10274

Diagram No. 8802-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. RA-10-2-88

Registery No. H-10274

LOCALITY

State Alaska

General Locality Alaska Penninsula

Sublocality Northern Chiginagak Bay

1988

CHIEF OF PARTY
CAPT J.C. Albright

LIBRARY & ARCHIVES

DATE January 2, 1990

☆U.S. GOV. PRINTING OFFICE: 1985—566-054

10274

GP
CHT.
16568 106,600
16013 969,761
1601 1,023,188
16006 1,534,076
531 3,500,000
500 3,500,000
? 16560 ——— New Chart

NOAA FORM 77-28 (11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC TITLE SHEET

REGISTER NO.
H-10274

FIELD NO.
RA 10-2-88

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

State Alaska

General locality Alaska Peninsula

Locality Northern Chiginagak Bay

Scale 1:10,000 Date of survey May 23 - September 4, 1988

Instructions dated March 6, 1987 Project No. OPR-P180-RA

Vessel RAINIER S221 (2120), Launch 2123, 2124, 2125 2126

Chief of party CAPT John C. Albright, NOAA

Surveyed by LT Marlene Mozgala, LT(jg) John Lovell, ENS Philip Hill, ENS Philip Meis, ENS Mark Larsen, ENS Keith Smith, ENS Carl Groeneveld, ENS Guy Noll

Soundings taken by echo sounder, ~~hand lead, pole~~ DSF-6000N; pneumatic depth gage

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by: ~~Protracted by~~ Gordon E. Kay Automated plot by PMC Xynetics Plotter

Verification by Matthew Sanders

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW and tenths of fathoms

REMARKS: All times are UTC. Revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

AWOIS/SURF MSM 1/4/90

SC 3-27-97

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

U.S. GOVERNMENT PRINTING OFFICE: 1986 - 652-007/41215

PROGRESS SKETCH

OPR - P180 - RA
HYDROGRAPHIC SURVEY
SOUTHERN ALASKA PENINSULA
MAY 21 -AUGUST 31, 1988
NOAA SHIP RAINIER
JOHN C. ALBRIGHT, CAPT., NOAA
COMMANDING
SCALE OF CHART 16568

MAY	JUNE	JULY	AUG.	SEPT.	
12.9	28.3	20.3	14.8		SQ. N. M. SOUNDING
312.6	1137.9	818.9	753.5		L. N. M. SOUNDING
114	839.0	879.4	699.5		L. N. M. MISC. DISTANCE
—	274	159	57		BOTTOM SAMPLES (GRAB)
7	5	2	—		ELEC. CONTROL STATIONS ⊛
—	9	3	2		TEMP DEPTH SOUND VEL CAST
—	1	—	1		NANSEN CAST
1	—	—	1		TIDE GAGES ○
—	17	3	10		WATER SAMPLES ANALYZED
1	2	1	—		GEODETIC CONTROL STATION EST. △
—	—	—	—		SQ. N. M. SIDE SCAN SONAR
—	—	—	—		L. N. M. SIDE SCAN SONAR

RA-10-2-88
H-10274

RA-10-1-88
H-10273

RA-10-3-88
H-10280

RA-10-4-88
H-10281

MAY 1988

JUNE 1988

AUGUST 1988

JULY 1988

AGRIPINA BAY

FORT WRANGELL

DAVID I.

CAPE PROVIDENCE

NAVY I.

CHIGINAGAK BAY

NAKALILOK BAY

CAPE KUYUYUKAK

AIUGNAK COLUMNS

CENTRAL I.

UGAIUSHAK I.

57° 00'

56° 30'

154° 50'

154° 40'

154° 30'

Descriptive Report to Accompany Hydrographic Survey H-10274

Field Number RA-10-2-88
Scale 1:10,000
1988

NOAA Ship RAINIER
Chief of Party: Captain John C. Albright

A. Project

This basic hydrographic survey of the southern Alaska Peninsula was completed as specified by Project Instructions OPR-P180-RA (changed from OPR-P180-FA in Change Number 3) dated March 6, 1987, Change Number 1, dated April 14, 1987, Change Number 2, dated September 2, 1987, and Change Number 3, dated April 22, 1988. The survey is designated sheet J on the revised sheet layout for the project dated September 16, 1987.

This survey is one in a series which will provide contemporary hydrographic data for existing and proposed 1:80,000-scale nautical charts that cover a portion of the southern Alaska Peninsula. The project responds to requests from the U.S. Coast Guard, Alaska congressional delegates, NOAA, Defense Mapping Agency, Fishing Vessel Owners Association, and Kodiak Shrimp Trawlers Association.

B. Area Surveyed

This survey is located in the central portion of the southern Alaska Peninsula, seventy ~~nautical miles~~ (NM) west of Kodiak Island and six ~~miles~~ (NM) west of Cape Providence. The survey covers the coastal waters of northern Chiginagak Bay which separate Cape Providence and Cape Kuyuyukak. The survey is bounded to the north and west by the mainland, to the south by latitude 56°57'00"N, and to the east by longitude 156°40'45"W 36".

Six rugged islands, several hundred meters in length, lie within the survey area. All are nameless with the exception of the largest, Derickson Island, which lies at the entrance to the bay's northern limit. The islands, reefs, submarine ridges and

pinnacles rise abruptly from the bottom due to the orogenic process+ responsible for the region's terrain; the bathymetry is consequently extremely irregular. Most of these features are narrow and long (typically 25 X 100 meters).

The shoreline is primarily rocky and rugged, except for a sandy delta northwest of Derickson Island which is formed by a large stream flowing from Mount Chiginagak. Cliffs rise along the eastern shore over one hundred feet above the water's edge. Along the northern and western shores, tundra-covered foothills slope down and abruptly end, exposing rock outcrops, ledges, and boulders.

Bear, moose, and other wildlife live within the foothills and along the shores. The waters support a variety of fish species. Although there are no fishing camps or villages within the vicinity, fishing vessels operated in northern Chiginagak Bay when various fishing seasons were open. Several large fish-processing ships also anchored in the bay during the time of survey. The nearest port of any size is Kodiak, 150 ~~miles~~ NM ENE of the survey area.

Data acquisition was conducted from May 23 to September 4, 1988 (DN 144 - DN 248).

C. Sounding Vessels

All data were acquired from RAINIER and four automated survey launches, as shown below:

Vessel	EDP No.	Operation
RAINIER	2120	Plessey/Nansen casts
RA-3	2123	Hydrography
RA-4	2124	Hydrography
RA-5	2125	Bottom samples, Hydrography
RA-6	2126	Hydrography, Shoreline Verification

No changes to the standard sounding configurations were necessary.

D. Sounding Equipment and Corrections to Echo Soundings

All automated survey launches were equipped with Raytheon DSF-6000N echo sounders as shown below. The echo sounders were operated in the HIGH + LOW (HIGH DIGITIZED) function, using manual gain controls on both high and low frequencies to obtain the best analog trace. Soundings were recorded in fathoms and tenths of fathoms. Two-fathom bar checks were conducted and recorded daily, using both the LOW and the HIGH + LOW (HIGH DIGITIZED) functions, to

+ Briefly, the subduction of Pacific plate under the Kula plate forced up molten rock, leaving an abundance of dikes, pinnacles, and ridges. All features observed are metamorphosed basaltic intrusives and extrusives; no sedimentary rock formations were sighted within the survey area.

ensure the echo sounders were functioning properly. Echo sounders were operated in accordance with the Provisional Instructions "RAYTHEON DSF-6000N ECHO-SOUNDER OPERATING AND PROCESSING INSTRUCTIONS," dated July 5, 1983, and the N/CG2 memorandum "DSF-6000N Depth Errors as a Function of Receiver Gain," dated May 23, 1986.

Raytheon DSF-6000N Echo Sounders

Vessel	Serial Number	Day Numbers
2123	A103N	144-160
	A119N	193
	A117N	206-208
2124	B046N	146-216
2125	A119N	147-169
	A103N	173-192
2126	A114N	147-231

The echo sounders functioned properly, with occasional minor problems. The table above shows the dates various echo sounders were changed in vessels 2123 and 2125 due to malfunctions.

The echo sounders were continuously monitored during data acquisition. All sounding data were scanned at least two times, not only to ensure all significant peaks and deeps were inserted, but also to verify the digitized depths.

The echo sounders failed to track properly at times while running over extremely steep, irregular bottoms. Running at minimum speeds usually alleviated this problem, and overall data quality was not compromised, but marginal analog traces could sometimes not be avoided. For further information concerning echo sounder performance, see the 1988 Corrections to Echo Soundings Report for OPR-P180-RA.

Diver-obtained least depths were determined with a 3D Instruments pneumatic depth gage (S/N 8504192N). The gage was operated in accordance with Hydrographic Survey Guideline #55, and was last calibrated March 15, 1988 by the Pacific Operations Group (N/OMA 1214). In addition, field system checks were performed each day the pneumatic depth gage was used.

Corrections to Echo Soundings

Corrections to echo soundings were determined for heave, static draft, velocity of sound through water, settlement and squat, and predicted tides. These correctors are eventually to be applied to all echo soundings. All correctors except settlement and squat have been applied to soundings on the final field sheets; settlement and squat correctors will be applied at the Pacific Marine Center during ~~verification~~ PROFESSIONAL. * Variations in the instrument initial, stylus arm length, and belt tension are not present with the DSF-6000N.

* CORRECTORS APPLIED TO THE SMOOTH SHEET DATA.

Heave

Corrections for heave were applied while scanning the echograms. The scanning technique used in comparing the analog trace with the digital record was chosen to eliminate fluctuations greater than 0.2 fathom resulting from sea action. In certain areas, the extremely irregular bottom topography made it sometimes difficult to determine which fathogram features were caused by sea action.

Static Draft

Transducer depths of 0.3 fathom were measured for all launches on March 23, 1988 by divers using a large metal T-square. The draft measurements were made at PMC with the fuel tanks averaging 3/4 full. For each launch, measurements with no people and with four people aboard were made, and the average computed. The transducer depths of 0.3 fathom agree with RAINIER historical records. Transducers are mounted starboard, midships, in a location such that all sounding corrections apply to both the low- and high-frequency echo-sounder signals.

Sound Velocity

Corrections for the velocity of sound through water were determined from six Plessey SVD casts conducted during the project (see table below).

ALL CASTS PLOT OUTSIDE SHEET LIMITS.

Cast No.	Cast Depth (m)	Day Number	Geographic Position
Nansen	150	153	56°58.2'N, 156°27.6'W
1	200	153	56°58.2'N, 156°27.6'W
3	104	166	56°57.9'N, 156°27.3'W
9	200	181	56°58.2'N, 156°27.2'W
10	150	195	56°58.1'N, 156°26.8'W
12	225	206	56°58.2'N, 156°27.3'W
13	170	220	56°56.9'N, 156°38.2'W

The Plessey Sound Velocity Sensor, S/N 5652, was connected to a Hewlett\Packard 5326B Universal Frequency Counter, S/N 1312A02159. The sound velocity sensor was last calibrated at the Northwest Regional Calibration Center in Bellevue, Washington on April 4, 1988.

One Nansen cast was performed to ensure the Plessey sensor was operating properly. The sound velocities determined by the two methods showed very good agreement. Surface water temperatures and samples were obtained during each Plessey cast as additional checks on the Plessey system.

In accordance with Change No. 3 to the Project Instructions, RAINIER personnel tested and evaluated a new sound velocity computation program developed by N/CG21. Results of the test agreed well with the traditional computation method

outlined in Section 4.9.5.2 of the Hydrographic Manual. A report documenting results was forwarded to N/CG24 on July 18, 1988. The new velocity corrector program, VELOCITY, was used to compute velocity correctors as there was no significant difference in results between the two methods.

The surface water temperature and the corresponding sound velocity increased continuously during the survey. The following table indicates the casts used to compile each velocity table and the dates that each velocity table is applied. Velocity table numbers 1 and 2 are based on the means of the casts shown below.

Velocity Table No.	Casts	Applicable DN
1	1,3	144-172
2	9,10	173-195
3	12	201-210
4	13	216-231

Velocity correctors were applied at 0.1-fathom increments for each velocity table. The velocity tapes have been forwarded with the survey data; tape listings are included in ~~Appendix IV of this report.~~ All supporting data for the Plessey and Nansen casts can be found in the 1988 Corrections to Echo Soundings Report for OPR-P180-RA. SEPARATES Filed with Survey Records

Settlement and Squat

Settlement and squat correctors were determined for the automated survey launches at Shilshole Bay, Washington, on March 30, 1988. Misreadings of the level for vessel 2123 necessitated a rerun of the settlement and squat correctors for that vessel in Farragut Bay, Alaska on May 5, 1988. All tests were conducted over a hard bottom in depths well exceeding seven times the vessels' drafts. Both seas and wind were calm. Observations were made using a Zeiss Ni2 leveling instrument (S/N 87102) to a rod held vertically on the deck of each launch, almost directly over the transducer.

Ten level readings were made at each speed tested, and the average taken, to compute the correctors. Tide staff readings were taken concurrently with each set of level readings, and all tidal height differences were normalized to the tidal height of the dead-in-the-water level readings before the correctors were computed.

Soundings on the final field sheets are not corrected for settlement and squat. TC/TI tapes for each automated sounding vessel have been prepared and submitted with this survey~~(Appendix IV)~~. Records of settlement and squat data are included in the 1988 Corrections to Echo Soundings Report for OPR-P180-RA.

SEPARATES Filed with Survey Records

SETTLEMENT AND SQUAT HAS BEEN APPLIED TO THE SOUNDINGS ON THE SMOOTH SHEET.

