00000

#### NOAA FORM 76-35-

# U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY

# DESCRIPTIVE REPORT

Type of Survey
Job No. CM-7413 Map No. TP-00896
Classification No. FINAL Edition No1
Field Edited Map
LOCALITY
StateAlaska
General Locality Icy Bay
Locality
•
19 75 <b>TO</b> 19 76
REGISTRY IN ARCHIVES
DATE

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974-762-901

NOAA FORM 76-36A U. S. DEPARTMENT OF COMMERCE (3-72) NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.	TYPE OF SURVEY	SURVEY TP- 00896
	ORIGINAL	MAPEDITION NO. (1)
DESCRIPTIVE REPORT - DATA RECORD	RESURVEY	MAP CLASS I
DESCRIPTIVE REPORT - DATA RECORD	_	ON G112
PHOTOGRAMMETRIC OFFICE	1	
Coastal Mapping Division		ING MAP EDITION
Atlantic Marine Center, Norfolk, VA	TYPE OF SURVEY ORIGINAL	JOB PH-
OFFICER-IN-CHARGE	RESURVEY	SURVEY DATES:
	REVISED	19 TO 19
Jeffrey G. Carlen, Cdr.		
I. INSTRUCTIONS DATED	1 ,	FIELO
1. OFFICE	4.	FIELD
Aerotriangulation 5/17/75	Premarking	5/14/74
Aerotriangulation 5/17/75 Compilation 6/07/76	Supplement 1	4/30/75
•		
II. DATUMS	<u> </u>	
	OTHER (Specify)	
1. HORIZONTAL: X 1927 NORTH AMERICAN		
MEAN HIGH-WATER	OTHER (Specity)	
2. VERTICAL:		
3. MAP PROJECTION	4.	GRID(S)
•	STATE	ZONE
Transverse Mercator	Alaska	2
1:20,000	STATE	ZONE
III. HISTORY OF OFFICE OPERATIONS		
OPERATIONS	NAME	DATE
i. AEROTRIANGULATION BY	D. Norman	12/75
METHOD: Analytic Landmarks and aids by		
2. CONTROL AND BRIDGE POINTS PLOTTED BY	Solbeck	1/76
METHOD: Coradomat CHECKED BY	Solbeck	1/76 6/76
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY	R. Minton J. Byrd	6/76
COMPILATION CHECKED BY INSTRUMENT: Wild B-8 CONTOURS BY	NA NA	0/10
scale: 1:30,000 CHECKED BY	NA	
4. MANUSCRIPT DELINEATION PLANIMETRY BY	J. Roderick	7/76
CHECKED BY	F. Margiotta	7/76
CONTOURS BY	NA NA	
CHECKED BY	NA T. Podomiels	n /n/
scale: 1:20,000 HYDRO SUPPORT DATA BY	J. Roderick F. Margiotta	7/76 7/76
CHECKED BY  5. OFFICE INSPECTION PRIOR TO FIELD EDIT  BY	F. Margiotta	7/76
ВУ	F. Margiotta	3/77
6. APPLICATION OF FIELD EDIT DATA CHECKED BY	Jim Byrd	4/ 777
7. COMPILATION SECTION REVIEW BY	Jim Byrd	4/ /77
8. FINAL REVIEW BY	Jim Byrd_	1/79
		4 / 7 0
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY	Jim Byrd	1/79
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH 10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH 11. MAP REGISTERED - COASTAL SURVEY SECTION BY		5. 3/79

NOAA FORM 76-36B			NATI	ONAL OCE			OF COMMERCE
3-72) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION TP-00896 NATIONAL OCEAN SURVEY							
COMPILATION SOURCES							
1. COMPILATION PHOTOGRAPHY	<del></del>	<del></del> -					
CAMERA(S)	-	TYPE	S OF PHOTO	GRAPHY	<u> </u>		
Wild RC-10 "C"			LEGEND			TIME REFER	RENCE
TIDE STAGE REFERENCE		(C) COL	_OR		ZONE	Yukon	
REFERENCE STATION RECORDS		· (Þ) PAN	CHROMATI	с	MERIDI		STANDARD
TIDE CONTROLLED PHOTOGRAP	'HY	(I) INF	RARED			135th	DAYLIGHT
NUMBER AND TYPE	DATE	TIME		SCALE		STAGE OF	TIDE
*75C(C) 7272 thru 7276	8/04/75	12:2	25 ]	:60,000	6	.5 ft. abo	are MTTM
**750(0) 7261 thru 7266	8/04/75	12:1		:60,000		.7 ft. abo	ve MLIW
**75C(C) 7251	,,			,		.,	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	}						
REMARKS							
*Bridge and com	•	tos.					
**Hydro support							
2. SOURCE OF MEAN HIGH-WATER	LINE:						
The mean high	water line w	as compi	iled fro	m the a	bove lia	sted compi	lation
photographs.		•					
N. marenes	high wat	u lin	e rev	cocin	regi	usted i	es.
to the	mean	high a	vater.	lines	by th	le fuld	edilar
approximate mean rapid lines since the dashed lene							
were symbolized as some truling, But							
The mean high water line revisions requested as approximate mean high water lines by the field editor were symbolized as solid lines since the dashed line indicates unsurveyed shouline. But							
3. SOURCE OF MEAN LOW-WATER	R MEAN LOWER L	OW-WATER	LIŃE:				
No MLLW line wa	as compiled.						
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			•				
İ							
1							
							` _
4. CONTEMPORARY HYDROGRAPH	IC SURVEYS (List	only those s	urveys that a	are sources t	or photogram	nmetric survey i	nformation.)
SURVEY NUMBER DATE(S)	SURVEY CO	PY USED	SURVEY	IUMBER	DATE(S)	SURVE	Y COPY USED
1 1			ł				
			<u> </u>		<u> </u>		
5. FINAL JUNCTIONS	AST		SOUTH	<del></del>		WEST	<u></u>
TP-00894	No Surve	у	N	o Surve	У	1	00895
REMARKS					<u></u>		

