10273

Diagram No. 8502-2

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-10-1-88

Registery No. ... H-10273

LOCALITY

State ... Alaska

General Locality ... Alaska Peninsula

Sublocality ... Eastern Chiginagak Bay

1988

CHIEF OF PARTY
CAPT J.C. Albright

LIBRARY & ARCHIVES

DATE ... April 4, 1990

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

10273

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H-10273

HYDROGRAPHIC TITLE SHEET

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

FIELD NO.

RA 10-1-88

State Alaska

General locality Alaska Peninsula

Locality Eastern Chiginagak Bay

Scale 1:10,000 Date of survey May 23 - August 25, 1988

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

Vessel NOAA Ship RAINIER (2120), Launches 2123, 2124, 2125, and 2126

Chief of party CAPT John C. Albright, NOAA

Surveyed by LT Marlene Mozgala, LTJG 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

~~Protracted by~~ Evaluation by: I.A. Almacen Automated plot by PMC Xynetics Plotter

~~Verification by~~ Verification by: T. Jones, R. Shipley

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

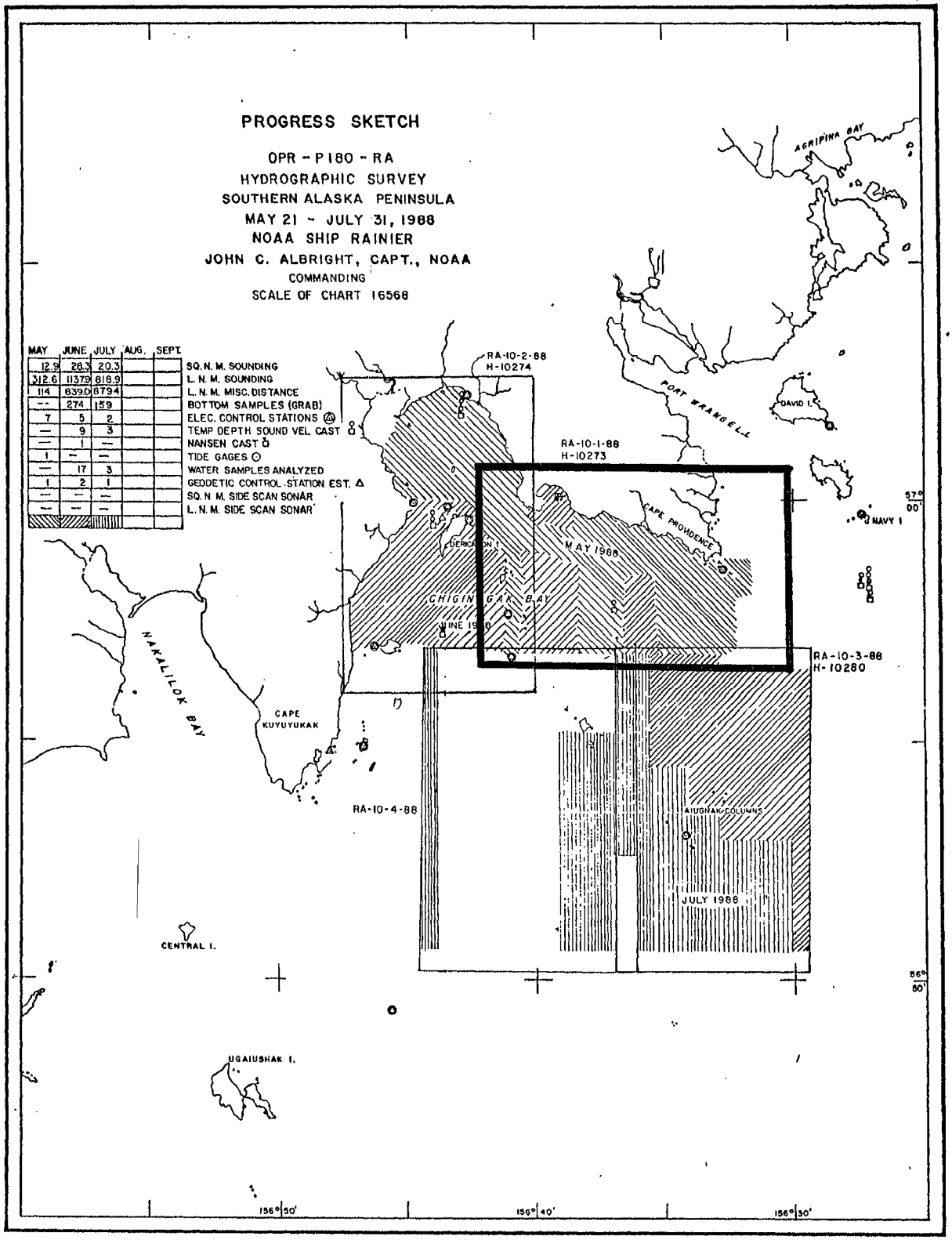
REMARKS: All times are UTC. Revisions and marginal notes in black were generated during office processing. All separates are filed with the hydrographic data, as a result page numbering may be interrupted or non-sequential.