Predicted Tides

All survey soundings are reduced to MLLW, based on predicted tides at the Kodiak, Alaska reference tide station (945-7292) and the tidal zone correctors provided in the Project Instructions. The zone correctors for the Kodiak tide

station are a height correction ratio of "x1.28" and time corrections of plus 20 minutes for high water and plus 40 minutes for low water. Field tide records have been forwarded to N/OMA 121, in accordance with Hydrographic Survey Guideline #50 and the PMC OPORDER. ✓

A tide station was established at Derickson Island (945-8522) and maintained by RAINIER personnel. The Field Tide Note for this tide station is ~~included in Appendix H of~~ this report. The request for approved tides has been forwarded to N/OMA 121 ~~(Appendix IX)~~. Attached ✓ SEPARATES Filed with Survey Records.

E. Hydrographic Sheets

All field sheets were prepared aboard RAINIER, on a Houston Instrument Complot DP-3 roll plotter, using the PDP8/e HYDROPLOT system and program RK201, "Grid, Signal, Lattice Plot". Program RK201 draws a Modified Transverse Mercator projection. ✓

The final field sheets, two 1:10,000-scale projections, are designated RA-10-2N-88 and RA-10-2S-88. Mainscheme splits were run over the entire survey area in order to better define the bathymetry and to locate shoals. Several shoals were developed with additional 25-m and 50-m splits. These developments are plotted on one 1:10,000-scale sheet and three 1:5,000-scale expansion sheets (Expansions #1-3). As all data could not be added to the sheets without compromising the legibility, each final field sheet is accompanied by a 1:10,000-scale D.P. overlay. Parameter tape listings are included in ~~Appendix I of this report.~~ ✓ SEPARATES Filed with Survey Records

Depth contours are drawn on the final field sheets in accordance with the Hydrographic Manual, except in areas of steep bathymetry where all prescribed contours could not be drawn without degrading the legibility of the sheets. SEE Evaluation Report section J.

In plotting the final field sheets, overprints were removed by various techniques. The pen was manually lifted and special corrector tapes were made to edit out individual soundings; these tapes have not been submitted.* Some soundings, including least depths, have been transferred by hand to the final field sheets from NSP data. ✓

* During Processing deeper soundings were automatically excessed.

All field sheets, accompanying field records, and this Descriptive Report are being forwarded to the Pacific Marine Center (N/MOP 21) for verification. ✓

F. Control Stations

The following eleven geodetic stations were used to control this survey:

Station	Order, Class	Date Established	Signal No.
AIUGNAK*	1,I	1944	101
CHIG*	2,I	1944	102
DERICK*	3,I	1988	104

✓

FOUL*	1,I	1944	103
KAYAK*	3,I	1988	111
PRO*	2,I	1944	100
PR-16	3,I	1988	106
PR-17	3,I	1988	105
PR-54*	3,I	1988	110
RADIAL*	3,I	1988	112
CAL ROCK NORTH*	3,I	1988	113

* Stations located offshore on islands.

Positions for AIUGNAK, CHIG, FOUL and PRO are from the NGS data base. All existing control stations were recovered in accordance with methods stated in Section 3.1.4 of the PMC OPORDER. DERICK, KAYAK, PR-16, PR-17, PR-54, RADIAL and CAL ROCK NORTH were positioned by traverses by RAINIER personnel; the field positions are not adjusted. Stations PR-16, PR-17 and PR-54 were originally aero-triangulation points. Geographic positions are based on the North American Datum of 1927 and the Clark Ellipsoid of 1866.

All stations meet or exceed Third-order, Class I standards for positioning. Further information can be found in the 1988 Horizontal Control Report for OPR-P180-RA.

G. Hydrographic Position Control

All soundings were located using Motorola's Mini-Ranger III microwave positioning equipment in the HYDROPLOT range-range acquisition mode.

Positioning Equipment

Five Mini-Ranger console-R/T pairs and twelve shore transponders were used during the survey. The following table summarizes the vessel and console-R/T pair configurations:

Day Numbers (DN)	Vessel EDP No.	Vessel Name	Console-R/T Serial No.
144-160	2123	RA-3	711/B1405
193-195			720/911615
196-208			702/B1089
147-216	2124	RA-4	30269/B1388
147-161	2125	RA-5	720/911615
168-192			711/B1405
147-231	2126	RA-6	715/911102

The table below lists the shore equipment used during this survey:

Transponder Serial Number	Code
G3510	A (before DN 176)
C1789	A (after DN 201)
E2868	B (through DN 161)
E2869	B (after DN 161)
G3500	C
911634	D
F3256	E
G3501	F
B1412	0
C1883	1
B1106	2
911635	3

Baseline Calibrations

Five baseline calibrations over water were conducted in accordance with PMC OPORDER 3.3.1 (see table below). Calibration data and descriptions of the baselines can be found in the 1988 Electronic Control Report for OPR-P180-RA.

Location	Distance	DN	Description
Farragut Bay, AK	1446 m	125	Read Island to mainland Alaska
Kodiak, AK	1626 m	148-149 162	Bell Flats Hwy to NOS Tidal BM
Chiginagak Bay, AK	1322 m	196	Mainland to island N of Derickson Is.
Seattle, WA	1312 m	082	Sandpoint pier to Matthews Beach

The Farragut Bay calibration, using console-R/T pairs 711/B1405 and 720/911615, produced opening calibration correctors for transponder codes A, B (S/N E2868), 1 (S/N C1883), and 3. The correctors for 711/B1405 were incorrectly computed and used until the Kodiak Calibration on DN 147-151; the true correctors differ by 3 m or less (see Electronic Control Report for OPR-P180-RA, 1988). Closing calibrations for all codes ~~will~~ occurred in September over the Matthews Beach, Seattle baseline, ON DN 265.

SEE EVALUATION REPORT SECTION 1

System Check Procedures

In accordance with PMC OPORDER 3.3.1.2, critical system checks were made at least weekly and noncritical checks were made daily when critical checks were not acquired. RA-5 (VESNO 2125) did not regularly perform system checks on days of bottom sample collection, but did so on days bracketing the non-calibrated periods.

Theodolite intersection critical calibrations were often used for checking the Mini-Ranger III system. The following Wild T-2 serial numbers were used: 73226, 57259, 85637, 75599E, and 68648.

RAINIER personnel installed a Third-Order Class I position for fixed-point critical calibration at CAL ROCK NORTH (commonly known as "Cal Rock") within Chiginagak Bay. Transponders located at stations DERICK, PRO, PR-16, and PR-17 were successfully calibrated at this site. Another fixed-point calibration site, CAL ROCK SOUTH, was located on the shore of an island within the bay during a theodolite calibration. Launches used this site for checking transponder codes at stations PR-54 and KAYAK.

A range-visual critical systems check site was established on DN 189. Banners were constructed at stations FOUL, CHIG and KAYAK, and coxswains steered the range created by CHIG and FOUL to a point where a known sextant angle between the range and station KAYAK occurred. Transponders located on stations AIUGNAK, CHIG, FOUL, KAYAK, and RADIAL were critically calibrated using this method. The following Tamaya sextants were used:

RA-3	RA-4	RA-5	RA-6
T3859	T2974	T3733	T3009
T2975	T3722	T2985	T3862

Noncritical system checks were conducted using the launch-to-launch or baseline crossing methods. In general, noncritical system checks fell within the allowable rejection limits and no systematic discrepancies with opening baseline correctors were observed except as discussed below.

Problems and Unusual Position Configurations

Console 711 was returned to Seattle on DN 200 due to its proven failure to remain calibrated. Some drift in the console was evident during critical systems checks with transponder codes 1, 2, and 3; baseline calibrations generally confirmed the drift with these codes.

The correctors from each calibration were applied to data up to the day of the next calibration. The same correctors should be applied to the smooth sheets except as noted above and in cases where the difference between two consecutive baseline calibrations exceeds 4 m. In accordance with PMC OPORDER 3.3.1.3, prorated correctors have been computed at 2-m increments for console-R/T 711-B1405 as the correctors for codes 2 and 3 exceeded the 4-m difference between baseline calibrations. The hydrographer recommends the following prorated correctors be applied to data acquired with the console-R/T unit mentioned above:

Console: 711 R/T: B1405

VESNO	Day Number	Transponder	Prorated Corrector
2123	144	Code 3	-6m
	160	Code 2	~~-6m~~ 8m
	144	Code 1	+3m
2125	174-175	Code 3	-3m
	190	Code 3	-7m

Revisions to Field submitted data

Separates Filed with Survey Records
Appendix XII contains the Abstract of Baseline Calibration Results used to determine the effective dates of correctors.

Null zones and erratic ranges were occasionally experienced due to the destructive interference of direct and reflected microwaves. Time and course interpolations were used during data processing to correct the position of soundings taken when launches approached null zones (as indicated by the launches' erratic steering needles and automated plotters).

A small amount of survey positioning data was acquired with signal strengths one unit below the computed cutoff values. The use of these signal strengths may result in range discrepancies with baseline correctors of less than 5 meters, less than 0.5 millimeter at the scale of the survey, and do not cause significant degradation of positional quality.

SEE EVALUATION Report Section 2. for discussion on WEAK FIXES

The following table summarizes significant events in the electronic control for the survey:

DN	Event Description
082	Seattle opening calibration (March 22, 1988)
125	Farragut opening calibration for A, B, 1, 3 on console-R/T's 711/B1405 and 720/911615 (May 4, 1988)
144	First day of data acquisition for H-10274 (May 23, 1988)
149	Kodiak closing calibration (May 28, 1988)
156	Code C failed; no Chiginagak closing calibration (June 4, 1988)
162	Kodiak opening calibration of new codes 1, B, D for all console-R/T pairs; code 2 closed and re-opened with 711-B1405 (June 10, 1988)
168	Console-R/T pair 711-B1405 removed from RA-3, placed in RA-5, and calibrated (June 16, 1988)
175	Code A failed; no Chiginagak closing calibration (June 23, 1988)
196	Chiginagak closing calibration for all console-R/T pairs (July 14, 1988)
200	Console 711 returned to Seattle (July 18, 1988)
201	Chiginagak opening calibration for 720/B1405 and 702/B1089; all codes including new code A (July 19, 1988)
218	Code D failed; no closing calibration (August 5, 1988)

248 Last day of data acquisition for H-10274 (September 4, 1988)

Antenna Offset Distances (ANDIST)

Each launch had its antenna located over its depth transducer, making the ANDIST corrector 0.0 in all cases. ✓

H. Shoreline

Shoreline features on the final field sheets were transferred from 1:10,000-scale enlargements of 1:20,000-scale shoreline maps ("TP-sheets") TP-01148, TP-01152, and TP-01153, compiled in 1984. TP-01148 covers the shoreline north of 57°00'00"N; TP-01152 covers the shoreline south of 57°00'00"N and west of 156°42'00"W; TP-01153 covers the shoreline south of 57°00'00"N and east of 156°42'00"W. The 18-meter westward shift of all shoreline detail was applied to the TP-sheets and final field sheets in accordance with Section 3.1.3.1 of the Project Instructions and the memorandum from N/CG2311 dated August 19, 1986 ~~(Appendix XI)~~, *Attached.* ✓

Shoreline verification was conducted in accordance with section 3.6 of the PMC OPORDER either at or near low water. Shoreline details were verified and are shown on the final field sheets. There are no areas where verification was not accomplished. ✓

Features which were visually verified from TP-sheets were assigned reference numbers and heights. The reference numbers and heights were recorded in a sounding volume and on the TP-sheets. Descriptive annotations were recorded on the TP-sheets and occasionally supplied on the raw data printouts at the inshore terminations of sounding lines and throughout lines run alongshore. The TP-sheets contain notes regarding the topography above the high water line; significant descriptions have been transferred to the final field sheets. ✓

It is clearly evident that the TP-sheet photography was flown during a stage of tide higher than MLLW, possibly as high as mid-tide. Shoreline verification revealed ledges to be much more extensive than depicted on the TP-sheets, particularly along the northeastern shore of the survey area. Isolated alongshore rocks often were high points of ledges. Numerous additional isolated rocks, foul regions, and ledges were found to exist which did not appear on the TP-sheet manuscripts. ✓

Detached positions were obtained on offshore features and features not shown on the TP-sheets. Cartographic codes have been included in the field records. Features which were verified or added have been plotted on the sheets in black. Detached positions and reference numbers are plotted on D.P. overlays with their respective four-digit and three-digit position numbers. Reference numbers are preceded by an 'R'. Heights are recorded in feet and are reduced to MLLW *based* ✓

on ~~predicted~~ Real tides. The heights recorded while delineating ledges, reefs, and rocks are the heights of these features at the particular location of the detached position; care was taken to obtain a detached position of each feature's highest point. The heights recorded for islets refer to their highest points. ✓

Changes to the locations of TP-sheet ledge limits and islets are shown in red on the final field sheets. Most of the alongshore features which were positioned agree with the TP-sheet locations of the features after applying the 18-meter westward shift. However, the positions of two islets and sections of shoreline agree with their respective TP-sheet locations without the shift. Based on hydrographic positioning methods, the hydrographer believes the 18-meter shift is neither constant nor applicable over the entire project area. Offshore features appear to be most adversely affected by the longitudinal shift. ✓

The two TP-sheet features listed below were searched for visually during shoreline verification and were not found (DN 169, Vesno 2126). Sounding lines in the two areas support the disprovals. The hydrographer recommends the features be removed from the shoreline map. Do Not Concur. See Evaluation Report section 2. with recommendation to revise shoreline map.