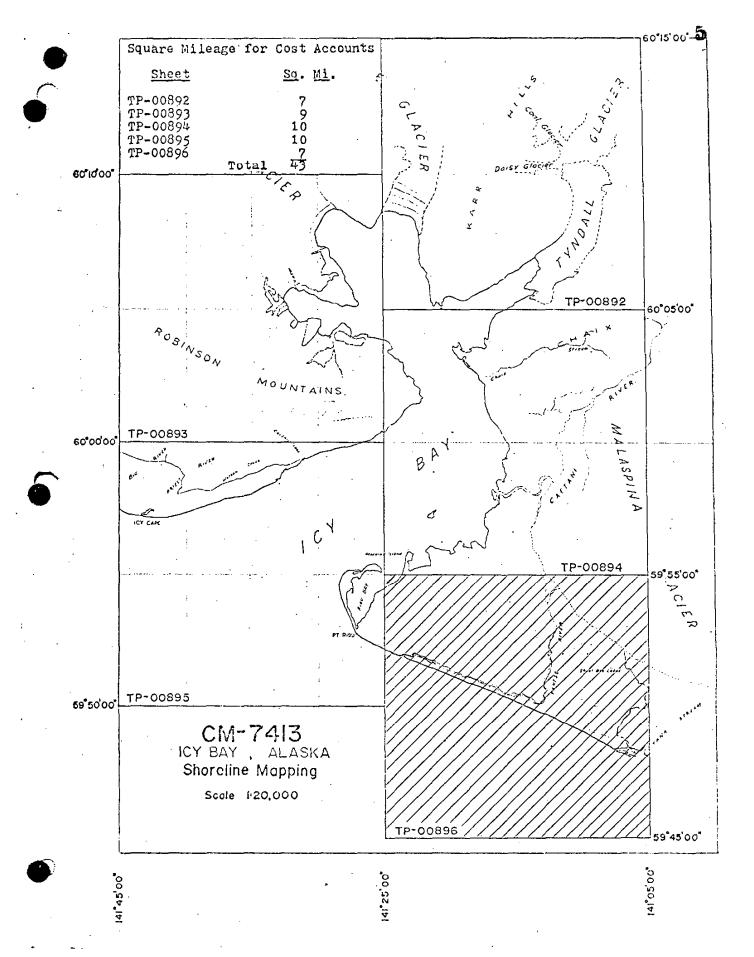
OAA FORM 76-36C 3-72)	TP-0089	6	NIC AND ATMOSPHER!	ENT OF COMMER C ADMINISTRATI AL OCEAN SURV
· [X] FIELD INSPECTION OPE	HISTORY OF FIELD	DERATIONS  DEDIT OPERATION		
<del></del>	PERATION		NAME	DATE
. CHIEF OF FIELD PARTY	•			4.4
		R. Me		6/74
HADITANTI CANTROL	RECOVERED BY	R. Me		6/75
HORIZONTAL CONTROL	ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY		iggers	6/75
	RECOVERED BY	NA NA	<u> </u>	7/7
VERTICAL CONTROL	ESTABLISHED BY	NA		
	PRE-MARKED OR IDENTIFIED BY	NA		·
F	RECOVERED (Triangulation Stations) BY	None		
LANDMARKS AND AIDS TO NAVIGATION	LOCATED (Field Methods) BY	None		
	IDENTIFIED BY	None		
	TYPE OF INVESTIGATION  COMPLETE			
. GEOGRAPHIC NAMES INVESTIGATION	SPECIFIC NAMES ONLY			
	X NO INVESTIGATION			
. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	None		
BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	NA		
SOURCE DATA		·		
. HORIZONTAL CONTROL ID	ENTIFIED	2. VERTICAL CO	NTROL IDENTIFIED	
PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DE	SIGNATION
75C(C) 7263 JARL, 75C(C) 7264 YAHTSI	1974 E, 1974 RM 1			-
. PHOTO NUMBERS (Clarifica	ntion of details)	J	<u> </u>	
None				
LANDMARKS AND AIDS TO	NAVIGATION IDENTIFIED			
None				
PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT	NAME
5. GEOGRAPHIC NAMES:	REPORT NONE	6. BOUNDARY AN	ID LIMITS: REPO	RT 🚺 NONE
. SUPPLEMENTAL MAPS AND	D PLANS			
None				
, OTHER FIELD RECORDS (S	iketch books, etc. DO NOT list data submi	tted to the Geodesy E	livision)	

NOAA FORM 76-36C (3-72)	, mp. 004		U. S. DEPARTMEN NIG AND ATMOSPHERIC NATIONAL	IT OF COMMERC ADMINISTRATIO OCEAN SURVE
·	TP-0089	OPERATIONS		
I. TIELD INSPEC	TION OPERATION X FIE	D EDIT OPERATION	<del></del> -	,,
	OPERATION	۸.	IAME	DATE
1. CHIEF OF FIELD	PARTY	Charles K. R. L. Speer J. P. Randa	Townsend, Cdr.	6-9/76
	RECOVERED BY	None		
2. HORIZONTAL CON	ITROL ESTABLISHED BY	None		
	PRE-MARKED OR IDENTIFIED BY	None		
	RECOVERED BY	NA		
3. VERTICAL CONTR	OL ESTABLISHED BY	NA		
	PRE-MARKED OR IDENTIFIED BY	NA		
	RECOVERED (Triangulation Stationa) BY	None		·
<ol> <li>LANDMARKS AND AIDS TO NAVIGAT</li> </ol>	LOCATED (Field Methods) BY	None	· -	<del></del>
AIDS TO NAVIGAT	IDENTIFIED BY	None		,
•	TYPE OF INVESTIGATION			
<ol><li>GEOGRAPHIC NAM INVESTIGATION</li></ol>	BY			
INVESTIGATION	SPECIFIC NAMES ONLY	,		
	X NO INVESTIGATION	T 1 0 0 1		
6. PHOTO INSPECTION		John C. Osb	orn, Lt. (jg)	7/76
7. BOUNDARIES AND	LIMITS SURVEYED OR IDENTIFIED BY	NA NA	<u></u>	
I. SOURCE DATA	ITROL IDENTIFIED	TO VERTICAL CON	TROL IDENTIFIED	
None	THOSE IDEA THE TED	1	THOE IDENTITIES	
<del></del>	· · · · · · · · · · · · · · · · · · ·	AM		
PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIG	GNATION
		1		
		i l		
3. PHOTO NUMBERS	(Clarification of details)			· ·
75C(C) 7261	thru 7266 .75C(C)7251			
4. LANDMARKS AND	AIDS TO NAVIGATION IDENTIFIED	<del></del> -		
None				
PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	N TOBLEO	AME
		· .		
		[		
GEOGRAPHIC NAM		6. BOUNDARY AND	D LIMITS: REPOR	T NONE
7. SUPPLEMENTAL N	MAPS AND PLANS			
None				
	CORDS (Sketch books, etc. DO NOT list data subm	itted to the Coast a mi	Interior)	
	was applied to this manuscript			
Flath	Film Ozalid, HYDRO Sounding Volu	ттош опе тотт(	OMTHE GGIST	
	paque Photos listed above	/		
	Edit Report, RA-10-3A-76			
rield	Lait Report, KA-10-34-76			