AWOIS/SURF MSM 4/12/90

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 - JULY 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
312.6 1137.9 818.9
114 639.0 679.4
-- 274 159
7 5 2
— 9 3
— 1 —
1 — —
— 17 3
1 2 1
— — —
— — —
SQ. N. M. SOUNDING
L. N. M. SOUNDING
L. N. M. MISC. DISTANCE
BOTTOM SAMPLES (GRAB)
ELEC. CONTROL STATIONS
TEMP DEPTH SOUND VEL CAST
NANSEN CAST
TIDE GAGES
WATER SAMPLES ANALYZED
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
AGRIPINA BAY
PORT WRANGELL
DAVID I.
CAPE PROVIDENCE
MAY 1988
CHIGINAGAK BAY
JUNE 1988
NAKALILOK BAY
CAPE KUYUYUKAK
AIUGNAK COLUMNS
JULY 1988
CENTRAL I.
UGAIUSHAK I.
NAVY 1
57° 00'
56° 50'
156° 50'
156° 40'
156° 30'

Descriptive Report to Accompany Hydrographic Survey H-10273

Field Number RA-10-1-88
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 with 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 H on the revised sheet layout for the project dated September 16, 1987.

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

B. Area Surveyed

The survey is located in the central portion of the southern Alaska Peninsula, 70 nautical miles west of Kodiak Island. The survey covers the coastal waters of eastern Chiginagak Bay from Cape Providence to one mile east of Derickson Island.

The survey area is bounded by the mainland to the north, longitude 156°40'50"W to the west, and latitude 56°57'00"N to the south. The eastern limit of the survey extends 3/4 nautical mile east of Cape Providence and is shaped to junction with survey H-10243, 1987.

The shoreline within the survey area consists mainly of rocky beaches or rock ledges leading up rock cliffs of various heights to tundra-covered slopes. The central portion of the shoreline is characterized by numerous rocks and rocky ledges, making the nearshore area hazardous to vessels. The eastern portion of the shoreline has higher cliffs and is less hazardous due to the steep dropoff of the bottom just outside the surf zone. The large swells encountered in this area make the entire shoreline especially treacherous.

A small, relatively shallow bay 2/3 nautical mile wide lies near the northwest limit of the survey. An extensive rocky ledge protrudes into the bay from the eastern shore, and a sandy beach is found at the northern end. An uncharted reef lies on the east side of the bay entrance.

Numerous offshore features exist within the survey area. Three large systems of islets are found slightly southeast of Cape Providence. A number of islets also exist well offshore near the southwestern limit of the survey. An extensive foul area lies near the center of the southern survey limit. (56°57'15"N, 156°36'20"W)

The bottom throughout the survey area is extremely irregular with numerous pinnacles rising abruptly off the bottom. The shallowest soundings are in the small bay mentioned above. The deepest depths, 90 fathoms, are near the southwest limit of the survey between a system of islets and a foul area.

The bottom is composed of various materials as evidenced by samples collected and dives made across the survey area. Many of the samples surfaced empty or contained crushed shells of live organisms, thereby denoting a hard (rock) bottom. Most samples consisted of a variety of shells, displaying the productivity of the area.

Data acquisition was conducted from May 23 through August 25, 1988 (DN 144 - DN 238).

C. Sounding Vessels

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

Vessel	EDP No.	Operation
RAINIER	2120	Plessey/Nansen casts
RA-3	2123	Hydrography
RA-4	2124	Hydrography, Shoreline Verification
RA-5	2125	Hydrography, Bottom samples
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 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	145-166
2124	B046N	144-192
2125	A119N	144-170
	A103N	171-192
2126	A117N	144-153
	A114N	154-238

The echo sounders functioned properly, with occasional minor problems. On DN 154, S/N A117N in vessel 2126 malfunctioned and was replaced with S/N A114N for the remainder of the survey. On DN 171, S/N A119N in vessel 2125 was replaced for the remainder of the survey with S/N A103N due to a malfunction.

The echo sounders were continuously monitored during data aquisition. All sounding data was 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. Soundings on the final field sheets have been corrected for heave, static draft, sound velocity, and predicted tides. Settlement and squat correctors will be applied at the Pacific Marine Center** during ~~verification~~ processing. Variations in the instrument initial, stylus arm length, and belt tension are not present with the DSF-6000N.

* Final correctors were applied during office processing.
** Pacific Hydrographic Section.

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. This data was analyzed during office processing and found to contain no significant errors.

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 four Plessey SVD casts conducted in the deep water 1.9 nautical miles east of the project area (see table below). All SVD cast 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

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 on the same day as Cast #1 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 the test results was forwarded to N/CG24 on July 18, 1988. The new velocity corrector program, VELOCITY, was used to compute velocity correctors for this survey as there was no significant difference in results between the two methods.

A substantial difference in the sound velocity of the upper layers was evident when comparing Casts 1 and 3 with Casts 9 and 10. The difference is due to an increase in surface water temperature between DN 166 and DN 181. Velocity table number 1 was compiled from the mean of Casts 1 and 3 and was applied to all echo sounding data acquired between DN 144 and DN 172. Velocity table number 2 was compiled from the mean of Casts 9 and 10 and was applied to all echo sounding data acquired between DN 173 and DN 195. No velocity correctors were applied to data acquired after DN 195 by vessel 2126 because no echo sounder was used. 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. Records of settlement and squat data are included in the 1988 Corrections to Echo Soundings Report for OPR-P180-RA.

Predicted Tides

All survey soundings are reduced to MLLW, based on predicted tides at the Kodiak, Alaska 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. A request for approved tides has been forwarded to N/OMA 121 (Appendix IX).*

* 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 two 1:10,000-scale final field sheets are designated RA-10-1E-88 and RA-10-1W-88.

Mainscheme splits were run over most of the survey area in order to better define the highly irregular bottom and to locate shoal depths. In addition, several developments consisting of 25-meter line spacing were run over shoals throughout the area. As all data could not be added to the field sheets without compromising the legibility, each final field sheet is accompanied by 1:10,000-scale D.P. and development overlays. 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.

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.