Feature	Position	Depth (fm) MLLW	Position No.
islet	56°59'36"N 156°42'13"W	3.79	9268
rock	56°58'08"N 156°44'57"W	2.37	9395

The listing of additions and changes to the shoreline within Appendix XI contains detailed information of detached positions taken during the survey, and may be used to supplement the raw master printouts. ✓

I. Crosslines

A total of 43.5 nautical miles of crosslines were run perpendicular to mainscheme lines, comprising 7.9% of the mainscheme hydrography. Overall agreement between crossline and mainscheme hydrography is excellent, with all crossline soundings agreeing within 0.2 fathoms of mainscheme soundings. ✓

J. Junctions

This survey junctions with H-10273 (1:10,000, 1988) and H-10281 (1:10,000, 1988), along the eastern and southern boundaries, respectively. The junction surveys were made concurrently with this survey. No irregularities were found when comparing soundings and depth contours; overall agreement of overlapping soundings between surveys is excellent. Depths from junction surveys agree within 0.2 fathoms with this survey. ✓ See Evaluation Report Section 5

K. Comparison With Prior Surveys

There are no prior surveys within the limits of this survey.

L. Comparison With the Chart

This survey was compared to NOS Preliminary Chart 16568, 5th Edition, 9 December 1978, 1:106,600.

SEE EVALUATION REPORT Section 7

Comparison of Sounding Features

The 78 charted soundings within the limits of this survey originate from BP 39179 and BP 39630. Both blueprints were compiled from 1944 1:20,000-scale USC&GS reconnaissance surveys but were not available for comparison with this survey.

Depths in the southern half of the survey area agree within 1 fathom with the charted depths. The chart and survey depths in the northern half of the survey revealed differences as great as six fathoms. However, in nearly every case the charted depth was approximately 200 meters north of a similar survey depth. The extremely irregular bathymetry coupled with the techniques employed for positioning and sounding during the reconnaissance surveys reasonably accounts for all the remaining sounding discrepancies. There are no general shoaling or deepening trends in the survey area.

Dive operations conducted in depths less than 10 fathoms resulted in least depths determined for 53 features identified within the areas of shoal developments. Each echo sounder depth considered for a dive operation was assigned a dive site number. These numbers appear on the development overlays and the dive investigation forms. The dive investigation forms contain detailed descriptions of each feature; the forms are included within the accordion files submitted with this survey.

All diver-obtained least depths which could be legibly plotted on the chart were reported as dangers to navigation and will not be discussed here. A copy of the dangers to navigation letter included in ~~Appendix X of~~ this report includes the position numbers and dive site numbers of each dive.

Of the 53 features investigated by divers, 39 were reported in the dangers to navigation letter; the following list summarizes the dives which were not included in the letter:

Object	Position	Least Depth (fm)	Position Number	Dive Site #
rock ridge	57°00'~~01"N~~ 00.69"N 156°43'~~23"W~~ 23.39"W	4.5 *	8002	4
rock outcrop	57°00'~~11"N~~ 11.02"N 156°43'~~28"W~~ 28.11"W	9.45 RK	8003	1

* EXCESSED BY 4.4 FATHOMS POSITION #669 at LATITUDE 57°00'00"N LONGITUDE 156°43'23.82"W

rock ridge	56°59'~~12"N~~ 12.46"N 156°41'~~39"W~~ 38.89"W	~~6.9~~ 7.0 RK	8006	8
rock pinnacle	56°57'~~45"N~~ 44.96"N 156°44'~~26"W~~ 26.12"W	7.5 RK	8019	29
rock pinnacle	56°57'~~36"N~~ 35.76"N 156°44'~~21"W~~ 21.26"W	7.8 RK	8022	28
rock outcrop	56°57'~~24"N~~ 23.59"N 156°46'~~52"W~~ 52.02"W	0.5 RK	8024	27A
rock outcrop	56°57'~~23"N~~ 22.84"N 156°46'~~51"W~~ 51.41"W	0.7 fb EXCESSED BY POSITION #8025 (0.5 RK) at LATITUDE 56°57'22.08"N LONGITUDE 156°46'51.41"W	8026	27C
rock outcrop	56°58'~~17"N~~ 17.42"N 156°41'~~40"W~~ 40.57"W	9.7 RK	8027	34
rock outcrop	57°01'~~18"N~~ 17.95"N 156°42'~~07"W~~ 06.68"W	6.23 RK	8034	37
rock outcrop	57°00'~~08"N~~ 07.92"N 156°43'~~27"W~~ 26.76"W	6.5 RK	8036	2
rock ridge	56°59'~~34"N~~ 33.62"N 156°41'~~26"W~~ 26.30"W	9.21 RK	8042	40
rock ridge	56°59'~~23"N~~ 22.95"N 156°45'~~03"W~~ 02.69"W	4.2 *	8047	43
rock outcrop	56°59'~~22"N~~ 21.96"N 156°41'~~29"W~~ 28.57"W	9.13 RK	8052	53
rock outcrop	56°59'~~43"N~~ 42.96"N 156°44'~~56"W~~ 55.82"W	~~3.9~~ 4.0 RK	8053	49

* EXCESSED BY 3.8 FATHOMS POSITION #49663 at LATITUDE 56°59'23.49"N, LONGITUDE 156°45'01.37"W

Note: rock ridges are more than 50 meters in length;
rock outcrops are less than 50 meters in length;
rock pinnacles are outcrops with shear sides.

No significant charted depths were disproved by the survey. The hydrographer recommends the soundings and least depths obtained from this survey supersede those currently charted. CONCUR

Comparison of Non-Sounding Features

Features which appear on the shoreline maps are in good agreement with charted features within the survey area, although ledges are generally more extensive than depicted on the shoreline maps. Therefore, all charted non-sounding features

SEPARATES Filed with Survey Records

investigated during shoreline verification are discussed in Section H and ~~Appendix XI of this report~~.

An uncharted reef was found to exist near the southwest section of the survey at 56°57'~~06"~~N, 156°46'~~48"~~W. Detached positions were obtained around its perimeter and the highest point, 3.6 feet above MLLW, noted (DN 170, Position numbers 9410-11, 9413-14). The reef is shown on the final field sheet and was reported as a danger to navigation.

05.41" 48.43" Position # 9413

CHART AREA AS SHOWN ON SMOOTH SHEET

An uncharted foul region extending 100 meters offshore from the charted ledge was found along the northeastern shore, between latitudes 57°00'30" and 57°01'25"N. The ledge was found to extend farther offshore than depicted on the chart. The ledge/foul region is shown on the final field sheet and has been reported as a danger to navigation.

CHART AREA AS SHOWN ON SMOOTH SHEET

The hydrographer recommends that all features positioned during this survey supersede those currently charted.

CONCUR

There are no AWOIS items within the limits of this survey.

Danger to Navigation Reports

Sixty-five dangers to navigation were found within the limits of this survey and have been reported, by radio message and letter, to the Commander, Seventeenth Coast Guard District and the Defense Mapping Agency Hydrographic/Topographic Center (DMAHTC)~~, (Appendix X)~~. The reported dangers include least depths obtained from dive investigations, developments, and shoreline verification. Position number(s) associated with each item have been noted on the letter ~~within the appendix~~. INCLUDED WITH THIS REPORT.

SEE EVALUATION REPORT SECTION F

M. Adequacy of Survey

This survey is the first basic hydrographic survey to be conducted in this area. The data are complete and adequate to be used for charting purposes and to supersede any historical data.

N. Aids to Navigation

There are no aids to navigation within the limits of the survey.

O. Statistics

	2120	2123	2124	2125	2126	Total
No. of Positions:	5	~~596~~ 551	~~1226~~ 1182	~~569~~ 572	~~3504~~ 3408	~~5900~~ 5718
LNM Hydrography:	0	68.4	141.6	60.6	424.1	694.7

Square Miles of Hydrography	13.85
Miles of Side Scan	0
Bottom Samples	130
Tide Stations	1
Velocity Casts	6
Magnetic Stations	0
Current Stations	0

P. Miscellaneous

Bottom samples, obtained at 6-cm intervals (survey scale), were submitted to the Smithsonian Institution ~~(Appendix VII).~~ SAMPLES FILED WITH SURVEY RECORDS.

No current measurements were made during this survey, since no anomalous current conditions were observed.

Simultaneous LORAN-C and Mini-Ranger III positioning information was acquired over the survey area and forwarded to the DMAHTC per PMC OPORDER 1.2.4. Only two of the three time delays shown on chart 16568 were acquired during the comparison. LORAN-C receivers aboard RAINIER and one sounding vessel were not able to lock onto the 9990-X signals. Therefore, all acquired LORAN-C data are from 9990-Y and 9990-Z signals.

In accordance with Section 6.5.3.1 of the Project Instructions, the area at 57°01'30"N, 156°46'00"W was examined as a possible refuge for small fishing vessels. The area is a sand flat and is inaccessible for any type of vessel; the hydrographer recommends the location not be considered a refuge. An area centered at 56°59'36"N, 156°43'30"W, along the north shore of Derickson Island, may provide refuge for small boats from sea surge and southerly winds. CONCUR CONCUR

Q. Recommendations

The hydrographer strongly recommends that the datum adjustments and photocompilation for this project area be reviewed and re-evaluated for possible positioning errors of offshore features. SEE EVALUATION REPORT SECTION 2

R. Automated Data Processing

Data acquisition and processing were accomplished with a PDP 8/e HYDROPLOT computer system, using the following programs:

NUMBER	DESCRIPTION	VERSION
RK 112	HYPERBOLIC, R/R HYDROPLOT	3/01/86
RK 201	GRID, SIGNAL, AND LATTICE PLOT	4/18/75
RK 221	COMB R/R & HYPER PLOT NON-RT	7/25/86
RK 300	UTILITY COMPUTATIONS	10/21/80

RA 362	RK 330 AND AM 602 COMBINED	8/20/84
RK 407	GEODETIC INVERSE/DIRECT COMP	9/25/78
RK 409	GEODETIC UTILITY PACKAGE	9/20/78
AM 500	PREDICTED TIDE GENERATOR	11/10/72
RK 530	LAYER CORRECTIONS FOR VELOCITY	5/10/76
RK 561	H/R GEODETIC CALIBRATION	12/01/82
RK 562	THEODOLITE CALIBRATION	9/05/84
AM 602	ELINORE - LINE ORIENTED EDITOR	12/08/82
RK 606	TAPE DUPLICATOR	8/22/74
AM 607	SELF-STARTING BINARY LOADER	8/10/80
RK 610	BINARY TAPE DUPLICATOR	1/31/85
RK 900	PLOT TEST TAPE GENERATOR FOR AM902	5/07/76
PM 901	CORE CHECK	3/01/72
AM 902	REAL TIME CHECKOUT	11/10/72
DA 903	DIAGNOSTIC-INSTRUCTION TIMER	2/27/76
RK 905	HYDROPLOT CONTROLLER CHECKOUT	3/18/81
RK 935	HYDROPLOT HARDWARE TESTS	3/15/82
RK 950	HARDWARE TESTS (DOCUMENTATION ONLY)	6/02/75
---	VELOCITY (new N/CG21 program)	3/11/88

Position Numbers

On DN 248, five shoreline positions were obtained by theodolite intersections (position numbers 100-104). The vessel number assigned to these data is 2120.

The following position numbers were repeated during the survey:

Vesno	Position Numbers	DN's
2124	4803-4805	147, 204, 210
	4806-4812	147, 205, 210
	4813-4831	147, 205, 216
	4832-4892	147, 205
2126	2014-2020	222, 231

S. Referral to Reports

The following supplemental reports contain additional information relevant to this survey:

TITLE	DATE SENT TO MARINE CENTER
1988 Horizontal Control Report for OPR-P180-RA	October, 1988
1988 Electronic Control Report for OPR-P180-RA	October, 1988
1988 Corrections to Echo Soundings Report OPR-P180-RA	October, 1988

Marine Mammal Report, RP-12-88 September, 1988

1988 Coast Pilot Report, OPR-P180-RA September, 1988

Respectfully Submitted,

Philip J. Meis
Ensign, NOAA

Approved and Forwarded,

John C. Albright
Captain, NOAA
Commanding Officer

1988 FIELD TIDE NOTE

OPR-P180-RA, Southern Alaska Peninsula, Alaska

OPR-P180-RA, Southern Alaska Peninsula, Alaska, includes four hydrographic surveys which were completed from May through September, 1988. The surveys are H-10273 (Sheet H), H-10274 (Sheet J), H-10280 (Sheet AK), and H-10281 (Sheet AL). Field-tide reduction of soundings was based on predicted tides computed with program AM 500, Predicted Tide Generator, by using the predicted tides for the Kodiak, Alaska, reference station (945-7292). Two of the four corrector zones stated in Section 5.9 of the Project Instructions affect the surveys. The table below shows the corrector sets and the surveys to which they apply:

Hydrographic Area	Time Correction		Height Ratio	Registry Number
	High Water	Low Water		
N of 56°55.0'N	+0hr 20min	+0hr 40min	x1.28	H-10273, H-10274
Between 56°55.0'N and 56°50.0'N	+0hr 20min	+0hr 40min	x1.20	H-10280, H 10281

Near the beginning and end of the project, leveling was conducted at the Sand Point reference station (945-9450) to connect six bench marks with the staff. The opening levels were conducted by the Anchorage Liaison Officer on May 15, 1988. Closing levels will be conducted by RAINIER personnel, and will be submitted separately. The Sand Point tide station serves as the control station for datum determination for all subordinate stations.