U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NOAA FORM 76-36D (3-72)TP-00896 **RECORD OF SURVEY USE** I. MANUSCRIPT COPIES COMPILATION STAGES DATE MANUSCRIPT FORWARDED DATA COMPILED DATE REMARKS MARINE CHARTS HYDRO SUPPORT Compilation complete, Class III Manuscript 7/08/76 8/16/76 7/23/76 pending field edit. Superseded Field edit applied. 3/77 Class I Manuscript 5/11/77 Compilation complete. Final Review 1/79 Final 1/79 II. LANDMARKS AND AIDS TO NAVIGATION None 1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH CHART LETTER DATE NUMBER REMARKS NUMBER ASSIGNED FORWARDED 2. REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED:

3. REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: III. FEDERAL RECORDS CENTER DATA 1. X BRIDGING PHOTOGRAPHS; X DUPLICATE BRIDGING REPORT; X COMPUTER READOUTS. 2. TONTROL STATION IDENTIFICATION CARDS; FORM NOS 567 SUBMITTED BY FIELD PARTIES. 3. SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
ACCOUNT FOR EXCEPTIONS: 4. DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED:

	SURVEY NUMBER	JOB NUMBER	TYPE OF SURVEY			
SECOND	TP(2)	РН	REVISED RESURVEY			
EDITION	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	7	MAP CLASS		
			□n.	□ıı. □ıv.	V. FINAL	
	SURVEY NUMBER	JOB NUMBER	· 1	TYPE OF	SURVEY	
THIRD	TP(3)	PH	REVISED RESURVEY			
EDITION	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	MAP CLASS			
			□ u.	□m. □w.	UV. DEINAL	
	SURVEY NUMBER	JOB NUMBER		TYPE OF	SURVEY	
FOURTH	TP(4)	PH		REVISED	RESŪRVĖY	
EDITION	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	7	MAP CLASS		
EDITION		ľ	□n.	□ m. □w.	OV. OFINAL	



#### SUMMARY TO ACCOMPANY

#### DESCRIPTIVE REPORTS

#### TP-00892 thru TP-00896

Project CM 7413 covers Icy Bay, Alaska from YANA STREAM Northwest to ICY CAPE including Guyot, Yahtse and Tyndall Glaciers.

There were five maps assigned in this project, TP-00892 thru TP-00896 all at scale 1:20,000. The purpose of these maps were to provide contemporary shoreline data in the support of hydrographic operations and to aid in nautical chart revision.

Field work prior to compilation consisted of two parts. September 1974 season entailed the establishment of Horizontal and Vertical control in order to meet aerotriangulation requirements. The 1975 field season consisted of paneling horizontal control stations in advance of the aerial photography.

The area was flown in July and August 1975 with the "c" camera on color film at 1:60,000 scale.

Analytic aerotriangulation was performed at the Washington Science Center in December 1975.

The maps were compiled and hydro support ratios were prepared at AMC in June and July 1976.

Field edit was completed in September 1976. It was applied to the map at AMC in March thru May 1977.

Final Review was performed at AMC in Oct. 78 - Jan. 1979. The original base manuscript and all pertinent data was forwarded to the Washington Science Center for final registration.



# U.S. DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL OCEAN SURVEY

Pacific Marine Center

September 11, 1974

Reply to Attn. of: CPM101

Tο : CPM

Director, Pacific Marine Center

F. G. Mr. O From : R. B. Melby

Chief, PMC Field Party

Subject: Project Report, Icy Bay, Alaska (1974)

Project Instructions Field Job CM-CM-7413, Shoreline Mapping, Icy Bay, Ref: Alaska, dated May 14, 1974

General: The horizontal control and tidal observations were made this field season. Premarking for aerial photography is scheduled for the 1975 field season.

The Pacific Marine Center Photo Party, with the support of two men from the National Geodetic Survey, performed all phases of the field work with the logistical support of a helicopter on contract from Evergreen Helicopters.

Housing and rations were obtained at the Gulf Timber Co., a logging operation located on the northwest shore of Icy Bay in the vicinity of Watson Creek. Arrangements were made through Mr. Sam Susano, South-Central Timber Development Co., 255 East Fireweed, Anchorage, Alaska 99503, telephone (907) 279-1493. Mr. W. L. Slagle is the camp boss of the Gulf Timber Co. Gulf Timber Co. is a contractor of the South-Central Timber Co.

There is a gravel landing strip near the camp site which is used for mail and supply planes.

Area: Icy Bay is a dog-leg shaped bay about 18 miles long and about 6 miles wide. Its mouth junctions with the Gulf of Alaska and terminates com at the Guyot Hills and the Guyot Glaciers. Near the mouth of the Bay the shores are heavily wooded, and as one progresses northward in the Bay the land becomes more rugged and barren due to the recently retreating glaciers.

Guyot Glacier is quite active, dumping large amounts of ice into the Bay to the extent that the upper 4 miles of the Bay are almost a solid mass of floating ice bergs. Tyndall Glacier is rather inactive, and little ice is being dropped into the Bay. Depending on the wind and currents, at times the lower part of the Bay becomes relatively ice free, and at other times the floating ice is rather heavy. Riou Bay remained relatively ice free.

Horizontal Control: Three old horizontal control stations were recovered in the area. All three had been established or reoccupied by a geodetic field party in 1959. All new control was extended from these stations. AMBER 1922 and RIDGE 1922 r'59 were used as the starting base with TYNDALL (USGS) 1959 as the check angle station.

A combination of triangulation and traverse was observed using the Tellurometer Model CA 1000 microwave distance measuring instruments to determine the distances and the Wild T-2 theodolites to observe the horizontal and vertical angles. Second order Class II, triangulation, and traverse specifications as listed in the publication "Classification Standards of Accuracy and General Specifications of Geodetic Control Surveys" (1974) were-employed.

Twenty-four monumented horizontal control stations were established. Eighteen were occupied, two were intersection stations, and four were short traverse stations. Twenty-two lines were measured with the tellurometer.

Vertical Control: Two tide stations were established using the bubbler-type tide gages, and both stations recorded a 30-day series. One was located at the log domp at the mouth of Carson Creek, and the other was situated on the south shore of the fiord leading to the Tyndall Glacier. None of the bench marks established at previous tide stations were recovered. The proposed tide station site at the south tip of the Guyot Hill was ice bound by the constantly shifting pack ice. Very little of the shoreline is conducive to tide gage installations, either the bubbler or the ADR type. Both tidal stations are tied to the horizontal control network through stations CARSON and Tidal B.M.1 (Tyndall Glacier).

Other Control: Two horizontal control stations were located at the request of Mr. Claire J. Byrnes, Continental Oil Co., Ponca City, Oklahoma, on a reimbursable agreement. The stations were used as calibration stations for offshore, electronic navigation systems and were incorporated in the horizontal control network.