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

* Pacific Hydrographic Section (N/CG 245)

F. Control Stations

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

Station	Order, Class	Date Established	Signal No.
AIUGNAK*	1,I	1944	101
BRUNO*	3,I	1986	108
CHIG*	2,I	1944	102
DERICK*	3,I	1988	104
FOUL*	1,I	1944	103
GRIZ*	3,I	1988	109
KAYAK*	3,I	1988	111
NEAVY*	1,I	1944	107
PR-16	3,I	1988	106
PR-17	3,I	1988	105 (Not used)
PR-54*	3,I	1988	110
PRO*	2,I	1944	100
RADIAL*	3,I	1988	112 (Not used)

* Stations located offshore on islands.

Positions for AIUGNAK, CHIG, FOUL, NEAVY, and PRO are from the NGS data base. BRUNO was positioned by NOAA Ship FAIRWEATHER in 1986 and is an unadjusted field position obtained from NOS. All existing control stations were recovered in accordance with methods stated in Section 3.1.4 of the PMC OPORDER. DERICK, GRIZ, KAYAK, PR-16, PR-17, PR-54, and RADIAL were positioned by closed traverses by RAINIER personnel; the field positions are not adjusted. Geographic positions are based on the North American Datum of 1927 and the Clark Ellipsoid of 1866.

See EVAL RPT sec. 2

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

Soundings were located using Motorola's Mini-Ranger III microwave positioning equipment in the HYDROPLOT range-range or range-azimuth acquisition modes. "See field sheet" methods were used in two locations to position soundings where control was absent (see Section H). ✓

Positioning Equipment

Four Mini-Ranger console-R/T pairs and eleven 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.
145-166	2123	RA-3	711/B1405
144-192	2124	RA-4	30269/B1388
144-~~160~~ 159	2125	RA-5	720/911615
~~168~~ 170-192	2125	RA-5	711/B1405
144-~~238~~ 156, 175 195-238	2126	RA-6	715/911102

✓

Range-Azimuth positioning was used on DN 175 to position RA-6 within the small bay on the northwest section of this survey. A Wild T-2, serial number 68648, was used at station GRIZ on this day. ✓

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

Transponder Serial Number	Code
G3510	A
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	Day Number	Distance	Description
Seattle, WA	082	1312 m	Sandpoint pier to Matthews Beach
Farragut Bay, AK	125	1446 m	Read Island to mainland Alaska
Kodiak, AK	148 162	1626 m	Bell Flats Hwy to NOS Tidal BM
Chiginagak Bay, AK	196	1322 m	Mainland to island N. of Derickson Is.

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 148; the true correctors differ by 3 m or less (see Electronic Control Report for OPR-P180-RA, 1988).

See page 9: Problems & unusual position configurations for applied correctors.

System Check Procedures

In accordance with PMC OPORDER 3.3.1.2, critical system checks were made at least once per survey leg; noncritical system checks were made daily when critical checks were not acquired. RA-5 (Vesno 2125) did not regularly perform system checks on days during bottom sample collection, but did so on days bracketing the non-calibrated periods.

Theodolite intersection critical calibrations were the most common method of 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 a fixed-point critical system check site at ROCK (commonly known as "Cal Rock") within northern Chiginagak Bay. Transponders located at stations PRO, PR-16, PR-17,

and DERICK were successfully calibrated at this site. Another fixed-point calibration site was positioned on the shore of an island within the bay during a theodolite calibration, and launches used this site for checking the transponder codes at stations KAYAK and PR-54.

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, KAYAK, CHIG, and FOUL were henceforth critically calibrated using this method. The following Tamaya sextants were used:

	RA-3	RA-4	RA-5	RA-6
S/N:	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 sysyem checks with transponder codes 1, 2 and 3; baseline calibrations 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 Section 3.3.1.3. of the PMC OPORDER, prorated correctors have been computed at 2 m increments for Mini-Ranger console R/T 711-B1405 as the correctors exceeded the 4 m difference between baseline calibrations. The hydrographer recommends the following prorated correctors be applied to the data acquired with the electronic positioning equipment given below: Concur. Correctors applied.

Vesno 2123	Code 2	DN 153-155	Corrector: -4m
Console 711		DN 156	-6m
R/T B1405			
	Code 3	DN 145-146	-6m
		DN 156-159	-1m
Vesno 2125	Code 3	DN 170	-3m
Console 711		DN 189	-5m
R/T B1405		DN 191-192	-7m

Appendix XI* of this report contains abstracts of baseline calibration results and graphs used to determine the applicable dates and amounts of prorated correctors.

* filed with the survey records.

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 positions 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 5m, less than 0.5mm at the scale of the survey, and do not cause significant degradation of positional quality.

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-10273 (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 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-R/T B1405 returned to Seattle
238	Last day of data acquisition for H-10273 (August 25, 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-01148 and TP-01153. TP-01148 covers shoreline north of 57°00'00"N; TP-01153 covers shoreline south of 57°00'00"N. The 18-meter westward shift of all shoreline on the two TP-sheets was applied to the 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 (copy attached) ~~(Appendix XI)~~. * office is N/CG 2

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 were no areas where verification was not accomplished.

Features which were visually verified from shoreline maps ("TP-sheets") were assigned reference numbers and heights. The reference numbers and heights were recorded in a sounding volume and on paper copies of 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 paper copies of the TP-sheets contain notes regarding the topography above the high water line; significant descriptions have been transferred to the final field sheets.

Significant offshore features and features not shown on the TP-sheets were recorded as detached positions on the raw data printouts. Cartographic codes have been included in the field records.

Shoreline details and features which were verified or added have been plotted on the field sheets in black. Detached positions and reference numbers are plotted on D.P. overlays with their four-digit and three-digit numbers, respectively. Reference numbers are preceded by an 'R'. Heights are recorded in feet and are reduced to MLLW based on predicted tides. Heights of ledges, reefs, rocks, and islets refer to the highest portion of each feature.