The following tide station was installed in the project area:

DERICKSON ISLAND, SOUTHERN ALASKA PENINSULA, ALASKA (945-8522)

Geographic Locale - 56°59'40"N, 156°~~43'10"W~~ 42.56"W (North Chiginagak Bay)

Installation Date - May 22, 1988

Removal Date - September 05, 1988

Gage Type - Bristol bubbler (S/N 68A-9335) with a backup Bristol bubbler (S/N 67A-16205). The gages were placed on a flat rock at the base of a talus slope approximately 14 feet above the high water mark, and were secured to the rock with eye bolts and aircraft wire. The orifice tubing was secured with rocks and eye bolts. The orifices were secured to a steel plate which was subsequently anchored to the bottom with rocks.

Staff - Two cables and two 2x4's braced the staff at the 2.5-ft mark. These were anchored by lag bolts into a vertical rock face. The staff was also secured at the 7.0-ft mark to the rock face by means of a lag bolt. Two small pieces of 2x4 shimmed the top of the staff and were anchored by lag bolts and nails. The staff stop was a piece of angle iron anchored to the side of the staff at the 9.0-ft mark.

Staff Zero/Gage Zero

Gage # 68A-9335: 7.82 ft

Gage # 67A-16205: 7.41 ft

Gage Time - Universal Coordinated Time

Bench Marks - Five bench marks were recovered at this station: 8522 A 1987, 8522 B 1987, 8522 C 1987, 8522 D 1987, and 8522 E 1987. The five bench marks were connected in the initial and final leveling.

Levels - Installation levels were completed on May 22, 1988, connecting the five bench marks mentioned above. Final leveling was completed on September 05, 1988. The final levels agreed with the installation and historical levels to within 0.003 meters.

Marigram Records -
GAGE # 68A-9335: Marigram records are continuous:

FROM	TO
05/22/88 @ 2100	05/25/88 @ 1612
05/25/88 @ 1620	06/01/88 @ 1806
06/01/88 @ 1819	06/04/88 @ 1630
06/04/88 @ 1646	06/17/88 @ 1624
06/17/88 @ 1642	06/24/88 @ 2330*
06/25/88 @ 0018	07/07/88 @ 1624
07/07/88 @ 1630	07/22/88 @ 1630
07/22/88 @ 1642	07/28/88 @ 1630*
07/28/88 @ 1712	08/05/88 @ 1618
08/05/88 @ 1630	08/18/88 @ 1624
08/18/88 @ 1648	08/30/88 @ 1645
08/30/88 @ 1700	09/05/88 @ 1618**

* Marigram records removed.
** Gage removed

GAGE # 67A-16205: Marigram records are continuous:

FROM	TO
05/22/88 @ 2100	06/08/88 @ 2112
06/08/88 @ 2124	06/26/88 @ 1630*
06/26/88 @ 1730	07/19/88 @ 2118
07/19/88 @ 2154	07/21/88 @ 1642
07/21/88 @ 1700	07/28/88 @ 1630*
07/28/88 @ 1712	08/02/88 @ 2354
08/02/88 @ 0000	08/18/88 @ 1624
08/18/88 @ 1648	09/05/88 @ 1618**

* Marigram records removed.
** Gage removed

Station Problems

RAINIER was in Kodiak on the weekend of 26 through 29 August, 1988. During this inport, the Derickson Island tide gages were opened by unauthorized personnel resulting in the theft of various tools. No vandalism to the gages or staff occurred.

No other station problems were encountered during data acquisition.

FINAL SIGNAL LISTING
OPR-P180-RA, ALASKA PENINSULA
RA-10-2-88 (H-10274)

VERSION

AUGUST 25, 1988

100	1	56	58	33386	156	32	48468	250	0011	000000	PRD, 1944
101	1	56	53	03001	156	34	16924	250	0031	000000	AILGNAK, 1944
102	1	56	56	42909	156	41	05540	250	0015	000000	CHIG, 1944
103	1	56	57	40436	156	41	06955	250	0038	000000	FOUL, 1944
104	1	56	59	41039	156	42	19471	250	0023	000000	DERICK, 1988
105	1	56	59	57444	156	44	52	250	0050	000000	PR-17, 1988
106	1	57	02	14610	156	42	51	250	0015	000000	PR-16, 1988
~~107~~	~~1~~	~~56~~	~~59~~	~~43103~~	~~156~~	~~27~~	~~16748~~	~~250~~	~~0028~~	~~000000~~	
~~108~~	~~1~~	~~57~~	~~01~~	~~29130~~	~~156~~	~~28~~	~~26328~~	~~250~~	~~0022~~	~~000000~~	
~~109~~	~~1~~	~~57~~	~~00~~	~~03327~~	~~156~~	~~39~~	~~08603~~	~~250~~	~~0010~~	~~000000~~	
110	1	56	56	57537	156	46	21755	250	0033	000000	PR-54, 1988
111	1	56	54	52508	156	46	4881	250	0040	000000	KAYAK, 1988
112	1	56	48	55100	156	45	3920	250	0018	000000	RADIAL, 1988
113	1	56	59	51806	156	43	21076	250	0003	000000	CAL. ROCK, 1988
~~114~~	~~1~~	~~56~~	~~59~~	~~37060~~	~~156~~	~~43~~	~~42030~~	~~243~~	~~0000~~	~~000000~~	

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

NOAA Ship RAINIER S-221
1801 Fairview Ave. East
Seattle, WA 98102

August 12, 1988

Director
DMAHTC
6500 Brooks Lane
Washington, DC 20315

Dear Sir:

During 1988 surveys along the southern Alaska Peninsula, NOAA Ship RAINIER has discovered, to date, 118 dangers to navigation. These have been reported to the Seventeenth Coast Guard District for publication in the Local Notice to Mariners. A copy of the report describing them is enclosed.

Sincerely,

John C. Albright
Captain, NOAA
Commanding Officer

Enclosures

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship RAINIER S-221
1801 Fairview Avenue East
Seattle, Washington 98102

August 12, 1988

Commander
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, AK 99802

Dear Sir:

Attached are confirmation copies of two radio messages sent to your office regarding dangers to navigation which I recommend for inclusion in the Local Notice to Mariners for the Seventeenth Coast Guard District. A chartlet showing the areas in which the reported dangers exist is also attached.

Sincerely,

John C. Albright

John C. Albright
Captain, NOAA
Commanding Officer

Enclosures

cc:DMAHTC
N/CG222
N/MOP

PTTUZYUW RUHPTEF0211 2241705-UUUU--RUHPSUU.
ZNR UUUUU
P 111705Z AUG 88
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAAMOP SEATTLE WA
DMAHTC WASHINGTON DC //NVS//
ACCT CM-VCAA
BT
UNCLAS
REQUEST FOLLOWING BE PUBLISHED IN LOCAL NOTICE TO MARINERS FOR SEVENTEENTH DISTRICT:
//THE NOAA SHIP RAINIER OF THE NATIONAL OCEAN SERVICE IS CONDUCTING CHARTING OPERATIONS IN CHIGINAGAK BAY, SOUTHERN ALASKA PENINSULA, A PREVIOUSLY UNSURVEYED AREA. THE FOLLOWING DANGERS TO NAVIGATION HAVE BEEN DISCOVERED ON SURVEY H-10274, NORTHERN CHIGINAGAK BAY. IT IS IMPORTANT TO NOTE THAT UNCHARTED DEPTHS SHOALER THAN THOSE LISTED HERE EXIST THROUGHOUT THIS AREA. THESE SHOALER DEPTHS HOWEVER CONFORM TO THE GENERAL BOTTOM CONTOURS. THE DANGERS REPORTED BELOW ARE ISOLATED FEATURES LOCATED DURING THE SURVEY WHICH RISE SIGNIFICANTLY ABOVE SURROUNDING DEEPER DEPTHS. MARINERS ARE URGED TO CONTINUE TO NAVIGATE WITH EXTREME CAUTION IN THIS AREA UNTIL ALL DATA FROM SURVEY H-10274 ARE APPLIED TO CHART 16568. ALL DEPTHS AND HEIGHTS REDUCED TO MLLW USING PREDICTED TIDES AND ALL POSITIONS BASED ON NAD27 DATUM. FEATURES BELOW ARE NUMBERED CONSECUTIVELY WITH DANGERS DISCOVERED DURING SURVEY H-10273, EASTERN CHIGINAGAK BAY.

depths correct to MLLW (observed tides)

		Pos. No.	Dive Site No.	Feature
-54.	ROCK COVERED 3.6 FATHOMS AT 56/59/58N 156/43/26W	8001	3	Ridge
55.	ROCK COVERED ~~6.9~~ 7.8 FATHOMS AT 56/59/10N 156/41/34W	8004	9	"
56.	ROCK COVERED 6.~~6~~ 7 FATHOMS AT 56/59/08N 156/41/38W	8005	10	"
57.	ROCK COVERED 0.3 FATHOMS AT 56/58/25N 156/41/03W	8007	11	"
58.	ROCK COVERED 7.7 FATHOMS AT 56/58/06N 156/41/56W	8008	16	"
-59.	ROCK COVERED 3.0 FATHOMS AT 56/58/13N 156/41/~~42~~ 45W	8009	12	"
60.	ROCK COVERED 8.3 FATHOMS AT 56/58/08N 156/41/04W	8010	13	"
-61.	ROCK COVERED 7.9 FATHOMS AT 56/57/25N 156/41/14W	8011	14	"
-62.	ROCK COVERED 6.6 FATHOMS AT 56/57/02N 156/40/52W	8012	15	Pinnacle
63.	ROCK COVERED 5.2 FATHOMS AT 56/58/35N 156/43/06W	8013	17	
-64.	ROCK COVERED 5.~~3~~ 2 FATHOMS AT 56/57/16N 156/44/55W	8014	21	Ridge
65.	ROCK COVERED 1.~~3~~ 2 FATHOMS AT 56/57/42N 156/44/20W	8015	19	Outcrop
-66.	ROCK COVERED 5.~~3~~ 2 FATHOMS AT 56/57/13N 156/45/16W	8016	22	Outcrop
67.	ROCK COVERED 7.7 FATHOMS AT 56/58/25N 156/43/03W	8017	18	Ridge
68.	ROCK COVERED 2.8 FATHOMS AT 56/57/40N 156/44/28W	8018	20	Outcrop
69.	SHOAL COVERED 1.9 FATHOMS AT 56/58/06N 156/46/48W	8020	25	
-70.	ROCK COVERED 1.2 FATHOMS AT 56/57/40N 156/46/57W	8021	26	Outcrop
-71.	ROCK COVERED 3.2 FATHOMS AT 56/58/51N 156/45/52W	8023	24	Pinnacle
72.	ROCK COVERED 0.5 FATHOMS AT 56/57/22N 156/46/51W	8025	27B	Ridge
-73.	ROCK COVERED 9.~~1~~ 2 FATHOMS AT 56/57/59N 156/42/02W	8028	33	Outcrop
-74.	ROCK COVERED 1.4 FATHOMS AT 56/57/40N 156/40/5~~4~~ 5W	8029	32	Pinnacle
75.	ROCK COVERED 9.0 FATHOMS AT 56/58/39N 156/41/01W	8030	35	Outcrop
76.	ROCK COVERED 8.1 FATHOMS AT 56/57/06N 156/40/57W	8031	31	Ridge
-77.	ROCK COVERED 0.3 FATHOMS AT 56/57/09N 156/46/4~~8~~ 7W	8032	30	"
78.	ROCK COVERED 6.~~3~~ 2 FATHOMS AT 57/01/03N 156/42/08W	8033	36	"
79.	ROCK COVERED 3.~~3~~ 2 FATHOMS AT 57/01/37N 156/42/04W	8035	38	Outcrop
80.	ROCK COVERED 4.8 FATHOMS AT 56/59/56N 156/43/27W	8037	5	Pinnacle

Depth to MLLW (observed Tides)

		Pos. No.	Dive Site No.	Feature
81.	ROCK COVERED 2.0 FATHOMS AT 56/59/55N 156/43/16W	8038	6	Dome
82.	ROCK COVERED 7.~~7~~6 FATHOMS AT 56/57/03N 156/45/11W	8039	39	Ridge
83.	ROCK COVERED 7.2 FATHOMS AT 56/59/~~27~~31N 156/41/30W	8041	41	Outcrop
84.	ROCK COVERED ~~8.0~~ 7.9 FATHOMS AT 56/59/28N 156/41/28W	8043	42	Outcrop
85.	ROCK COVERED 2.~~4~~3 FATHOMS AT 56/59/56N 156/43/14W	8044	7	Dome
86.	ROCK COVERED 6.~~4~~4 FATHOMS AT 56/59/26N 156/44/56W	8045	45	Ridge
87.	ROCK COVERED ~~7.7~~ 7.4 FATHOMS AT 56/59/25N 156/44/58W	8046	44	"
88.	ROCK COVERED 5.~~9~~9 FATHOMS AT 56/59/28N 156/45/02W	8048	47	outcrop
89.	ROCK COVERED ~~4.5~~4.6 FATHOMS AT 56/59/26N 156/45/04W	8049	48	Outcrop
90.	ROCK COVERED 6.~~7~~9 FATHOMS AT 56/59/28N 156/44/58W	8050	50	Pinnacle
91.	ROCK COVERED 2.~~4~~7 FATHOMS AT 56/59/42N 156/44/52W	8051	46	Pinnacle