## Photogrammetric Plot Report lcy Bay, Alaska CM-7413 December 28, 1975

- 21. Area Covered: This report pertains to five sheets in the vicinity of Lcy Bay, Alaska. The sheets covered are TP-00892 thru TP-00896. All are 1:20,000 scale.
- 22. Method: Five strips of color photography at 1:60,000 scale were bridged by analytic aerotriangulation methods. The strips were adjusted to ground in the Alaska, zone 2 state plane coordinate system.

Points were established for setting one model (strip 4) of 1:60,000 scale photography. Points were also established for determining ratios of 1:60,000 scale offshore photography. Points for compilation were plotted by the Coradomat. Ratios were ordered.

- 23. Adequacy of Control: The control was adequate.
- 24. Supplemental Data: No supplemental data was used.
- 25. Photography: The photography was adequate.

Submitted by,

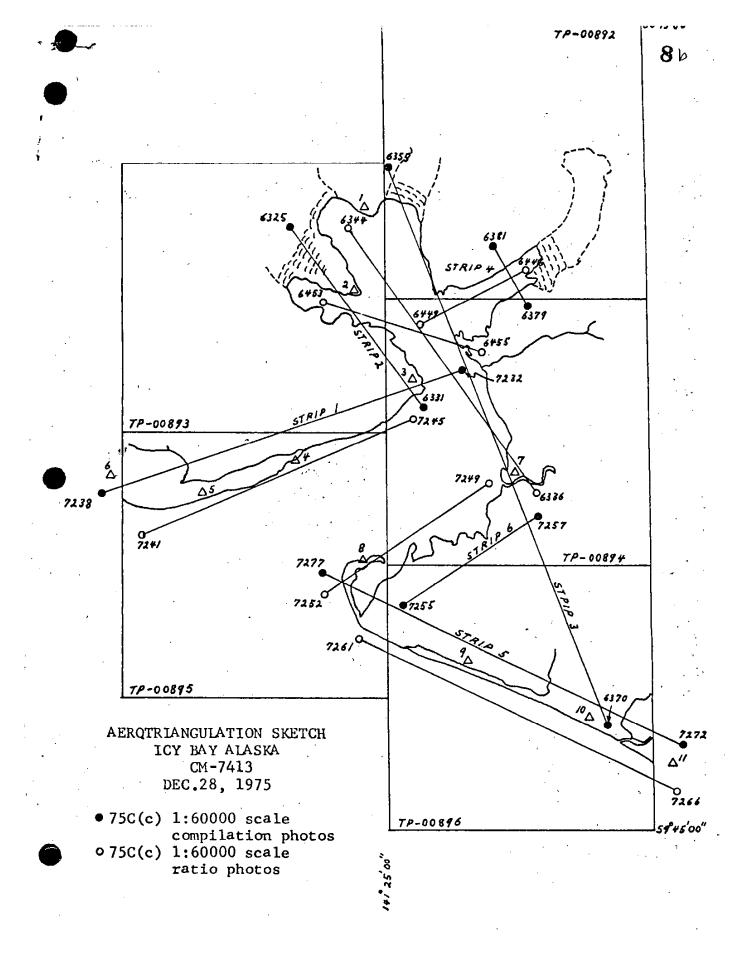
Dor O. Norman

Don O. Norman

Approved by:

John D. Perrow, Jr.

Chief, Aerotriangulation Section





9 JARL 8 RUNT 7 CAETANI

# Fit to Control (in feet)

-2.7, +6.7 -4.0, +2.1 -0.4, -0.8

Strip I	• -	
3 KICHYATT 4 CARSON 5 WATSON 6 STOR		+0.2, +0.4 -1.6, -1.2 +1.2, -1.2 -1.0, 0.2
Strip 2		
I GUYOT 2 TOYUG 3 KICHYATT		0.0, 0.0 0.0, 0.0 0.0, 0.0
Strip 3		
I GUYOT 2 TOYUG 3 KICHYATT 7 CAETANI 10 YAHTSE	•	-0.6, -0.6 -0.5, +0.5 +2.7, +1.1 -1.9, -1.1 +0.3, 0.0
Strip 5	· • · · ·	
II YANA IO YAHTSE 9 JARL 8 RUNT		-1.3, +0.4 +3.0, -1.0 -2.2, +1.0 +0.5, -0.4
Strip 6		

NOAA FORM 76-41				U.S. DEPARTMENT OF COMMERCE	U.S. DEPARTMEN	T OF COMMERCE
(6–75)		DESCRIPTIV	DESCRIPTIVE REPORT CONTROL RECORD		NO ALMOSTRERIC	NO I AN I SIND
MAP NO. TP-00896	JOB NO. CM-7413	ຄ	GEODETIC DATUM NA 1927		ORIGINATING ACTIVITY COASTAL	1 Mapping
	SOURCE OF	AEROTRI-	COORDINATES IN FEET	GEOGRAPHIC POSITION		
STATION NAME	INFORMATION (Index)	POINT	ZONE	φ LATITUDE λ LONGITUDE	FORWARD	D BACK
PTDGF 1929	Quad. 59141	_	χ=	φ 59 54 23.715	5 733.9	(1123.0)
	P. 1		y=	λ 141 24 11.152	2 173.4	(759.3)
1481 197/	Field	001366	χ=	\$ 59 51 13,872	2 429.3	(1427.6)
5714 correction 1914	P. 1	001612	<i>ή=</i>	λ 141 17 58.122	2 904.9	(29.2)
/ 201 midy	Field	¥	<i>=</i> χ	φ 59 49 48.601	1504.1	(352.8)
4/67 17/4	F. 1	0	=h	λ 141 13 27.800	2 1.433.2	(501.8)
ר אים יאסר מסשטאע	Bridge	101676	x= 654,113,370	φ	4113.4	(5886.6)
IARIOE, 1974 R.M. I	P. 2	TOTCOC	y= 2,125,772,903	γ	5772.9	(4227.1)
			<i>=</i> χ	ф		"
			=ħ	γ		
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			ys:	γ		
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			y≃	γ		
			χ=	-0-		
			<i>i i</i> = <i>i</i>	γ		
			<b>=</b> χ	ъ.		
			=ĥ	γ		
			=χ	ф		
			y	~		
COMPUTED BY A. C. Rauck, Jr.	r.	DATE/06/76	COMPUTATION CHECKED BY F.	. Mauldin	DATE 6/1	6/16/76
LISTED BY A. C. Rauck, Jr.	r.	DATE/06/76	LISTING CHECKED BY	. Mauldin		6/16/76
1		DATE 1/76	TE 1/76 HAND PLOTTING CHECKED BY J. Roderick	Roderick	DATE 7/C	7/02/76
1.4000		SHOPERSEDES N	AA FORM 76-41 2-71 FOLTION WHIS	H IS OBSOLETE		

SUPERSEDES NOAA FORM 76-41, 2-71 EDITION WHICH IS OBSOLETE.

