	Use Index	Resurvey Cycle
Lat.	Long.			
552	1321	1	1	50 years
553	1321	0	1	50 years
553	1322	0	1	50 years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE SURVEYS DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9062 FIELD NO. PF-20-3-68

Alaska, Clarence Strait, Grindall Island to Lyman Anchorage

SURVEYED: September 26 - October 25, 1968

SCALE: 1:20,000 PROJECT NO.: OPR-465

SOUNDINGS: DE-723 Depth Recorder
Raytheon PFR Depth Recorder

CONTROL: Raydist (Range-Range)
Sextant Fixes on
Shore Signals

Chief of Party	A. C. Holmes
Surveyed by	A. C. Holmes, P. B. Clark
	C. D. Iles, D. M. Mauthe
	R. Barday, W. R. Cameron
	G. Hoekstra, D. C. Harrison
	J. B. Courtney, M. Kawka
	R. Olson, K. E. Lilly
Automated Plot by	Gerber Digital Plotter (PMC)
Verified by	A. P. Vonderohe
Reviewed by	G. K. Myers
	Date: May 8, 1974
Inspected by	R. W. DerKazarian

1. Description of the Area

This survey covers the area of Clarence Strait from the vicinity of Grindall Island on the south to the entrance of Lyman Anchorage except for some inshore areas, generally within the 50- and 120-fathom depth curves on the west side of the strait, which are covered by junctional surveys.

The bottom configuration is characterized by steep slopes from shore which extend to depths of greater than 200 fathoms. Many rocky ledges extend along the shore.

A pinnacle rock on the west slope inside the entrance of Behm Canal charted as 1 1/2 fathoms reported was investigated on this survey. A least depth of 2 fathoms was found over the rock.

Predominant bottom characteristics are mud, clay, sand, and pebbles.

2. Control and Shoreline

The source of control is adequately described in the Descriptive Report.

The shoreline originates with advanced photogrammetric manuscripts T-10688 (1956-1963), T-10693 (1956-1963), T-12384 (1963-1969), T-12385 (1963-1969); and incomplete photogrammetric manuscripts T-10694 (1956), T-10698 (1956), T-11504 (1956), T-12386 (1963), T-12387 (1963).

The shoreline transferred from the incomplete photogrammetric manuscripts has been inadvertently inked on the smooth sheet. Caution should be used in conjunction with this shoreline pending field edit, at which time the source of the shoreline will be exclusively determined by the photogrammetric manuscripts. Foreshore features determined by hydrography are exempt from these future changes, if any.

3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves are adequately delineated, except where ledges inshore made passage dangerous. In a few cases, brown depth curves were drawn by the reviewer to emphasize lesser depths in areas of deeper soundings.

C. The delineation of bottom configuration was adequate. Depths through the strait are deep and adequately developed to provide safe passage. Investigations of least depths are generally very good. A few additional lines, including crosslines, would have been desirable to delineate the extent and verify the least depths of the following shoals:

Depth (fms.)	Latitude	Longitude
3.2	55°32.13'	132°04.68'
4.4	55°32.12'	132°04.03'

4. Condition of Survey

The plotting, sounding records, various sounding printouts, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual supplemented by the Instruction Manual - Automated Hydrographic Surveys, except for the following:

A. No indication of vertical cast comparisons for determining instrumental correction for the Ship PATHFINDER could be found in the field records.

B. Portions of Raydist controlled sounding lines along Kasaan Peninsular had to be adjusted by the verifier to effect agreement with visual controlled hydrography in the area. Brush recorder tapes were unavailable during review.

C. Two signals, 702 (hydrographic) and 544 (topographic), were listed incorrectly in the Descriptive Report and inked with incorrect colors on the smooth sheet.

5. Junctions

Adequate junctions have been effected with H-9091 (1969) on the north; H-8947 (1967) and H-8948 (1967-8) on the west; and H-8771 (1963) and H-8666 (1962) on the south. No contemporary survey has been received for the junction on the east. However, present survey depths are in general harmony with charted depths in the area.

6. Comparison with Prior Surveys

A. H-1649b (1885) 1:80,000

A detailed comparison with this small-scale reconnaissance survey is precluded by the scarcity of prior depths within the common area of the present survey. However, in general, the character of the bottom has remained the same. The present survey is adequate to supersede the prior survey in the common area.

B. H-3810 WD (1915-1916) 1:40,000
H-3810a WD (1926) 1:229,000

The wire-drag surveys cover most of the present survey. Effective drag depths do not conflict with depths on the present survey.

7. Comparison with Chart 8083 (latest print date June 3, 1972)
Chart 8079 (latest print date March 24, 1973)
Chart 8102 (latest print date September 15, 1973)
Chart 8142 (latest print date February 10, 1973)

A. Hydrography

The charted hydrography originates with depths from boat sheets (Bp's 75880-75884) and the verified smooth sheet of the present survey.

Attention is directed to Paragraph J, Comparison with Prior Surveys, of the Descriptive Report for disposition of Presurvey Review numbered items in the charted area of the present survey.

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

B. Aids to Navigation

The charted positions of aids adequately mark the features intended.

8. Compliance with Project Instructions

The survey, in general, complies with the Project Instructions.