Three soundings obtained alongshore at 56°58'58"N, 156°33'52"W were positioned by "see field sheet" methods as no control was available in this area (position numbers 7773-7775). The "see field sheet" method was once again used to acquire four positions along the northeast shore of the islet at 56°58'35"N, 156°32'48"W (position numbers 7851-7854). Information regarding the soundings is noted in the sounding volume. The soundings are plotted in blue on the final field sheet in accordance with Hydrographic Survey Guideline Number 62. The three "see field sheet" soundings at latitude 56° 58' 58"N, longitude 156° 33' 52" W were not shown on the smooth sheet. This area was delimited as part of a foul area.

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 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. The offshore area appears to be most adversely affected by the longitudinal shift. (Reference paragraph Q, Recommendations)

Do not concur

See EVAL RPT sec. 2

Sounding lines run at or near high water occasionally passed over ledges and through foul areas. Shoreline verification showed numerous rocks exist as far as

* One islet (latitude 56° 57' 06" N, longitude 156° 36' 55" W) and one island (latitude 56° 57' 21" N, longitude 156° 40' 27" W), were shown on the Final Field Sheet in red. After analysis of all survey information during office processing these features were transferred from the shoreline manuscript and shown in black on the smooth sheet.

200 meters offshore. These rocks do not appear on the TP-sheets. The farthest offshore rocks were positioned and the areas were labeled as "foul" on the final field sheets. Although some soundings within the foul areas are relatively deep, these areas are extremely dangerous to vessels of any size due to the multitude of rocks that remain submerged during most stages of tide. Soundings over ledges and within foul areas have been retained in the records and are shown on the final field sheets. However, the hydrographer recommends that the ledges and foul area limits be charted as positioned in the sounding data; soundings within these areas should not be charted due to their hazardous nature. ✓

It is clearly evident that the photography for the two TP-sheets was flown during a stage of tide higher than MLLW, possibly as high as mid-tide. The majority of isolated rocks, groups of rocks, or islets depicted on the TP-sheets were found to be foul areas or high points of ledges exposed at MLLW. Numerous rocks also exist alongshore which are not depicted on the TP-sheets. The ledges and rocks are shown in black on the final field sheets; the TP-sheet symbols have been retained with a height or average height for the point or points to which they correspond. ✓

Some TP-sheet rocks have been omitted from the final field sheet where they occur on ledges and are not distinct features (position numbers 8053 and 8055). One offshore rock was disproved and is not shown on the final field sheet (position number 8065). The rock was not visible during shoreline verification. Depths at the TP-sheet rock location are 7 fms. Pos# 8053 : 56°58'37.36"N, 156°32'54.31"W. Pos# 8055 : 56°58'35.23"N, 156°32'58.09"W. } Part of ledge feature fringing island. Pos# 8065 : 56°58'41.06"N, 156°32'58.08"W.

Do not concur. Chart rock as part of feature found as listed below.

Detailed descriptions of the additions to the shoreline maps are included in *Appendix XI of this report. The descriptions confirm the TP-sheet photography was acquired at a stage of tide higher than MLLW. * separates filed with the survey records.

TP-01153 displays an extensive area of exposed rocks and islets centered at 56°57.1'N , 156°36.4'W. Low water verification proved the foul area extends 0.27 nautical miles further to the northwest. Detached positions and heights were obtained at rocks on the perimeter of the area (Position numbers 8002-8018). These positions are used to depict the limits of the foul area on the final field sheets. TP-sheet rocks were retained on the final field sheets as they are representative of the area. The foul area was reported as a danger to navigation. ✓

I. Crosslines

A total of 27.5 nautical miles of crosslines were run, representing 13.2% of the mainscheme hydrography. The crossline soundings in water shallower than 20 fathoms generally agree with mainscheme soundings to within 0.3 fathom as shown in a representative sample of 100 comparisons given below: ✓

Within 0.1 fm	60%
Within 0.2 fm	89%
Within 0.3 fm	99%

The crossline soundings in water deeper than 20 fathoms also agree very well with mainscheme soundings. A sample of 100 comparisons made across the sheet is shown below:

Within 0.0 fm	63%
Within 1.0 fm	97%
Within 2.0 fm	100%

In areas of very steep bottom topography, certain crossline soundings occurring next to (but not overlapping) mainscheme soundings were noted to differ by considerably more than two fathoms. However, when taking the surrounding topography into account, these soundings accurately depict the shape of the bottom.

J. Junctions

This survey junctions with four 1:10,000-scale surveys: H-10243 (1987) to the east, H-10274 (1988) to the west, H-10280 (1988) to the southeast, and H-10281 to the southwest. H-10274, H-10280, and H-10281 were conducted concurrently with this survey. Agreement of overlapping soundings between surveys was considered very good; no irregularities were found with soundings or depth contours.

See EVAL. RPT sec. 5

The following comparison demonstrates the agreement between soundings on adjacent surveys from samples of 50-100 overlapping soundings:

Agreement With H-10243: (Adjoins)	Within 0.1 fm	60%
	Within 0.5 fm	75%
	Within 1.0 fm	99%
	Within 2.0 fm	100%
Agreement With H-10274: (Joins)	Within 0.1 fm	58%
	Within 0.2 fm	82%
	Within 1.0 fm	100%
Agreement With H-10280: (Joins)	Within 0.0 fm	48%
	Within 1.0 fm	98%
	Within 2.0 fm	100%
Agreement With H-10281: (Joins)	Within 0.0 fm	68%
	Within 1.0 fm	98%
	Within 2.0 fm	100%

In areas of very steep bottom topography, certain soundings occurring next to (but not overlapping) junction soundings were noted to differ by considerably more than two fathoms. However, when taking the surrounding topography into account, these soundings accurately depict the shape of the bottom.