92. ROCK EXPOSED 4.0 FEET AT 57/~~00~~/~~35~~N 156/~~45~~/~~38~~W Pos #6384
93. ROCK EXPOSED ~~0.9~~ 1.0 FEET AT 57/01/59N 156/44/~~09~~08W #6385
94. FOUL REGION EXTENDS SOUTHWARD FROM THE NORTHERN SHORE OF CHIGINAGAK BAY, SOUTHERN LIMIT IS DEFINED BY A ROCK EXPOSED ~~1.4~~ 1.3 FEET AT 57/02/02N 156/44/05W Pos # 6388
95. ROCK COVERED 0.3 FATHOMS AT 57/01/36N 156/41/49W Pos #6390
96. FOUL REGION EXTENDS WSW FROM SHORE, WESTERN LIMITS ARE DEFINED BY THE FOLLOWING FEATURES:
ROCK EXPOSED 13.2 FEET AT 56/59/59N 156/40/42W Pos # 6647
ROCK EXPOSED 4.~~2~~0 FEET AT 56/59/57N 156/40/39W 6648
97. ROCK EXPOSED 5.~~2~~0 FEET AT 57/00/08N 156/40/46W 6649
98. ROCK EXPOSED ~~3.6~~ 3.5 FEET AT 56/59/23N 156/45/10W 9141
99. ROCK EXPOSED ~~3.6~~ 3.5 FEET AT 56/59/38N 156/44/58W 9142
100. ROCK EXPOSED ~~1.2~~ 1.7 FEET AT 56/58/05N 156/44/51W 9385
101. ROCK EXPOSED ~~3.2~~ 3.1 FEET AT 56/58/04N 156/44/59W 9386
102. ROCK EXPOSED 6.~~2~~0 FEET AT 56/58/01N 156/44/58W 9387
103. ROCK EXPOSED 8.0 FEET AT 56/58/08N 156/44/52W 9392
104. FOUL REGION, EXTENDS NORTHWARD FROM CHARTED ISLAND, IS DEFINED BY THE FOLLOWING FEATURES:
ROCK EXPOSED ~~1.2~~ 1.1 FEET AT 56/57/04N 156/45/31W Pos # 9397
ROCK EXPOSED ~~0.8~~ 0.9 FEET AT 56/57/05N 156/45/35W 9398
ROCK EXPOSED ~~3.4~~ 3.9 FEET AT 56/57/01N 156/45/27W 9399
105. FOUL REGION, EXTENDS NORTHWARD FROM CHARTED ISLAND, IS DEFINED BY THE FOLLOWING FEATURES:
ROCK EXPOSED ~~0.4~~ 1.0 FEET AT 56/57/06N 156/45/39W Pos # 9400
ROCK EXPOSED ~~2.9~~ 3.0 FEET AT 56/57/06N 156/45/43W 9401
ROCK EXPOSED ~~3.4~~ 3.1 FEET AT 56/57/01N 156/45/56W 9403
106. LEDGE, EXTENDS NORTHWARD FROM CHARTED ISLAND, IS DEFINED BY THE FOLLOWING FEATURES:
LEDGE LIMIT EXPOSED ~~3.8~~ 3.5 FEET AT 56/57/04N 156/46/04W Pos # 9404
LEDGE LIMIT EXPOSED ~~1.4~~ 1.3 FEET AT 56/57/01N 156/46/00W 9406
LEDGE LIMIT EXPOSED ~~1.5~~ 1.0 FEET AT 56/57/01N 156/46/09W 9408
LEDGE LIMIT EXPOSED ~~1.5~~ 1.0 FEET AT 56/57/00N 156/46/26W 9409
107. ROCK REEF, 6 METERS WIDE (E-W), ELONGATED N-S, IS DEFINED BY THE FOLLOWING FEATURES:
ROCK EXPOSED ~~0.8~~ 0.6 FEET AT 56/57/03N 156/46/47W Pos # 9411
ROCK EXPOSED ~~3.8~~ 3.6 FEET AT 56/57/05N 156/46/48W 9413
ROCK ~~COVERED~~ EXPOSED ~~0.1~~ 1.0 FEET AT 56/57/07N 156/46/48W 9414
108. ROCK EXPOSED ~~2.4~~ 3.0 FEET AT 56/58/11N 156/46/55W 9415
109. ROCK EXPOSED ~~3.6~~ 5.0 FEET AT 56/58/26N 156/46/33W 9424
110. FOUL REGION, 130 METERS WIDE, EXTENDS EAST FROM WESTERN SHORE BETWEEN 56/58/12N AND 56/58/34N
111. ROCK EXPOSED ~~5.6~~ 6.0 FEET AT 56/59/25N 156/45/13W Pos # 4800

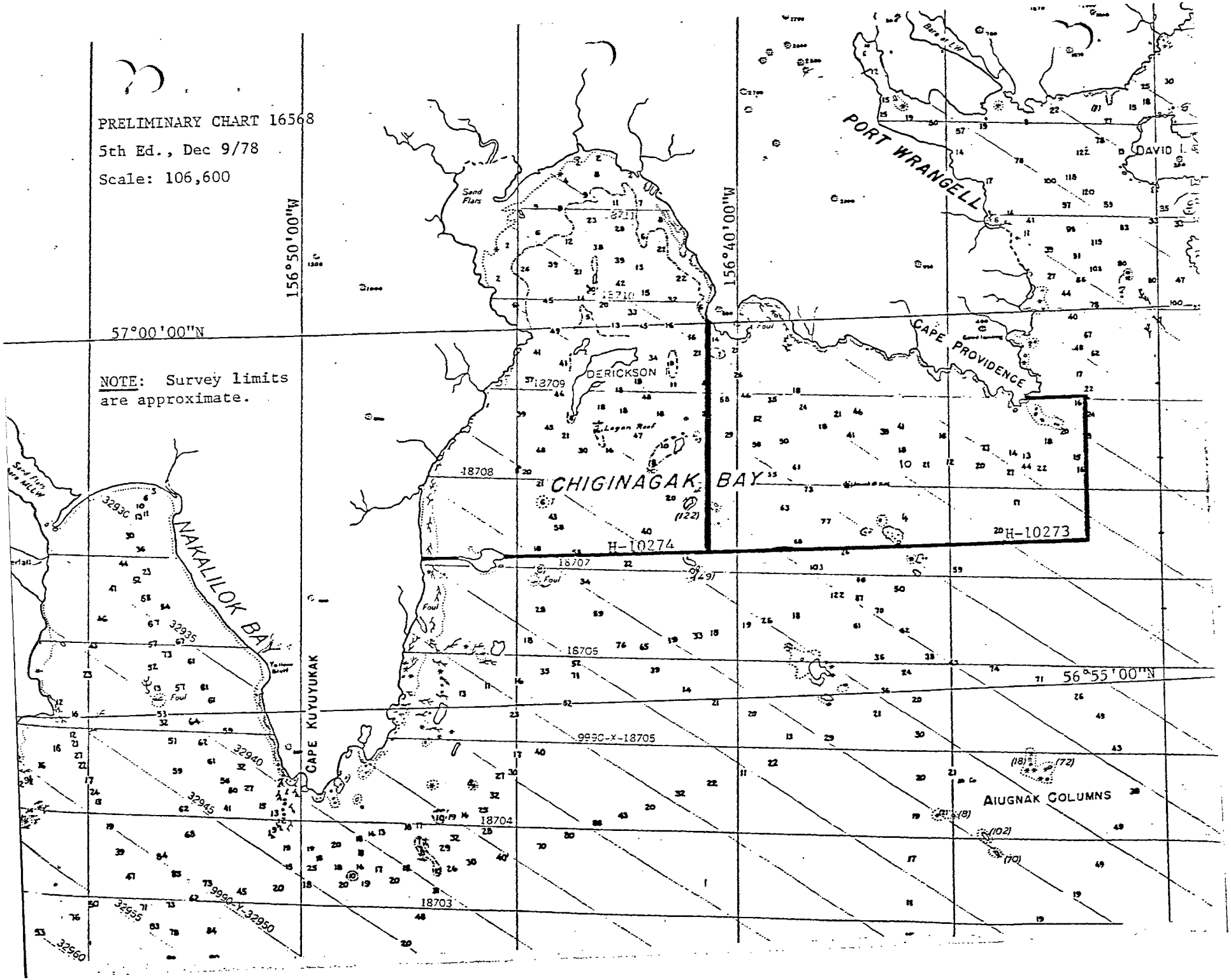
Depths corrected To MLLW (Observed Tides)

112. ROCK EXPOSED 5.6 FEET AT 56/59/31N 156/45/07W Pos# 4801 NSP
113. ROCK EXPOSED ~~1.6~~ 3.0 FEET AT 56/58/48N 156/46/01W 4806
114. ROCK EXPOSED ~~5.8~~ 6.8 FEET AT 56/59/12N 156/45/42W 1655
115. LEDGE EXTENDS NORTH AND EASTWARD FROM SHORE, IS DEFINED BY THE FOLLOWING FEATURES:
LEDGE LIMIT EXPOSED ~~5.8~~ 6.8 FEET AT 56/59/11N 156/45/44W 1656
LEDGE LIMIT EXPOSED ~~1.8~~ 2.8 FEET AT 56/59/09N 156/45/43W 1657
116. FOUL REGION, EXTENDING SOUTHWARD FROM SHORE, IS DEFINED BY THE FOLLOWING FEATURES:
ROCK EXPOSED ~~7.4~~ 8.0 FEET AT 56/59/32N 156/42/20W Pos# 9130
ROCK EXPOSED ~~4.4~~ 6.0 FEET AT 56/59/29N 156/42/20W 9131
ROCK EXPOSED ~~12.0~~ FEET AT 56/59/29N 156/42/25W 9132 (3)
ROCK EXPOSED ~~12.0~~ FEET AT 56/59/29N 156/42/30W 9133 (4)
117. ISLET AND ASSOCIATED LEDGE ARE DEFINED BY THE FOLLOWING POSITIONS:
ISLET EXPOSED 15.4 FEET AT 56/59/32N 156/42/18W 9129 (1)
LEDGE LIMIT EXPOSED ~~2.8~~ 4.0 FEET AT 56/59/37N 156/42/17W 9125
LEDGE LIMIT EXPOSED ~~6.8~~ 8.0 FEET AT 56/59/35N 156/42/14W 9127
118. ROCK COVERED 3.~~7~~ FATHOMS AT 56/58/21N 156/45/50W 8054 DIVE SITE # 51 Outcrop

THE FOLLOWING NOS PRELIMINARY CHART IS AFFECTED:
16568 5TH ED DEC 9/78 1:106600
THIS IS ADVANCE INFORMATION SUBJECT TO OFFICE REVIEW. QUESTIONS CONCERNING THESE DATA CAN BE DIRECTED TO:
DIRECTOR, PACIFIC MARINE CENTER
1801 FAIRVIEW AVENUE EAST
SEATTLE, WASHINGTON 98102
(206) 442-7656//

A LETTER WITH ATTACHED CHARTLET IS BEING MAILED TO YOU TO CONFIRM THIS MESSAGE.
BT
#0211

NNNN


PRELIMINARY CHART 16568
5th Ed., Dec 9/78
Scale: 106,600
NOTE: Survey limits are approximate.
156°50'00"W
156°40'00"W
57°00'00"N
56°55'00"N
PORT WRANGELL
CAPE PROVIDENCE
DAVID I.
DERICKSON
CHIGINAGAK BAY
NAKALILOK BAY
CAPE KUYUYUKAK
AIUGNAK COLUMNS
H-10273
H-10274
18711
18710
18709
18708
18707
18705
18704
18703
9990-X-18705
9990-X-32950
32935
32940
32945
32950
32955
32960

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Pacific Marine Center
Nautical Chart Branch
7600 Sand Point Way NE
BIN C15700
Seattle, Washington 98115-0070

October 11, 1988

TO: N/CG2222 - James W. Dailey

FROM: N/MOP21 - Thomas W. Richards

SUBJECT: Dangers to Navigation on Survey H-10274

During the preprocessing examination of survey H-10274, Alaska, Alaskan Peninsula, Northern Chiginagak Bay, an error in position was found for a danger the RAINIER reported to the USCG. This danger is #59 on the list, a rock covered 3.0 fathoms (see attached copy of the Dangers to Navigation message, sent by RAINIER). The RAINIER reported the rock at latitude 56/58/13N, longitude 156/41/42W. The rock was found on the final field sheet at latitude 56/58/13N, longitude 156/41/12W. This danger affects Preliminary Chart 16568.

Attachment

CLEARANCE: SIGNATURE AND DATE:

N/MOP:SRPetersen ORIGINAL SIGNED BY
J. W. Carpenter
10/12/88

National Ocean Service
Office of Charting & Geodetic Services
Pacific Hydrographic Section
7600 Sand Point Way NE
Seattle, WA 98115-0070

October 6, 1989

MEMORANDUM FOR: Captain Christian Andreasen, NOAA
Chief, Nautical Charting Division

THRU: Commander Russell C. Arnold, NOAA
Chief, Hydrographic Surveys Branch

FROM: Commander Pamela R. Chelgren-Koterba, NOAA
Chief, Pacific Hydrographic Section

SUBJECT: Dangers to Navigation Within Chiginagak Bay On Preliminary Chart 16568

During office processing of hydrographic surveys H-10273 and H-10274, Chiginagak Bay, Southern Alaska Peninsula, dangers to navigation not appearing on chart 16568, 6th edition dated April 29, 1989 were noted.

The following statement is recommended for publication in the Local Notice to Mariners:

"The NOAA Ship RAINIER reports numerous uncharted shoals, covered rocks and foul areas exist throughout the areas of eastern and northern Chiginagak Bay. Mariners are urged to navigate in this area with extreme caution."