#### COMPILATION REPORT

TP-00896

### 31. <u>DELINEATION</u>:

Delineation was by the Wild B-8 stereoplotter.

The 1:60,000 scale color photography was set on the Wild B-8 stereoplotter. The shoreline, interior details, and shallow limits were all delineated at that time. Points common to the color hydro-support ratios were selected and positioned to allow the confirmation of the compilation.

Photo coverage was adequate, but the stage of tide prevented compilation of the MLLW line or rocks. As the manuscript covers an uncharted area, the field editor and/or hydrographer should pay special attention to any alongshore and foreshore features not visible on the photographs.

#### 32. CONTROL:

See the attached Photogrammetric Plot Report dated December 1975.

#### 33. SUPPLEMENTAL DATA:

None.

#### 34. CONTOURS AND DRAINAGE:

Contours are not applicable to the project. Drainage was delineated by the Wild B-8 stereoplotter and by office interpretation of the photographs.

# 35. SHORELINE AND ALONGSHORE DETAILS:

Alongshore details were delineated by the Wild B-8 stereoplotter and by office interpretation of the photographs.

The mean high water line was delineated from the photographs.

#### 36. OFFSHORE DETAILS:

No unusual problems.

# 37. LANDMARKS AND AIDS:

No charted landmarks or aids were noted during compilation.

# 38. CONTROL FOR FUTURE SURVEYS:

None.

#### 39. JUNCTIONS:

See the attached Form 76-36B, Item #5, of the Descriptive Report concerning junctions.

# 40. HORIZONTAL AND VERTICAL ACCURACY:

Refer to Photogrammetric Plot Report.

#### 46. COMPARISON WITH EXISTING MAPS:

A comparison has been made with the following USGS Quadrangles: Topographic Series, ICY BAY, ALASKA, scale 1:250,000, dated 1961; and ICY BAY, ALASKA, scale 1:63,360, dated 1959.

#### 47. COMPARISON WITH NAUTICAL CHARTS:

A comparison has been made with the following National Ocean Survey Charts: No. 16016, scale 1:969,756, 13th edition, dated June 28, 1975; and No. 16741, scale 1:40,000, 5th edition, dated June 1, 1974.

### ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

# ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

Joanne Roderck Joanne Roderick Cartographer July 8, 1976

Approved:

Albert C. Rauck. Jr.
Albert C. Rauck, Jr.
Chief, Coastal Mapping Section, AMC

# ADDENDUM TO THE COMPILATION REPORT

TP-00896

# FIELD EDIT

Long. 59° 48' 45" due to seasonal changes. Moraine Reef at Lat. 141° 25' 00", Long. 59° 55' 00" will be delineated by hydro survey. Chart (16741) shows five rocks between Moraine Reef and the shoreline which were not located in the field. Field editor showed foul line with breakers and shallow along shoreline. This line was removed. (Page 344, Topo Manual.)

# TP-00896

# 49. NOTES FOR THE HYDROGRAPHER:

These are noted on the Master Film Field Edit Ozalid.

GEOGRAPHIC NAMES FINAL NAME SHEET CM-7413 (Icy Bay, Alaska) TP-00896

Gulf of Alaska Riou Bay Yahtse River Yana Stream (

Approved by:

Charles E. Harrington, Chief Geographer

NOAA FORM 75-74			,	U.S. DEPARTMENT OF COMMERCE	
(7–75)	PHO	TOGRAMMET	RIC OFFICE REVIEW	NOAA NATIONAL OCEAN SURVEY	
TP - 00896					
1. PROJECTION AND GRIDS	2. TITLE	<del></del>	3. MANUSCRIPT NUMBERS	4. MANUSCRIPT SIZE	
I PROJECTION AND GRADS			THE MANAGERS	THE MANAGEMENT STEE	
FPM	FP	M	FPM	FPM	
CONTROL STATIONS					
5. HORIZONTAL CONTROL STA THIRD-ORDER OR HIGHER A	TIONS OF CCURACY	6. RECOVERAB	LE HORIZONTAL STATIONS AN THIRD-ORDER ACCURACY	7. PHOTO HYDRO STATIONS	
FPM		(Topographic	NA	. NA	
8. BENCH MARKS	9. PLOTTING O	F SEXTANT	10. PHOTOGRAMMETRIC	11. DETAIL POINTS	
NA	l NA	L	FPM	FPM	
ALONGSHORE AREAS (Nautical	Chart Data)		l		
12. SHORELINE	13. LOW-WATER	RLINE	14. ROCKS, SHOALS, ETC.	15. BRIDGES	
**************************************					
FPM	NA		FPM	FPM	
16. AIDS TO NAVIGATION	17. LANDMARK	,	18. OTHER ALONGSHORE PHYSICAL FEATURES	19. OTHER ALONGSHORE CULTURAL FEATURES	
FPM	FF	PM	FPM	FPM .	
PHYSICAL FEATURES					
20. WATER FEATURES		21. NATURAL O	ROUND COVER	22. PLANETABLE CONTOURS	
FPM			NA	NA	
23. STEREOSCOPIC INSTRUMENT CONTOURS	24. CONTOURS	IN GENERAL	25. SPOT ELEVATIONS	26. OTHER PHYSICAL FEATURES	
NA	NA	1	NA	FPM	
CULTURAL FEATURES			•		
27. ROADS	28. BUILDINGS		29. RAILROADS	30. OTHER CULTURAL FEATURES	
FPM	FF	M	FPM	FPM	
BOUNDARIES					
31. BOUNDARY LINES  NA  NA  NA					
	H.		<u> </u>	NA .	
MISCELLANEOUS 33. GEOGRAPHIC NAMES		34. JUNCTION	S	35. LEGIBILITY OF THE	
FPM			FPM	FPM	
36. DISCREPANCY OVERLAY	37. DESCRIPTI	VE REPORT	38. FIELD INSPECTION	39. FORMS	
			PHOTOGRAPHS		
FPM	FI	М	NA NA	FPM	
40. REVIEWER	ruell		SUPERVISOR, REVIEW SECT	TION OR UNIT	
F. Margiotta	Juli	7/19/76	Albert C. Rauck.	Jr.	
	<del>}</del>	1/2///	123023 01 14402,		
41. REMARKS (See attached she) FIELD COMPLETION ADDITION		TIONS TO THE M	IANUSCRIPT		
	furnished by th	ne field complet		to the manuscript. The manu-	
COMPILER T. Margi	10 1 to 10 t	3/77	ISUPERVISOR		
Am Din	I)	יו וכ	albest C. Ra	auch.	
Reviewer Jim Byrd	<u>ч</u>	4/26/77	1	p.	
43. REMARKS					
Can Fram MA	260 T+	4 <del>0</del>			
See Form 76-	Joo, Item #	70.	•	_	

## FIELD INSPECTION

# TP-00896

There was no field inspection prior to compilation. Field work accomplished was limited to the recovery and identification of the horizontal control necessary for the aerotriangulation of the project.