K. Comparison With Prior Surveys

There are no prior surveys that cover the area of this contemporary survey.

L. Comparison With the Chart

This survey was compared to NOS preliminary chart 16568, 5th edition, 9 December 1978, 1:106,600. See EVAL RPT Sec. 7

Comparison of Sounding Features

The forty-five charted soundings which lie 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 made available for comparison with this survey. There is fair agreement between charted and survey soundings as shown below:

Agreement		
	Within 0.0 fm	4%
	Within 1.0 fm	24%
	Within 3.0 fm	53%
	Within 5.0 fm	76%
	Within 10.0 fm	87%
	Within 15.0 fm	98%

There are no general shoaling or deepening trends in the survey area, or any uniform shift in the positions of depths. The techniques used for positioning and sounding during the reconnaissance surveys coupled with the irregularity of the bottom are the probable causes of the discrepancies found between soundings.

Line spacing was reduced to 50 meters over most of the survey area in order to locate shoal depths and to better define depth contours. Additional developments, which effectively covered shoals with 25-meter line spacing, were also conducted. Dive operations conducted in depths less than 10 fathoms resulted in least depths determined for forty-two features identified within the area of the developments. Each depth which was considered for dive operations was assigned a dive site number. These numbers appear on the development overlay sheets and the dive investigation forms. 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. Least depths obtained by the remaining dive investigations were deeper than those reported as dangers, and are listed below:

Object	Position	Least Depth	Position #	Dive site #
rock ridge	56°58'57.37"N 156°34'40.85"W	8.8 fm	7659	18
rock outcrop	56°58'55.22"N 156°34'38.83"W	9.4 fm	7661 *	19
rock ridge	56°58'53.76"N 156°34'37.53"W	9.3 fm	7662	20
rock outcrop	57°00'00.91"N 156°39'27.88"W	4.2 fm	8069	N/A

* Pos# 7661 was excessed for 8.8 sounding. Area is part of a large submerged rock ridge, shown as "rky" on smooth sheet.

The dive investigation forms completed for each dive contain all information regarding each feature. The forms are included within the accordian files submitted with this survey. A copy of the dangers to navigation letter included in * Appendix X of the report includes the position numbers and dive site numbers of each dive. * Danger letter attached.

The islets and ledges charted between 56°57.0'N-56°57.4'N and 156°36.1'W-156°37.1'W were verified to be part of the extensive foul area discussed in Section H and Appendix XI* of this report. The hydrographer recommends the area be charted as a foul area, with no sounding data depicted within the foul area. Concur.
* Filed with the survey records.

The hydrographer recommends least depths and general soundings found within the survey ~~data~~ area be used to compile the chart. Concur.

Comparison of Non-Sounding Features

An uncharted reef was found to exist near the northwest section of the survey at 56°59.6'N, 156°38.9'W. Detached positions were obtained around its perimeter and the highest point, 2.8 feet above MLLW, noted (DN 154, Position numbers 8019-8024). The reef is shown on the final field sheet and has been reported as a danger to navigation. The hydrographer recommends the reef be charted as found in the survey data. Concur.

Features which appear on the shoreline maps are in good agreement with charted features within the survey area. Therefore, all charted non-sounding features investigated during shoreline verification are discussed in Section H and ~~Appendix XI~~ of this report. It is recommended that all features positioned during this survey supersede those currently charted. concur.

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

Danger to Navigation Reports

Fifty-three 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 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.

See EVAL RPT sec. 7(f)

* Danger letter attached.

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 area.

O. Statistics

Vessel:	2120	2123	2124	2125	2126	Total
# of Pos	0	1489	1607	817	941	~~4854~~ 4952
NM Hydro	0	185.6	192.2	82.9	101.7	562.4

NM^2 Hydrography	12.8
NM Side-Scan	0.0
Bottom Samples	114
Tide Stations	1
Velocity Casts	4
Magnetic Stations	0
Current Stations	0

P. Miscellaneous

All bottom samples have been submitted to the Smithsonian Institution (Appendix VII).* * separates filed with survey records.

Simultaneous LORAN-C and Mini-Ranger III positioning information was acquired during bottom sample collection and was forwarded to 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 could not lock onto the 9990-Z signals. Therefore, all acquired LORAN-C time delays are from 9990-X and 9990-Y signals.

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

In accordance with Section 6.5.3.1. of the Project Instructions, the small bay centered at 57°00.0'N, 156°39.4'W was examined as a possible refuge for small fishing vessels. Foul areas and ledges were found within the bay. Although the area is accessible to very shallow-draft vessels, the hydrographer does not recommend the bay be considered a refuge. 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 in offshore features. The adjustment values as provided by the Photogrammetry Branch were applied to the shoreline manuscripts and are adequate for hydrographic survey standards.

Concur

See EVAL RPT Sec. 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 116	RANGE-AZIMUTH RTS	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 226	RANGE-AZ POSN & SND 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

The following position numbers were used by each survey vessel:

Vessel Number	Position Numbers
2123	3202-3999, 2000-2765
2124	4000-4977, 7000-7894
2125	5000-5356, 5457-5939
	119-210, 268-311
2126	6000-6842, 8000-8069

The only duplicate position numbers within the survey data are 6736-6799 (Vesno 2126; DN 156,175).