Questions concerning this report should be directed to the Chief, Pacific Hydrographic Section(N/CG245) at (206)526-6835.

cc: PMCx3

FILE COPY

CODE	SURNAME	DATE	CODE	SURNAME	DATE
CG24PSC	TSJ	10/6/89			
CG2451	DMH	10-6-89			
CG245	PRC	10/6/89			

NOAA FORM 61-2

*U.S. GOVERNMENT PRINTING OFFICE: 1987-756-883

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Charting & Geodetic Services
Pacific Hydrographic Section
7600 Sand Point Way NE
Seattle, WA 98115-0070

OCT 3 0 1989

Commander (OAN)
Seventeenth Coast Guard District
P.O. Box 3-5000
Juneau, AK 99802-1217

Dear Sir:

During office review of hydrographic survey H-10274, Alaska, Alaska Peninsula, northern Chiginagak Bay, twelve dangers to navigation affecting preliminary chart 16568 (6th ed., April 29, 1989: NAD 83) and three dangers to navigation affecting chart 16011 (31st ed., June 29, 1985: NAD 27) and chart 16013 (24th ed., December 8, 1984: NAD 27) were found.

It is recommended that the enclosed Report of Dangers to Navigation be included in the Local Notice to Mariners.

Questions concerning this report should be directed to the Pacific Hydrographic Section at (206) 526-6853.

Sincerely,

For Pamela R. Chelgren-Koterba
Commander, NOAA
Chief, Pacific Hydrographic Section

Enclosure

cc: DMA/TC
N/CG221
PMCx3

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: H-10274
Survey Title: State: Alaska
General Locality: Alaska Peninsula
Sublocality: Northern Chiginagak Bay
Project Number: OPR-P180-RA, NOAA Ship: RAINIER

The following items were discovered during office processing of hydrographic survey H-10274.

Objects discovered: Shoal soundings and rocks covered, corrected to MLLW

Affected nautical charts:

CHART NUMBER	EDITION NO.	EDITION DATE	REPORTED DEPTH		CHART HORIZ. DATUM	GEOGRAPHIC POSITION LATITUDE N	GEOGRAPHIC POSITION LONGITUDE W
16568	6th	4/29/89	4 fathoms		1983	57°01'26.10"	156°44'32.88"
16568	6th	4/29/89	4½ fathoms		1983	57°01'16.37"	156°44'41.50"
16568	6th	4/29/89	2 fathoms	Rk	1983	56°59'52.05"	156°43'22.80"
16568	6th	4/29/89	7¼ fathoms	Rk	1983	56°59'28.51"	156°41'34.53"
16568	6th	4/29/89	2¼ fathoms		1983	56°59'21.59"	156°45'07.37"
16568	6th	4/29/89	6¼ fathoms		1983	56°59'05.12"	156°41'45.00"
16568	6th	4/29/89	5¼ fathoms	Rk	1983	56°58'32.09"	156°43'12.93"
16568	6th	4/29/89	3½ fathoms	Rk	1983	56°58'18.14"	156°45'56.90"
16568	6th	4/29/89	1¼ fathom	Rk	1983	56°57'38.89"	156°44'27.57"
16568	6th	4/29/89	1¼ fathom	Rk	1983	56°57'36.92"	156°47'04.16"
16568	6th	4/29/89	7¾ fathoms		1983	56°57'15.47"	156°41'21.76"
16568	6th	4/29/89	5¼ fathoms	Rk	1983	56°57'12.95"	156°45'01.92"
16568	6th	4/29/89	6½ fathoms	Rk	1983	56°56'59.9"	156°40'59.3"
16011	31st	6/29/85	4½ fathoms		1927	57°01'19.02"	156°44'34.12"
16011	31st	6/29/85	6¼ fathoms		1927	56°59'07.77"	156°41'37.62"
16011	31st	6/29/85	1¼ fathom	Rk	1927	56°57'41.54"	156°44'20.19"
16013	24th	12/8/84	4½ fathoms		1927	57°01'19.02"	156°44'34.12"
16013	24th	12/8/84	6¼ fathoms		1927	56°59'07.77"	156°41'37.62"
16013	24th	12/8/84	1¼ fathom	Rk	1927	56°57'41.54"	156°44'20.19"

Questions concerning this report should be directed to the Pacific Marine Section at (206) 526-6853.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

OCT 8 1986 N/MOP21/TWR

RECEIVED
BY

OCT 20 1986

NOAA FAIRWEATHER (S220)
Seattle, Washington

TO: Commanding Officer
NOAA Ship FAIRWEATHER

FROM: N/MOP - Robert L. Sandquist

SUBJECT: Aerotriangulation Stations and Shoreline Accuracy for OPR-P180-FA-86.

REF: NOAA Ship FAIRWEATHER Memorandum Dated 8/19/86 Same Subject

REF: N/CG2311 Memorandum Dated 8/19/86 Same Subject

The Photogrammetry Branch has determined that the shoreline map discrepancy reported by FAIRWEATHER was due to photogrammetry using geodetic control based upon a 1948 adjustment during aerotriangulation bridging rather than using the most recent 1976 adjustment. They recommend mean adjustment values of 17.4 meters in longitude and 2.3 meters in latitude be used when applying data from these manuscripts.

Your proposed solution of shifting all manuscript data 1.8 millimeters to the west before applying them to your 1:10,000 scale final field sheets is totally acceptable. The recommended values proposed by the Photogrammetry Branch will be used by the Nautical Chart Branch when compiling the smooth sheets for these surveys.

Further instructions for the future use of data from Job CM8200 will be contained in your 1987 project instructions for OPR-P180.

You are commended for your diligence in uncovering this discrepancy in the field. Well done.

w/Attachment (Ref. 2)
cc: N/CG24
N/MOP211

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

NOAA Ship FAIRWEATHER
1801 Fairview Ave. East
Seattle, Washington 98102

August 19, 1986

TO: N/MOP - Robert L. Sandquist

FROM: Commanding Officer J. W. Carpenter
NOAA Ship FAIRWEATHER S220

SUBJECT: Aerotriangulation Station and Shoreline Accuracy
for OPR-P180-FA-86

For project OPR-P180-FA-86, Southern Alaska Peninsula, FAIRWEATHER was supplied with 17 aerotriangulated hydrographic control stations (Job CM-8200, Cape Kilokak to Cape Kumlik, Alaska). This field season afforded the first opportunity to use some of the photogrammetric sites for hydrographic control.

To verify the location of station PR-12, launch critical system checks were accomplished using theodolite intersection. Differences of 15 to 20 meters from the Mini-Ranger baseline correctors were found. To verify other photo stations, a First-Order geodetic station (ASH) was occupied with horizontal angles (four-plate settings) turned from a First-Order station (PINA) to PR-72, PR-10, and PR-11. Using the computed distances from ASH to the aerotriangulated stations, differences between the observed and computed angles leads to positional errors of 17 to 18 meters (see Attachment A).

Third-Order, Class I positions were then determined for PR-12, PR-13, and PR-68. All three geodetic positions are approximately 18 meters west of the aerotriangulated positions (see Attachment A). This is the same error that was found with stations PR-72, PR-10, and PR-11, discussed above.

The majority of hydrography running west into the shoreline indicates that the high water line and ledge limits are west of where the shoreline manuscript depicts them. In many cases positive soundings are on or above the high water line. Comparison of detached positions on offshore rocks to the manuscript rock locations is difficult due to the rocks' large size and the launch orientation while taking the fix.

It is recommended that Job CM-8200 be reviewed as an 18-meter error to the east is suspected in both the aerotriangulated positions and the shoreline. FAIRWEATHER will not attempt to use any photogrammetric station positions from this project until the problem is resolved. Geodetic control has been extended south to Cape Providence as of this time.

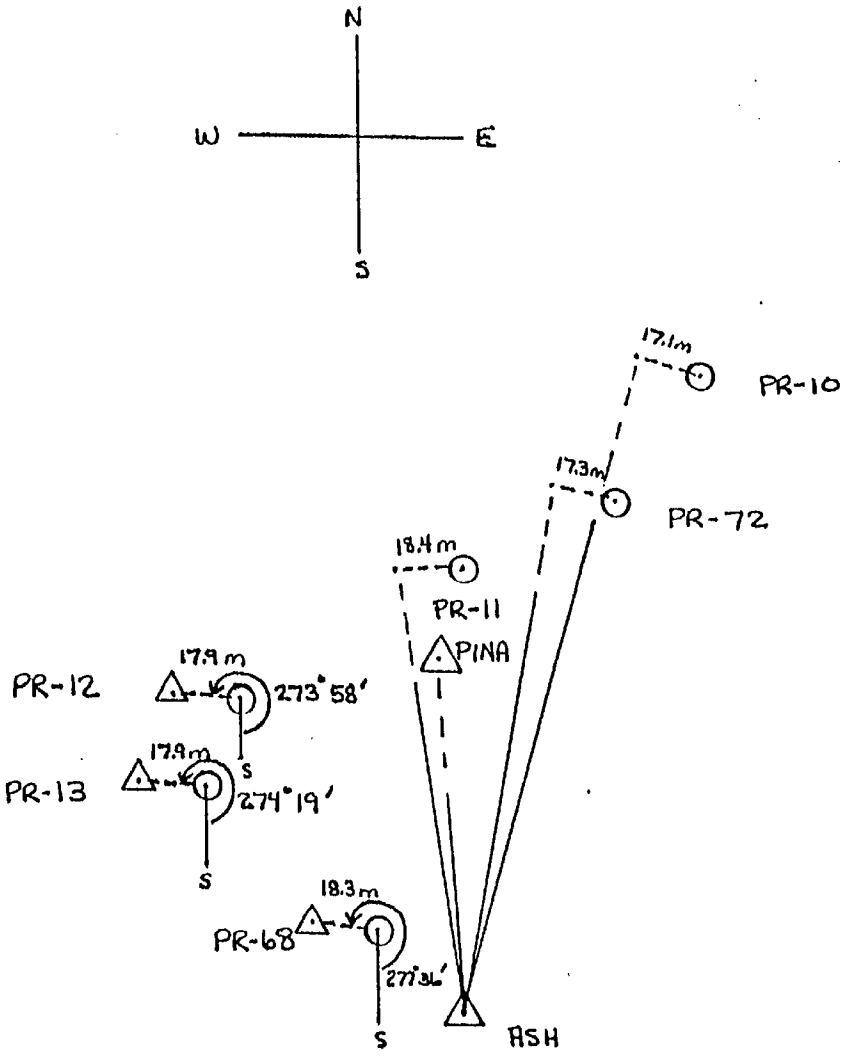
It is felt that to best display manuscript data on the final field sheets all features from the manuscript (including shoreline) should be shifted 1.8 millimeters to the west before application to the final field sheets. As work is beginning on final field sheets H-10214 and H-10215, resolution

of this problem would be appreciated as soon as possible. If instructions have not been received before drafting is to begin, manuscript features will be shifted as described above.

Nautical Chart Branch may have an interest in knowing that the reference number method (PMC OPORDER, Appendix P) was used for verifying the majority of alongshore manuscript rocks. Time and weather conditions will not permit obtaining detached positions on these rocks before the end of the field season.