FIELD EDIT: ICY BAY

JOB CM-7413

OPR-524-RA-76

MANUSCRIPT NO. TP-00892-00896

CHARLES K. TOWNSEND

CDR., NOAA

R.L. SPEER

CDR., NOAA

J.P. RANDALL

CAPT., NOAA

COMMANDING OFFICERS



#### INTRODUCTION AND METHODS

Field Edit for Icy Bay, Job CM-7413; OPR-524-RA-76, commenced on June 26, 1976 and was completed on September 15, 1976. One field unit performed the majority of all work while two units were used on occasion for the remainder of field work. The largest portion of shoreline verification and field edit location work was accomplished by walking the shoreline. The remainder from small boats paralleling the beach. Field edit is complete and thorough for five 1:20,000 scale manuscripts that cover Icy Bay.

Field edit operations began on the inshore side of Riou Spit and in Riou Bay on TP-00895 in order to facilitate commencement of hydrographic survey operations on H-9630. Work then progressed eastward on TP-00894 along the southern shore of Icy Bay thence around Gull Island and its surrounding shoals. This field edit was completed immediately to allow hydrographic survey operations to begin on H-9634. Field edit work then shifted back and forth between various sections of the shoreline dependent upon weather, sea, and ice conditions in the bay. The extensive floe ice and pack ice along the shoreline of TP-00892 and TP-00893 made work on these manuscripts piecemeal. Field edit is complete for these and the other three manuscripts. Rocks and foul areas were located and delineated by three point sextant fixes along the southern shore of manuscripts TP-00894 and TP-00895. A separate data package for this work is submitted as a separate part of the field edit data package. In conjunction with shoreline verification and location of dangers to navigation, questions from the Master Field Edit Sheet relating to the locations of fixed aids to navigation





and landmarks for charts were thoroughly investigated. One aid was located by geodetic observations during the first month of RAINIER combined operations.

All deletions, additions, and corrections to the final shoreline appear on the Master Field Edit Sheets and on the processed cronapaque photographs. With the exception of the field edit sextant location work, the Master Field Edit Sheets index all field edit work carried out. All discrepancies and questions listed on the Master Field Edit Sheets are completely and thoroughly answered on the Master. Proper references are included for each question answered. A reference to the sextant location package is also included on each manuscript where sextant work was performed. SPECIAL VIOLET ink field notes on the Master Field Sheets are items that have been verified by field edit. The photograph number for each item is given as a reference. SPECIAL RED ink was used on the Masters to indicate changes or additions found during field edit. Position or location references are included. Finally, those field notes inked in green are deletions from the manuscripts. References are included. All notes on the Master Field Edit Sheets which are verified on the cronapaque photographs include the description or an explanation of the feature verified and the photo number on which the item was located. All shoreline information on the smooth boatsheets for H-9630, H-9634, H-9649, and H-9635 which was verified by the field edit was inked in black. Changes, which include deletions, and (or) additions were inked in SPECIAL RED. Blue, the smooth boatsheet color for unverified items, was not used due to the completeness of verification of all manuscripts.

For a reference of photograph number - T-sheet Manuscripts, refer to





"Separates Following the Text". Height data on rocks was estimated to plus of minus 1 foot and the bluffs on the manuscripts to plus or minus 10 feet for those judged less than 200 feet, and plus or minus 50 feet for those judged greater than 200 feet. All items are referenced to Greenwich Mean Time.

#### ADEQUACY OF COMILATION

The compilation of the manuscripts for JOB CM-7413 were complete and adequate. Compilation of the MHWL was good. Numerous minor changes found by field edit are noted on the Master Field Edit Sheets and on the processed cronapaque photographs. The MLLWL was compiled where possible by hydrographic survey operations and is not discussed in this report. For further information on survey operations, <u>Descriptive Reports</u> H-9630, H-9634, H-9635, H-9649 should be consulted.

#### TP-00892

Field edit commenced on this manuscript on August 3, 1976, and was completed on September 15, 1976. The heavy brash ice in this upper portion of Icy Bay made shoreline work a section by section undertaking. Field edit is complete and thorough for TP-00892.

All non-floating aids to navigation and landmarks for chart investigations have been completed for this manuscript. None are being submitted. Refer to "Separates Following the Text"; Form-76-40's. Questions, discrepencies, and notes to the field editor have been completely answered with proper cross referencing.

The river delta, located at latitude 60° 05' 35"N, longitude 141° 13' 30"W, forms a more extensive delta than was previously compiled. The MHWL has been shifted seaward accordingly.

The protruding rock spit at latitude 60° 06' 30"N, longitude 141° 14' 22"W, was thoroughly searched for and verified to be non-existent. The recommendation is for deletion. Field observation was frequently required to determine on the photographs the difference between large rocks and dirt ladened pieces of glacial ice.

The seaward limits of the glaciers that are covered by this manuscript are generally accurate. The height of the glacier faces ranges from 80 to 160 feet above the water line. No changes were noted to the seaward limits of Tyndall Glacier. The center is heavily ladened with sediment. This sediment covered ice could be easily mistaken for fast rocky shoreline and bluffs. Two minor changes were made to the seaward limit of Yahtse Glacier (refer to Master Field Edit Sheet).

Bluffs cover an extensive portion of this manuscript. These bluffs have been annotated on the Master Field Edit Sheet. The bluffs are continuous. There is no single point that would serve as a landmark; however, they do define the entire Tyndall Glacier fiord and it is recommended that the bluffs be charted.

The small island located at latitude 60°05'05"N, longitude 141°20'32"W was verified. The region between the island and the mainland is foul with small rocks, and to transit is dangerous. Two rocks were located in the general vicinity of the island, The rocks present a definite hazard to small boat navigation.

8

An uncompiled rock spit was located in the area near latitude  $60^{\circ}05'06"N$ , longitude  $141^{\circ}20'52"W$ . The surrounding water is shallow and hazardous. Refer to notes on the Master Field Edit Sheet.