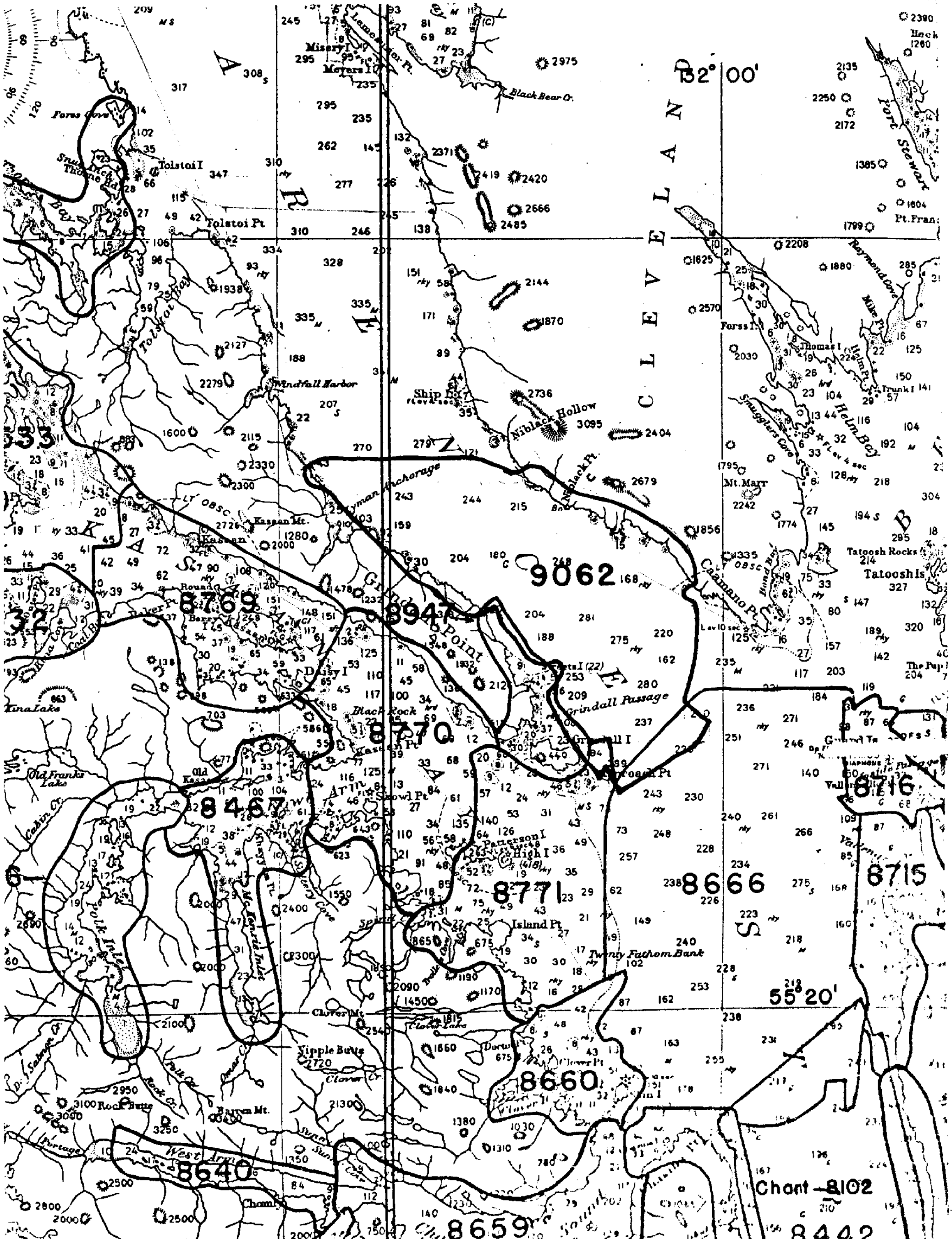
9. Additional Field Work

This survey is considered to be a good basic survey and no additional work is recommended.

Examined and Approved:

A. J. Patrick
Chief
Marine Surveys Division

for L. Curtis Yeager
Associate Director
Office of Marine Surveys
and Maps



9062
8947
8769
8770
8467
8771
8666
8715
8716
8660
8640
8659
8442
Chart 8102
132° 00'
55° 20'
CLEVELAND
Tolstoi I
Tolstoi Pt
Tolstoi Bay
Windfall Harbor
Ship I
Niblack Hollow
Niblack Pt
Kasaan Mt.
Kasaan
Grindall Point
Grindall Passage
Grindall I
Black Rock
Kasaan Pt
Skowl Pt
Patterson I
High I
Island Pt
Twenty Fathom Bank
Polk Inlet
McKenzie Inlet
Clover Mt.
Clover Pt
Yipple Butte
Barren Mt.
Rock Butte
West Arm
Old Franks Lakes
Mt. Marr
Caamano Pt
Smugglers Cove
Helm Bay
Forss I
Thomas I
Tatoosh Rocks
Tatoosh Is
Port Stewart
Raymond Cove
Misery I
Meyers I
Black Bear Cr.
Fors Cove
Lyman Anchorage
Trunk I

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9062

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
8079	10-30-72	BACH	~~Full~~ Part ~~Before~~ After Verification ~~Review Inspection~~ Signed Via
			Drawing No. 3rd Ed. - Examined for Critical Corrections
8142	2/14/73	E. Frey	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. 11 App'd critical corr's only along
			both east & west shores
8102	6/12/73	E Frey	~~Full~~ Part Before ~~After Verification~~ Review Inspection Signed Via
			Drawing No. Exam'd in part via chl 8142 (dwg 11)
			No corrections before
8142	10/8/74	D.J. Kennon	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. Additional Changes at Ipes
			Station and added bottom characteristics 6 places
8079	3/1/76	D. Duffy	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. Added rocks + revised soundings
8079	6-20-77	C.S Forbes	
8142			Full Part Before After Verification Review Inspection Signed Via
M424			Drawing No. From For NM after Signature - no
			corrections
17422	4-28-81	M. Sagan	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. #11 Thru 17436
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.