Attachments

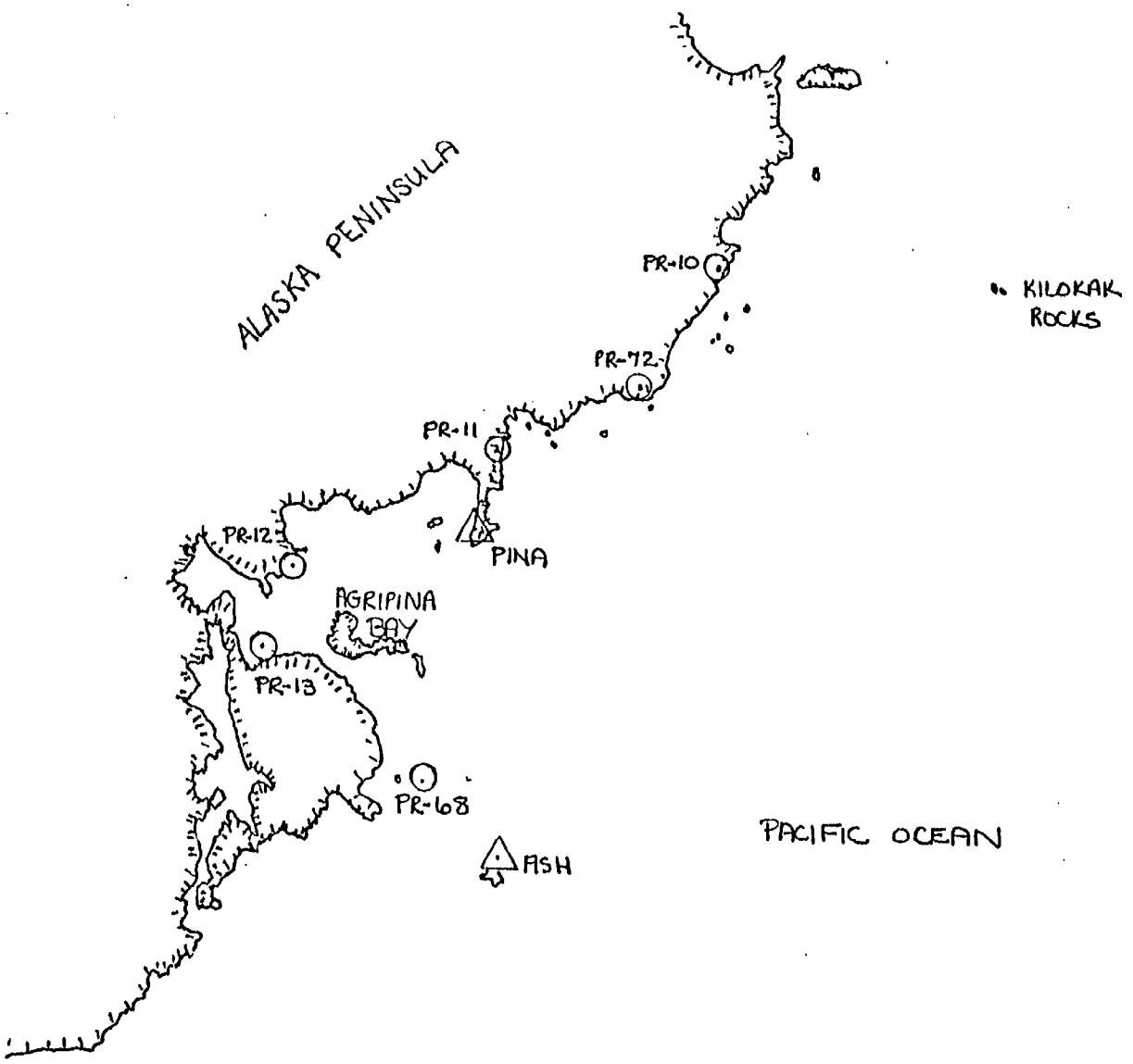
ATTACHMENT A - Displacement of Stations



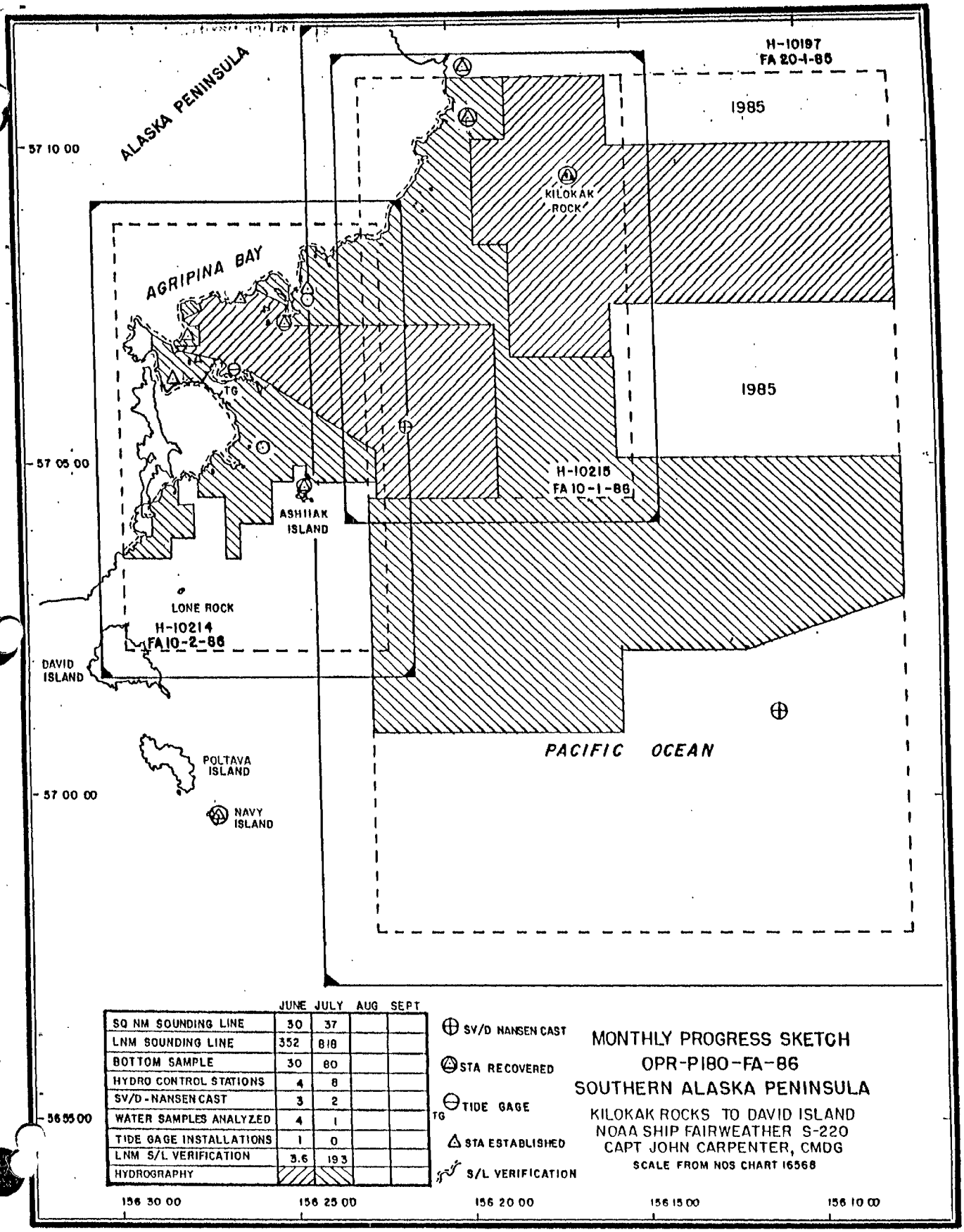
⊙ = Aerotriangulated Positions

△ = Geodetic Positions

HTTACHMENT B - Station Locations



ATTACHMENT C - Project Area (1986 field season)



	JUNE	JULY	AUG	SEPT
SQ NM SOUNDING LINE	30	37		
LNM SOUNDING LINE	352	818		
BOTTOM SAMPLE	30	80		
HYDRO CONTROL STATIONS	4	8		
SV/D-NANSEN CAST	3	2		
WATER SAMPLES ANALYZED	4	1		
TIDE GAGE INSTALLATIONS	1	0		
LNM S/L VERIFICATION	3.6	193		
HYDROGRAPHY				

⊕ SV/D NANSEN CAST
STA RECOVERED
⊖ TG TIDE GAGE
△ STA ESTABLISHED
S/L VERIFICATION

MONTHLY PROGRESS SKETCH
OPR-P180-FA-86
SOUTHERN ALASKA PENINSULA
KILOKAK ROCKS TO DAVID ISLAND
NOAA SHIP FAIRWEATHER S-220
CAPT JOHN CARPENTER, CMDG
SCALE FROM NOS CHART 16568

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

September 18, 1986 N/CG2311:PD

TO: N/MOP - Robert L. Sandquist

FROM: N/CG2 - J. Austin Yeager

SUBJECT: Aerotriangulation Stations and Shoreline Accuracy for OPR-P180-FA-86

REF: Memorandum to N/MOP from Commanding Officer, NOAA Ship FAIRWEATHER, Same Subject, dated August 19,1986

The Commanding Officer, NOAA Ship FAIRWEATHER S220, has established that the control points furnished by the Aerotriangulation Unit, Photogrammetry Branch (PB), for Job CM-8200, Cape Kilokak to Cape Kumlik, Alaska, have a datum shift of approximately 18 meters. PB investigated this discrepancy and found it correct. When this project was bridged by aerotriangulation, the control points used were based on a 1948 geodetic adjustment. A new geodetic adjustment was performed in 1976. This adjustment caused a datum shift in longitude of approximately 1 second and .05 to .1 second in latitude.

Five geodetic control stations were selected from Job CM-8200 extending over the whole project. A comparison was made between the 1948 and 1976 adjustments.

Station	1948 Adjustment	1976 Adjustment	Datum Shift	Meters
Lagoon	57°06'02.626"	57°06'02.722"	.096"	2.97
1944	156°30'28.250"	156°30'29.290"	1.040"	17.50
Port	57°00'40.699"	57°00'40.792"	.093"	2.87
1944	156°35'41.795"	156°35'42.836"	1.041"	17.57
Yant	56°50'45.505"	56°50'45.579"	.074"	2.29
1944	157°06'22.039"	157°06'23.072"	1.033"	17.51
Sut	56°34'17.611"	56°34'17.673"	.062"	1.92
1925	157°12'56.916"	157°12'57.916"	1.000"	17.08
Lag	56°40'38.729"	56°40'38.779"	.050"	1.55
1954	157°31'53.263"	157°31'54.285"	1.022"	17.40

The mean value of this adjustment is 17.4 meters in longitude and 2.3 meters in latitude. This should be taken into consideration when applying these manuscripts.

A copy of this Memorandum will be inserted in each Descriptive Report for Job CM-8200.

cc:
N/MOP21 - Richards ✓
N/CG22 - Nortrup
N/CG23 - Brewer
N/CG24 - Matsushige

APPROVAL SHEET

Descriptive Report to Accompany

Hydrographic Survey

RA-10-2-88

H-10274

Standard procedures were followed in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the PMC OPORDER in producing this survey. The data were examined daily during data acquisition and processing.

The field sheet and accompanying records have been examined by me, are considered complete and adequate for charting purposes, and are approved.

John C. Albright
Captain, NOAA
Commanding Officer

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: October 31, 1988

MARINE CENTER: Pacific

OPR: P180

HYDROGRAPHIC SHEET: H-10274

LOCALITY: Alaskan Peninsula, Northern Chiginagak Bay, Alaska

TIME PERIOD: May 23 - August 18, 1988

TIDE STATION(S) USED: 945-8522 Derickson Island, AK

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 2.19 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 9.5 ft.

REMARKS: RECOMMENDED ZONING

1. Zone direct

CHIEF, TIDAL DATUM QUALITY
ASSURANCE SECTION

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

GEOGRAPHIC NAMES

SURVEY NUMBER

H-10274

Name on Survey	A ON CHART NO. 16568	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 TP-01148 WD-01188	
ALASKA, ALASKA PENINSULA CHIGINAGAK BAY										
ALASKA (title)	X									1
ALASKA PENINSULA (title)	X									2
CHIGINAGAK BAY	X								X	3
DERICKSON ISLAND	X								X	4
LOGAN REEF	X									5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
				Approved:						17
				Charles E. Harrington						18
				Chief Geographer – N/CG2x5						19
										20
				JAN 25 1989						21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

NOAA FORM 77-27(H) (9-83)

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: H-10274

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	SMOOTH OVERLAYS: POS., ARC, EXCESS	8
DESCRIPTIVE REPORT	1	FIELD SHEETS AND OTHER OVERLAYS	5

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES						
ENVELOPES						
VOLUMES	2					
CAHIERS	3					
BOXES						

SHORELINE DATA

SHORELINE MAPS (List): TP-01148, TP-01152, TP-01153

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List): 16011 31st Ed. 6/29/85, 16013 24th Ed. 12/8/84, 16568 6th Ed, 4/29/89

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS VERIFICATION	AMOUNTS EVALUATION	AMOUNTS TOTALS
POSITIONS ON SHEET			5718
POSITIONS REVISED			1412
SOUNDINGS REVISED			525
CONTROL STATIONS REVISED			
	TIME-HOURS VERIFICATION	TIME-HOURS EVALUATION	TIME-HOURS TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	87		87
VERIFICATION OF SOUNDINGS	326		326
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	125.5		125.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		16	16
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		38.5	38.5
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	538.5	54.5	598

Pre-processing Examination by John Miller	*Beginning Date* 9/26/88	*Ending Date* 10/14/88
Verification of Field Data by Matthew Sanders, James Shofner	*Time (Hours)* 538.5	*Ending Date* 10/30/89
Verification Check by James Stringham, Bruce Olmstead, James Green	*Time (Hours)* 140.5	*Ending Date* 10/30/89
Evaluation and Analysis by Gordon E. Kay	*Time (Hours)* 54.5	*Ending Date* 10/24/89
Inspection by Dennis J. Hill	*Time (Hours)* 10	*Ending Date* 11/13/89

EVALUATION REPORT
H-10274

1. INTRODUCTION

Survey H-10274 is a basic hydrographic survey accomplished by the NOAA Ship RAINIER under the following Project Instructions.

OPR-P180-RA, dated March 6, 1987
CHANGE NO. 1, dated April 14, 1987
CHANGE NO. 2, dated September 2, 1987
CHANGE NO. 3, dated April 22, 1988

This survey occurred in Alaska off the coast of the Alaska Peninsula and covers northern Chiginagak Bay. The survey extends from the head of the bay south to approximate latitude 56°57'00"N. The surveyed area stretches from its western limits at approximate longitude 156°47'15"W, and extends eastward into Chiginagak Bay to approximate longitude 156°40'36"W. The bottom consists of mud, sand and shells. Depths range from zero to 66 fathoms.

Survey H-10274 was an exceptionally complex survey to process. Not only is the bottom topography very rugged and unpredictable, the volume of field data is extraordinarily high. There are more than 5,718 positions and 28,238 soundings within an area of 13.85 square nautical miles. Normal line spacing of 200 meters was reduced throughout the survey area to 50 meters thereby generating the high sounding volume.

Predicted tides for Kodiak, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from Derickson Island, Alaska, gage 945-8522, were used during office processing.

The following two soundings were offset to better portray the high water line.

Sounding	Position Number	Survey Position Latitude N	Longitude W
4.9 fathoms	9453/2	56°58'43.48"	156°41'11.33"
1.2 fathoms	6442/3	56°59'22.22"	156°43'33.74"

The field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The TRA and sound velocity correctors are adequate. The final electronic control correctors based on the Matthews Beach calibration were received after processing was started on this survey. The electronic control correctors were amended to reflect these final correctors.

An accompanying computer printout contains the parameters and the correctors.