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	September, 1988
1988 Electronic Control Report for OPR-P180-RA	October, 1988
1988 Corrections to Echo Soundings Report OPR-P180-RA	October, 1988
1988 Coast Pilot Report for OPR-P180-RA	September, 1988
Marine Mammal Report, RP-12-88	September, 1988

Respectfully Submitted,

P. Scott Hill

Philip Scott Hill
Ensign, NOAA

Approved and Forwarded,

John C. Albright

John C. Albright
Captain, NOAA
Commanding Officer

1988 PRELIMINARY 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 affect the surveys. The table below shows the corrector sets.

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 subsequent 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 (North Chiginagak Bay)

Installation Date - May 22, 1988

Removal Date - Mid-September, 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 are secured to the rock with eye bolts and aircraft wire. The orifice tubing was secured in the tidal zone with rocks; above the tidal zone, it 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. A hole drilled through the staff at the 7.0-ft mark was also anchored to the 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: 7.85 ft

Gage # 67A-16205: 7.40 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 leveling and will be connected during final leveling.

Levels - Installation levels were completed on May 22, 1988, connecting the five bench marks mentioned above. Final levels will be completed in September, 1988.

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 @ 1530*
06/24/88 @ 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	Still in operation

* Marigram records 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	Still in operation

* Marigram records removed.

Station Problems

No station problems were encountered during data acquisition.