The small inlet, located at latitude 60°05'25"N, longitude 141°21'16"W, is actually a rock and gravel indentation in the surrounding shoreline, with a pond that varies in size, set back approximately 30 meters from the shoreline.

A large delta exists in the region bounded by latitudes 60 07'00"N and 60 06'00"N on the north and south respectively, and longitudes 141 21'30"W and 141 22'25"W on the east and west respectively. The delta is more extensive than previously compiled and is so shown on the Master Field Edit Sheet. The southeastern portion of this region contains sand flats landward from the MHWL that are so laced with runoff waters that the sand is in suspension and may be considered quicksand.

#### TP-00893

Shoreline verification for this manuscript began on July 28, 1976 at the junction with TP-00894 at latitude 60°03'54"N. Work was completed during ship recon hydro operations in the upper Icy Bay region on September 15, 1976, at the junction with TP-00892. As with all work in upper Icy Bay, progress was slow and dependent on ice conditions. Field edit is complete and thorough for TP-00893.

Investigations for non-floating aids to navigation and landmarks for charts were carried out. There are none being submitted for charting purposes. Refer to "Separates Following the Text", Form 76-40's. Questions,



discrepancies, and notes to the field editor have been completely answered.

Proper source referencing is included.

The majority of the upper bay covered by this manuscript is bluff lined. All information can be referenced on the Master. Except for breaks at glacier faces and large runoff deltas, the bluffs are continuous in nature but varying in height. No portion of the bluffs is distinctive enough for submission as a landmark for charts on the form 76-40's. The bluffs do distinguish the entire upper shoreline of the bay and it is recommended that they be delineated. Reference the Master and corresponding Processed Cronapaque Ratios.

The questionable rocks located at latitude 60°04'12"N, longitude 141°26'30"W, were thoroughly searched for and shown to be non-existant. It is recommended that they be deleted. It is difficult to distinguish sediment ladened ice from large rocks on the photographs.

A large delta is located at latitude 60°04'05"N, longitude 141°27'00"W, The delta is more extensive than that compiled on the manuscript and the MHWL has been shifted seaward. The composition of this delta is fine sand and gravel, and the shoreline and near shore gradient was steeper than other deltas inspected. Thus a compiled shallow region was not deemed necessary.

The small island at latitude 60°04'20"N, longitude 141°28'48"W was verified. With the exception of a small depositional beach on the southeast corner, there were no adjustments to the compiled MHWL.

The seaward limits of the four sections of Guyot Glacier that are covered by this manuscript are accurate and only one minor revision was necessary

at latitude 60°04'35"N, longitude 141°31'20"W. Heights of the glacier faces above the water line range from 30 to 200 feet. The region of shore-line at latitude 60°04'35"N, longitude 141°31'20"W that is compiled as fast, is in actuality a ribbon of glacial ice heavily ladened with sediments. Its dirty color makes it appear as fast rocky shore.

Isolated glacial ice remnants occur in two locations on this manuscript. One is centered at latitude 60°05'12"N, longitude 141°32'01"W.

The other is located at latitude 60°07'11"N, longitude 141°30'34"W. Heavy braided runoff to the bay comes from both. These remnants will likely melt away and expose rock and gravel shore (refer to the Master Field Edit Sheet).

The small building shown in the southeast region on the manuscript is present but is not suitable as a landmark for charting purposes. No form 76-40 is being submitted. It is a small camper's cabin and is obscured from the shore and seaward. It should continue to be shown on the chart as a small cabin as it does exist and may serve as a shelter.

#### TP-00894

Shoreline verification for this manuscript began at the junction with the small section of TP-00896 at longitude 141°25'00"W and proceeded eastward around Gull Island to position 59°56'20"N, 141°17'05"W. Field edit was undertaken initially to allow for the commencement of hydrographic survey operations on H-9634. The remainder of the verification of the shoreline for this manuscript was piecemeal due to varying ice, sea, and weather conditions in the bay. All investigations for non-floating aids to navigation and landmarks for charts have been completed. None are submitted for this manuscript.

Location of rocks and delineation of foul limits using three point sextant fixes was accomplished for the southern shore of this manuscript and for Gull Island and its surrounding shoals. It is recommended that they be accepted for charting purposes (refer to the Field Edit Sextant Location Package, containing field sounding volumes, visual master and corrector tapes for automated plotting, geographic position computations for each fix, and plotted boatsheets with position numbers).

Numerous minor revisions were made to the compiled MHWL, foreshore features, and inshore details. The most pronounced changes occurred in the area just south of the Caetani and New Yahtse River Deltas bounded by the following: Latitude 59°58'00"N on the north, 59°57'00"N on the south, 141°16'00"W on the east, and 141°17'30"W on the west. This region is highly affected by tide action (refer to the Master Field Edit Sheet for more information on changes in compilation).

#### TP-00895

Shoreline verification for this manuscript began on Riou Spit and continued south then east around Riou Bay. This edit was undertaken first to allow for the commencement of hydrographic survey operations. Later in the summer shoreline edit was resumed on this manuscript at its jungtion with TP-00894 at latitude 60 00 00 N, and progressed southwest to the manuscript and the job limits at latitude 59 57 35 N. Field edit is complete and thorough for this manuscript.

All investigations for non-floating aids to navigation and landmarks for charts have been completed. One aid is being submitted for charting



purposes. Icy Bay Light along the north central shore of the bay was located as per instruction by third order geodetic survey methods (intersection). For further information reference the separates of this report and Horizontal Control Report; OPR-524-RA-76.

Location of rocks, dead heads, and delineation of foul areas using three point sextant fixes was accomplished from Riou Spit to the manuscript limits at latitude 59 54'20"N. It is recommended that the sextant delineated foul areas supersede the photo delineated foul areas when the sextant delineated foul areas are the seaward of the two. The Field Edit Sextant Location Data Package contains field sounding volumes, visual master and corrector tapes for automated plotting, geographic position computations for each fix, and plotted boatsheets with position numbers.

The rock compiled at geographic position 59°53'47"N x 141°25'52"W is actually an exposed portion of a man made spit. It was probably used for landing craft and barges transporting supplies to the now abandoned mining operations just inshore. It is recommended that this feature be charted as a rock spit.

The MHWL of Riou Spit is constantly changing due to erosion and deposition of glacial sediment. Minor revisions were made by field edit to the MHWL and to the shallow and foul breaker zone of Riou Spit. It is recommended that these changes be accepted for charting purposes.

The north shore of TP-00895 shows numerous but minor revisions to the compiled MHWL and offshore shallow and foul areas. Reference the Master Field Edit Sheet. It is recommended that all field changes be accepted for charting purposes.