A digital file has been generated for this survey as required by N/CG2 Hydrographic Survey Guideline No. 23, Completion of Digital Hydrographic Surveys, September 7, 1983. The file, however, is incomplete. Certain feature descriptive information, all line type data and miscellaneous isolated features are not in the digital record due to the present lack of digitizing resources. The user should refer to the smooth sheet for complete depiction of survey data.

2. CONTROL AND SHORELINE

Sections F and G of the hydrographer's report and the Horizontal and Electronic Control Reports for OPR-P180-RA, 1988, contain adequate discussions of horizontal control and hydrographic positioning.

Positions of horizontal control stations used during hydrography are 1988 field and published values based on NAD 27. These values were used during office processing for the computation of positions. The smooth sheet and accompanying overlays are annotated with NAD 83 adjustment ticks based on values determined by N/CG121. Geographic positions based on NAD 83 may be plotted on the smooth sheet utilizing the NAD 27 projection by applying the following corrections.

Latitude: 2.643 seconds (81.8 meters)
Longitude: -7.382 seconds (-124.8 meters)

The year of establishment of control stations shown on the smooth sheet originates with the field records and the published NGS data.

There are 49 weak fixes, angles of intersection less than 30 degrees or more than 150 degrees, noted in this survey. However, there are no significant plotting differences between the soundings located by these fixes and those in adjacent areas. Also, none of these fixes are used to position dangers to navigation. These fixes are considered acceptable.

The following registered shoreline maps apply to this survey.

	Photo Date	Class
TP-01148	July 1982, August 1983	III
TP-01152	July 1982, August 1983	III
TP-01153	July 1982, August 1983	III

Included in the hydrographer's report are two memoranda titled, "Aerotriangulation Stations and Shoreline Accuracy for OPR-P180-FA-86". The first memorandum, dated

August 19, 1986, is from the NOAA Ship FAIRWEATHER and notes the problem of the relationship between the map projection and the placement of the shoreline. The second memorandum, dated September 18, 1986, is from N/CG2 and confirms the problem as a datum shift. N/CG2 explains that the problem is with the entire shoreline map project (CM-8200) and that the aerotriangulation was bridged with control points based on a 1948 geodetic adjustment. However, a new geodetic adjustment in 1976 resulted in a shift in longitude of approximately 1 second (17.4 meters), and .05 to .1 second in latitude (2.3 meters). The shoreline on the smooth sheet has been plotted with a 1.8 millimeters shift applied to the shoreline maps, as approved in the N/MOP memorandum, dated October 8, 1986, (copy attached).

The hydrographer mentions in the Descriptive Report (section H, page 12) that the following two shoreline map features could not be located. These features are considered disproven.

Feature	TP-Position Latitude N	Longitude W
islet	56°59'36"	156°42'13"
rock	56°58'08"	156°44'57"

The following features were plotted on the smooth sheet directly from the field sheet, or from comments in the survey records, without supporting positional information.

Feature	Centered at Latitude N	Longitude W
Islets	57°00'57"	156°41'12"
Shoreline from	56°59'57"	156°40'34"
to	57°00'12"	156°40'42"
Shoreline from	57°01'55"	156°42'07"
to	57°01'57"	156°42'15"
Shoreline from	57°01'36"	156°45'03"
to	57°01'42"	156°45'02"
Island	56°58'44"	156°41'12"

3. HYDROGRAPHY

Except for the zero curve, which could not be safely developed because of the steep bathymetry, the hydrography is adequate to:

a. delineate the bottom configuration, determine the least depths, and draw the standard depth curves;

b. reveal there are no significant discrepancies or anomalies requiring further investigation; and

c. show the survey was properly controlled and soundings are correctly plotted.

4. CONDITION OF SURVEY

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3; the Hydrographic Survey Guidelines; and the PMC OPORDER, except as follows.

The hydrographer's discussion in section B of orogenic processes and subduction zones is interesting but beyond the scope of the survey. Should the information compiled into the Descriptive Report be considered essential to the documentation of the survey and originate from sources other than observation it is recommended that the source be properly cited to assist in authentication.

5. JUNCTIONS

Survey H-10274 junctions with the following surveys.

Survey	Year	Scale	Area
H-10273	1988	1:10,000	East
H-10281	1988	1:10,000	Southeast
H-10304	1989	1:00,000	Southwest

Except for H-10304, all junctions are complete. The junction with survey H-10304 has not been formally completed since that survey has not yet been processed.

Some soundings have been transferred from surveys H-10273 and H-10281 to better portray the bottom in the junction area.

6. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys within the limits of survey H-10274.

7. COMPARISON WITH CHART

Preliminary chart 16568, 5th edition, dated December 9, 1978; scale 1:106,600 (NAD 27)
Preliminary chart 16568, 6th edition, dated April 29, 1989; scale 1:106,600 (NAD 83)

a. Hydrography

Charted hydrography on chart 16568, 5th and 6th editions, originates with miscellaneous sources. Chart 16568, 6th edition, dated April 1989, has been updated with shoreline

revisions from shoreline maps and various rocks from an unascertainable source.

Survey H-10274 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items originating from miscellaneous sources.

c. Controlling Depths

There are no charted channels with controlling depths within the area of this survey.

d. Aids to Navigation

There are no fixed or floating aids located within the area of this survey.

e. Geographic Names

Names appearing on the smooth sheet and in the survey title have been approved by the Chief Geographer.

f. Dangers to Navigation

The hydrographer on August 11, 1988, reported to the Seventeenth Coast Guard District and DMA sixty five dangers to navigation within the limits of survey H-10274. These dangers consisted of many uncharted shoals, covered rocks and foul areas that exist throughout northern Chiginagak Bay. However, at the request of the US Coast Guard, N/CG2222 condensed the report into the following statement.

> "The NOAA Ship RAINIER reports numerous uncharted shoals, covered rocks and foul areas exist throughout the areas of eastern and northern Chiginagak Bay. Mariners are urged to navigate with extreme caution."

On the original message, one danger (#59), a rock covered 3.0 fathoms, positioned at latitude 56°58'13"N, longitude 156°41'42"W, contains a longitudinal error of 30 seconds. The actual position is latitude 56°58'13.13"N, longitude 156°41'11.90"W (position number 8009). On October 11, 1988, this correction was submitted to N/CG2222 for review.

The 6th edition of chart 16568, dated April 29, 1989, does not display the dangers reported by the NOAA Ship RAINIER nor does it display the general warning note submitted by N/CG2222 in lieu of a listing of the sixty five dangers originally submitted. Informal inquires did not ascertain

that the apparent charting discrepancy was resolved, therefore, N/CG2 was advised and publication of the general warning note in a Local Notice to Mariners recommended (see attached N/CG245 letter, "Dangers to Navigation Within Chiginagak Bay On Preliminary Chart 16568," dated October 6, 1989).

Survey H-10274 has been reviewed in order to reduce the number of reported dangers to navigation to only the most significant at chart scale. Twelve dangers applicable to preliminary chart 16568 and three dangers applicable to charts 16011 and 16013 were reported to the Seventeenth Coast Guard District and DMA.

Copies of the danger to navigation messages and reports submitted by the NOAA Ship RAINIER and this office are attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10274 adequately complies with the Project Instructions.

9. ADDITIONAL FIELD WORK

This is a good hydrographic survey. No additional field work is recommended.

Gordon E. Kay
Cartographer

This survey has been examined and it meets Charting and Geodetic Services' standards and requirements for use in nautical charting. Approval is recommended.

Dennis J. Hill
Chief, Hydrographic Unit

APPROVALS

I have reviewed the smooth sheet, accompanying data, and reports associated with hydrographic survey H- 10274. This survey meets or exceeds Charting and Geodetic Services' standards for products in support of nautical charting.

11/17/89

Commander Pamela Chelgren-Koterba, NOAA (Date)
Chief, Pacific Hydrographic Section

Approved: Sigmund R. Petersen 11/21/89

RADM Sigmund R. Petersen, NOAA (Date)
Director, Pacific Marine Center

Approved: _____

RADM Wesley V. Hull, NOAA (Date)
Director, Charting and Geodetic Services

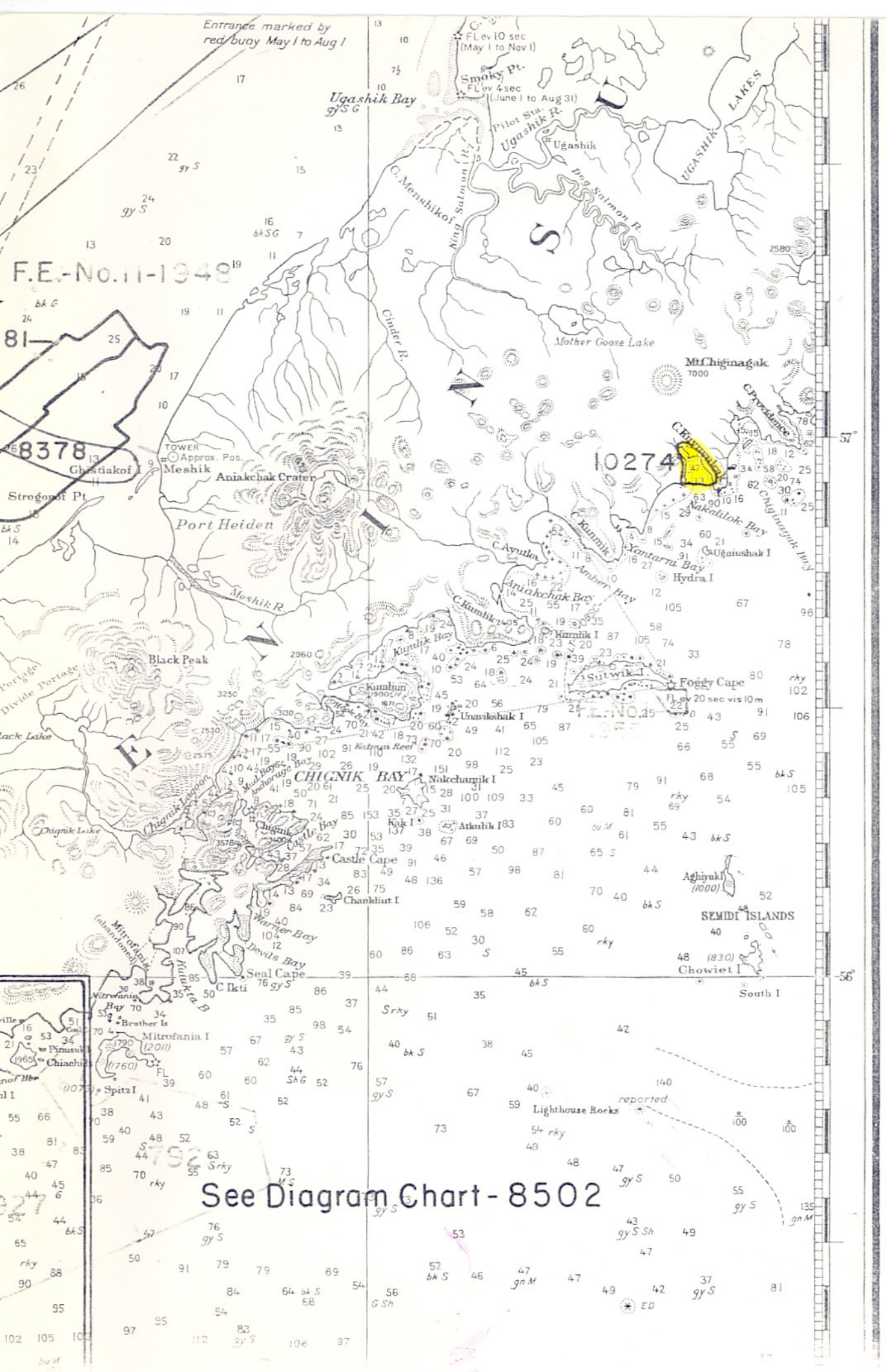


Diagram No. 8802-3

NOAA FORM 75-96
(10-83)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

EXAMINED FOR NM
GDBU
B.D.P. 3-16-90
DCH 3-23-90

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10274

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
16568	12/13/89	ALMACEN	Full ~~Part~~ Before ~~After~~ Marine Center Approval Signed Via Drawing No. 8 Reviewed by DM PERKINS 4/6/90
EOP 16568	11-6-90	Tracy Sanford	Full ~~Part Before~~ After Marine Center Approval Signed Via Drawing No. 8
16011	12/14/90	Elsie B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Full application of Drawing No. sndgs from SS thru 16568.
531	12/20/90	Elsie B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Examined, NO sndgs Drawing No. or corrections applied.
530	1/10/91	Elsie B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Drawing No. No sndgs. or corrections applied.
500	1/14/91	Elsie B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Drawing No. No sndgs. or corrections applied.
16013	2/28/91	ALMACEN	Full ~~Part~~ Before After Marine Center Approval Signed Via Drawing No. Applied two sndgs. (13, 14 FMS) from SS thru 16568.
16006	12/18/90	Elsie B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Applied 10 fms Drawing No. depth curves from SS thru 16568.
500	10-1-93	R. Elliott	Full ~~Part Before~~ After Marine Center Approval Signed Via Drawing No. 7 Re-examined thru 16006 #27 (No corrs)
530	10-1-93	R. Elliott	Full ~~Part Before~~ After Marine Center Approval Signed Via Drawing No. 36 Re-examined, no corrs thru 16006 #27
531	10-1-93	R. Elliott	Full — After.... DR6 No. 21 Re-examined, no corrs thru 16006 #27

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.