MASTER STATION LIST
OPR-P180-RA, ALASKA PENINSULA

VERSION

AUGUST 25, 1988

```
100 1  56 58 33386 156 32 48468  250 0011 000000
/PRO 1944           NGS QUAD 561564      STA. 1015

101 1  56 53 03001 156 34 16924  250 0031 000000
/AIUGNAK 1944       NGS QUAD 561564      STA. 1001

102 1  56 56 42909 156 41 05540  250 0015 000000
/CHIG 1944          NGS QUAD 561564      STA. 1004

103 1  56 57 40436 156 41 06955  250 0038 000000
/FOUL 1944          NGS QUAD 561564      STA. 1008

104 1  56 59 41039 156 42 19472  250 0023 000000
/DERICK                                 RAINIER G.P.

105 1  56 59 57448 156 44 52302  250 0050 000000   (Not used)
/PR-17 1976             PHOTO PARTY   RAINIER G.P.

106 1  57 02 14610 156 42 51465  250 0018 000000
/PR-16 1976             PHOTO PARTY   RAINIER G.P.

107 1  56 59 43183 156 27 16748  250 0028 000000
/NEAVY 1944         NGS QUAD 561561      STA. 1001

108 1  57 01 29130 156 28 26323  250 0022 000000
 /BRUNO                            FAIRWEATHER G.P.

109 1  57 00 03324 156 39 08679  250 0010 000000
/GRIZ                                   RAINIER G.P.

110 1  56 56 57537 156 46 21755  250 0329 000000
/PR-54 1976           PHOTO PARTY   RAINIER G.P.

111 1  56 55 09225 156 47 05338  250 0040 000000
/KAYAK  1988                            RAINER G.P.

112 1  56 48 55110 156 45 39206  250 0018 000000   (Not used)
/RADIAL  1988                           RAINIER G.P.

113 1  56 59 51806 156 43 21073  169 0001 000000   (Not used)
/CAL. ROCK NORTH  1988                  RAINIER G.P.

114 1  56 59 37060 156 43 42030  243 0000 000000   (Not used)
/CAL. ROCK SOUTH 1988                   RAINIER G.P.
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MJC

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

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 RUHPTEF0202 2181830-UUUU--RUHPSUU.
ZNR UUUUU
P 051830Z AUG 88
FM NOAAS RAINIER
TO CCGDSEVENTEEN JUNEAU AK
INFO NOAAMOP SEATTLE WA
DMAHTC WASHINGTON DC //NVS//
ACCT CM-VCAA
BT
UNCLAS
REQUEST THE FOLLOWING BE PUBLISHED IN THE LOCAL NOTICE TO MARINERS FOR THE 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-10273, EASTERN 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-10273 ARE APPLIED TO CHART 16568. ALL DEPTHS AND HEIGHTS REDUCED TO MLLW USING PREDICTED TIDES AND ALL POSITIONS BASED ON NAD27 DATUM.

* Depths corrected to MLLW based on actual tides.

		Pos No.	Live Site No.	Feature	
1.	ROCK COVERED 6.~~0~~ 5 FATHOMS AT 56/59/11N 156/36/25W	7647	9	Outcrop	✓
2.	ROCK COVERED 9.1 FATHOMS AT 56/59/09N 156/36/03W	7651	10	Ridge	✓
3.	ROCK COVERED 4.~~0~~ 9 FATHOMS AT 56/59/13N 156/35/58W	7655	11	Outcrop	✓
4.	ROCK COVERED 3.~~4~~ 3 FATHOMS AT 56/58/58N 156/36/12W	7650	12	Ridge	✓
5.	ROCK COVERED 3.6 FATHOMS AT 56/58/54N 156/36/09W	7649	13	Outcrop	✓
6.	ROCK COVERED 8.8 FATHOMS AT 56/58/50N 156/36/04W	7653	14	Outcrop	✓
7.	ROCK COVERED 9.~~6~~ 5 FATHOMS AT 56/58/40N 156/35/34W	7656	15	Shoal	✓
8.	ROCK COVERED 7.6 FATHOMS AT 56/58/59N 156/35/31W	7654	17	Rock	✓
9.	ROCK COVERED 8.7 FATHOMS AT 56/58/57N 156/34/41W	7663	18	Ridge	✓
10.	ROCK COVERED 10.4 FATHOMS AT 56/58/44N 156/34/28W	7660	22	Pinnacle	✓
11.	ROCK COVERED 9.~~9~~ 10 FATHOMS AT 56/58/25N 156/33/31W	5924	25	Plateau	✓
12.	ROCK COVERED 4.7 FATHOMS AT 56/57/20N 156/36/05W	5925	36	Pinnacle	✓
13.	ROCK COVERED 9.8 FATHOMS AT 56/58/07N 156/36/02W	5930	43	Dome	✓
14.	SHOAL COVERED 10.4 FATHOMS AT 56/58/48N 156/34/26W	6481+1	21		✓
15.	SHOAL COVERED 10.~~7~~ 6 FATHOMS AT 56/58/45N 156/34/39W	6490+9	23		✓
16.	~~SHOAL COVERED 9.7 FATHOMS AT 56/58/25N 156/33/33W~~ (EXCESSED)	5534+1	24	Excessed for 9.6 echo sounder developments.	✓
17.	SHOAL COVERED 9.~~9~~ 10 FATHOMS AT 56/58/14N 156/33/29W	5528+4	25		✓