The pier at Icy Bay Logging Camp landing is earth filled and log lined to allow heavy machinery to transfer logs to waiting barges. Two small buildings are located at the head of the loading jetty. The entire area is covered with logs piled and waiting transport.

The "parking area" compiled at position 59°58'07"N x 141°38'15"W was investigated. It is not a parking lot but a gravel trailer court that serves as the Icy Bay Lumber Camp headquarters and residences. Permanent buildings are noted and referenced on the Master Field Edit Sheet. The gravel landing strip just west of the logging camp was also verified. It is recommended that all features be charted as noted on the Master Field Edit Sheet.

The region of the chart compiled as Guyot Bay at position 59 57'25"N x 141°42'00"W is not a small bay on the northern side of Icy Bay. It is now a mud and sand flat with a small stream running from east to west then south into Icy Bay. During periods of heavy runoff, the stream floods, covering the entire flat. It is recommended that this region be delineated as shown on the Master Field Edit Sheet. The conditions found during the field inspection are believed to prevail during the majority of the year.

The small charted building on the north side of the above mentioned flats was investigated. It was found to be a small abandoned miner's shack. It is not visible from sea and should not be charted as a landmark. It should be charted as it does exist and could serve as a shelter.

#### TP-00896

Shoreline verification for this manuscript began at the junction with TP-00895 at longitude 141°25'00"W and continued southeast to the manuscript

and job limits at longitude 141°05'00"W. All investigations of non-floating aids to navigation and landmarks for charts have been completed. None are being submitted for this manuscript (refer to "Separates", form 76-40's). Field edit is complete for this manuscript.

Location of rocks and delineation of foul limits using three point sextant fixes was accomplished for the portion of this manuscript covering Riou Bay. It is recommended that they be accepted for charting purposes and that the sextant delineated foul areas supersede the photo delineated foul areas when the sextant delineated foul areas are seaward of the two (refer to the Field Edit Sextant Location Package, containing field sounding volumes, visual master and corrector tapes for automated plotting, geographic position computations for each fix, and plotted boatsheets with position numbers).

The remaining shoreline shows a general shift seaward of the MHWL from that compiled on the manuscript. Changes and references are noted on the Master Field Edit Sheet. This shoreline is composed of fine sand.

The Yahtse River parallels a sand ridge before breaking through to the Gulf of Alaska. Behind the ridge the river has formed an aggraded area that during part of the tidal cycle pools and acts as an interior drainage.

During the lower tides the river erodes the aggraded area forming new and continually shifting braided channels that rejoin in a single channel before entering the Gulf.

The mouth appears as depicted except for a minor revision to the MHWL and the second outlet shown no longer exists. Though not observed it is likely the outlets are altered considerably by major storms. There is no build-up of river deposits at the mouth. It is recommended that the area be charted with the changes as annotated.

#### ADDITIONAL INFORMATION

Location of rocks, deadheads, and delineation of foul areas was accomplished as an integral part of the field edit for JOB CM-7413. Three point sextant fixes with check angles were taken. The area covered by sextant work includes portions of TP-00894, TP-00895, and TP-00896, and extends from Riou Spit around Riou Bay and east to the southeast corner of Icy Bay. Gull Island and its surrounding shoals are also included in the area covered by sextant location and delineation work. This area was chosen for this special consideration because it is shoaler and more complex in nature than the remainder of the bay and it is an area of anticipated development.

A separate field edit sextant location package is being submitted as a part of the overall field edit data package. The package includes the following items:



- Field sounding volumes containing all positions. Descriptions and small drawings to aid compilation are included.
- 2. Visual Master and Corrector Tapes with corresponding printouts for all final positions, separated by Julian Days.
- 3. Plotted 1:10,000 position boatsheets for RA-10-3A, 3B, 4A-76.
- 4. Geographic position computations for each fix. Position numbers are noted, and latitudes and longitudes computed are annotated by the corresponding position number in the field sounding volume.
- Printouts of special tapes (Boatsheet Parameters) that would be of assistance in data interpretation and processing are also included.

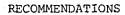
It is recommended that all these rock and deadhead positions be accepted for charting purposes. Foul areas delineated by sextant fixes should be accepted in all cases over the photogrammetrically delineated foul areas where they fall further to seaward (reference the package for complete information). For copies of printouts of the Visual Master and Corrector Tapes, and the geographic position computations, refer to the "Separates following the text".

#### DATA PROCESSING

The following is a list of PDP-8/e computer programs and version dates used in the processing of the field edit sextant location package for JOB-

CM-7413:	RK 201: GRID, SIGNAL, AND LATTICE PLOT	7/12/75
•	RK 212: VISUAL STATION TABLE LOAD	4/01/74
	RK 215: VISUAL NON-REAL TIME PLOT	8/16/74
	RK 300: UTILITY COMPUTATIONS	2/10/76
•	AM 602: ELINORE - LINE ORIENTED EDITOR	5/21/75





Field Edit Manuscripts were received at various dates during the survey. It is recommended that every possible effort be made to send the complete package at one time. This aids both in continuity and in planning of field work. No further recommendations are deemed necessary.

Respectfully submitted;

John C. Osborn Jr.

LTJG; NOAA

#### REVIEW REPORT TP-00896

#### SHORELINE

January 5, 1979

# 61. GENERAL STATEMENT:

See Summary which is page 6 of the Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS:

Not applicable.

63. COMPARISON WITH MAPS OF OTHER AGENCIES:

Not applicable

# 64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

A comparison was made with the verified copy@of H-9630. No significant differences were noted.

#### 65. COMPARISON WITH NAUTICAL CHARTS:

A comparison was made with Chart 16741, 1:40,000 scale 6th Ed. May 28/77. No significant differences were noted.

# 66. ADEQUACY OF RESULTS AND FUTURE SURVEYS:

This map complies with project instructions, and meets the requirements for Bureau Standards and National Standards of Map Accuracy.

Submitted by:

Approved for forwarding:

Chief Photogrammetric Branch, AMG

" ( Werrau

Chief Photogrammetric Branch

Chief Coastal Manning Division

## PROJECT CM-7413 MATERIALS ON FILE

#### FEDERAL RECORDS CENTER

Field Edit Photographs
Bridging Photographs
Field Edit Ozalids (Discrepancy Prints)
Project Completion Report
Three Field Edit Position Plots

#### BUREAU ARCHIVES

Registered Copy of Each Map

## GEODESY

Geodetic Records Control Station Identification Cards Recovery Cards

#### MARINE CHART DIVISION

Chart Maintenance Print For Each Map Forms 76-40

#### OFFICE OF GEOGRAPHER

Geographic Name Standards

#### REPRODUCTION DIVISION

Negative of Each Map