18.	SHOAL COVERED 10.4 FATHOMS AT 56/58/23N 156/31/54W	5620+7	26		✓
19.	SHOAL COVERED 10.7 FATHOMS AT 56/57/53N 156/36/05W	4237+6	37		✓
20.	SHOAL COVERED 10.~~8~~ 4 FATHOMS AT 56/57/32N 156/35/49W	5682+1	38		✓
21.	SHOAL COVERED 10.4 FATHOMS AT 56/57/11N 156/35/55W	4306+7	39		✓
22.	SHOAL COVERED 10.~~5~~ 2 FATHOMS AT 56/57/59N 156/35/02W	7521+6	40		✓
23.	ROCK COVERED 7.~~3~~ 2 FATHOMS AT 56/59/34N 156/40/31W	7637	1	Pinnacle	✓
24.	ROCK COVERED 5.4 FATHOMS AT 56/59/32N 156/40/28W	7635	2A	Outcrop	✓
25.	ROCK COVERED 7.~~2~~ 1 FATHOMS AT 56/59/25N 156/40/35W	7636	2	Outcrop	✓
26.	ROCK COVERED 9.4 FATHOMS AT 56/59/36N 156/40/40W	7634	3	Rock	✓
27.	ROCK COVERED 4.~~1~~ 0 FATHOMS AT 56/59/25N 156/38/46W	7638	4	Pinnacle	✓
28.	ROCK COVERED 8.~~7~~ 6 FATHOMS AT 56/59/17N 156/38/44W	7639	5	Outcrop	✓

29. ROCK COVERED 3.0 FATHOMS AT 56/57/56N 156/40/24W 7645 6 Outcrop ✓
30. ROCK COVERED 6.6 FATHOMS AT 56/57/46N 156/40/33W 7640 7 " ✓
31. ROCK COVERED 4.4 FATHOMS AT 56/57/29N 156/40/27W 7643 8 " ✓
32. ROCK COVERED ~~3.9~~ 4.0 FATHOMS AT 56/58/02N 156/37/09W 7765 27 Pinnacle ✓
33. ROCK COVERED 6.~~7~~6 FATHOMS AT 56/57/59N 156/37/10W 7764 28 Rock ✓
34. ROCK COVERED 4.9 FATHOMS AT 56/57/57N 156/37/11W 7766 29 Outcrop ✓
35. ROCK COVERED 6.~~0~~2 FATHOMS AT 56/57/57N 156/37/15W 7767 30 Ridge ✓
36. ROCK COVERED 3.2 FATHOMS AT 56/57/44N 156/37/18W 7768 31 Outcrop ✓
37. ROCK COVERED 3.~~2~~1 FATHOMS AT 56/57/47N 156/37/2~~3~~6W ~~7769~~ 2348 (C&S) 31A Ridge ✓
38. ROCK COVERED 4.7 FATHOMS AT 56/57/32N 156/37/07W ~~5926~~ 5843 (C) 32 Pinnacle ✓
39. ROCK COVERED 2.~~8~~9 FATHOMS AT 56/57/20N 156/37/10W 5927 33 Ridge ✓
40. ROCK COVERED 3.9 FATHOMS AT 56/57/17N 156/37/11W 5928 34 Ridge ✓
41. ROCK COVERED 2.9 FATHOMS AT 56/57/11N 156/37/14W 5929 35 Pinnacle ✓
42. ROCK COVERED 2.6 FATHOMS AT 56/59/30N 156/38/47W 5937 40 Pinnacle ✓
(Excess) ~~43. ROCK COVERED 7.1 FATHOMS AT 56/59/30N 156/38/31W~~ 5933* 41 Rock ✓
44. ROCK COVERED 9.~~9~~8 FATHOMS AT 56/59/13N 156/38/44W 5932 42 Ridge ✓
45. ROCK COVERED 9.5 FATHOMS AT 56/58/08N 156/37/07W 5931 44 Ridge ✓
46. ROCK COVERED 8.2 FATHOMS AT 56/58/00N 156/40/44W 5934 45 Ridge ✓
47. ROCK COVERED 1.~~4~~3 FATHOMS AT 56/59/42N 156/38/49W 5939 46 Rock ✓
48. ROCK COVERED 1.~~5~~4 FATHOMS AT 56/59/26N 156/36/41W 5938 47 Dome ✓
49. ROCK COVERED 0.4 FATHOMS AT 56/57/05N 156/37/03W 8000 – Rock ✓
50. ROCK COVERED ~~0~~1.~~1~~0 FATHOMS AT 56/57/06N 156/37/06W 8001 – Rock ✓
51. REEF EXPOSED ~~4~~3.~~8~~8 FEET CENTERED AT 56/59/37N 156/38/56W Pos. No. 8019-8024 ✓
REEF IS 200 METERS NW-SE AND 50 TO 100 METERS NE-SW.
52. FOUL AREA WITH NUMEROUS ROCKS AND ISLETS DEFINED BY THE FOLLOWING FOUR POINTS:
56/57/35N 156/36/52W Pos. No. 8002 ✓
56/57/06N 156/36/34W 8008 ✓
56/56/56N 156/36/12W 8010 ✓
56/57/17N 156/36/15W 8014 ✓

* A 6.6 fathoms (Pos #5933) plots on this area.

53. FOUL AREA ALONG SHORE NORTH OF A LINE DRAWN BETWEEN THE FOLLOWING THREE FEATURES:
ROCK EXPOSED 3.0 FEET AT 56/59/39N 156/38/13W Pos. No. 8026 ✓
ROCK EXPOSED ~~0~~1.~~3~~0 FEET AT 56/59/58N 156/39/17W 6792 ✓
ROCK EXPOSED 3.0 FEET AT 57/00/14N 156/39/29W 6796 ✓

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
#0202

NNNN

✓ PSH

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

September 16, 1988

TO: N/CG2222 - James W. Dailey ✓

FROM: N/MOP21 - Thomas W. Richards

SUBJECT: Dangers to Navigation on Survey H-10273

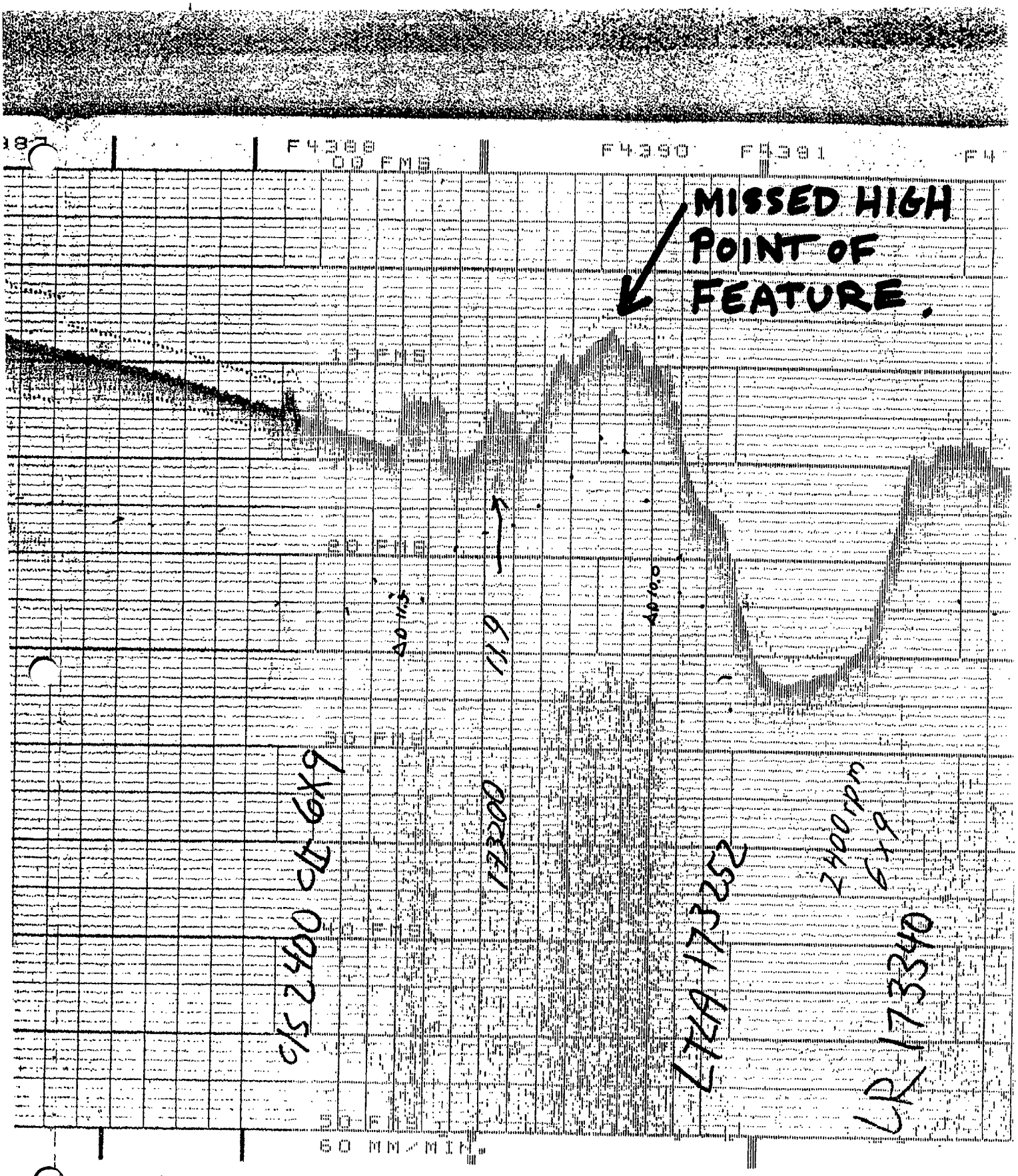
During the preprocessing examination of survey H-10273, Alaska, Alaska Peninsula, Eastern Chiginagak Bay, three additional dangers were found. These dangers should be reviewed by your office for the possible inclusion on the next edition of chart 16568, due out soon.

A shoal, covered by 9.8 fathoms, is located at latitude 56/57/31N, longitude 156/35/34W. POS. 4485, 6th out

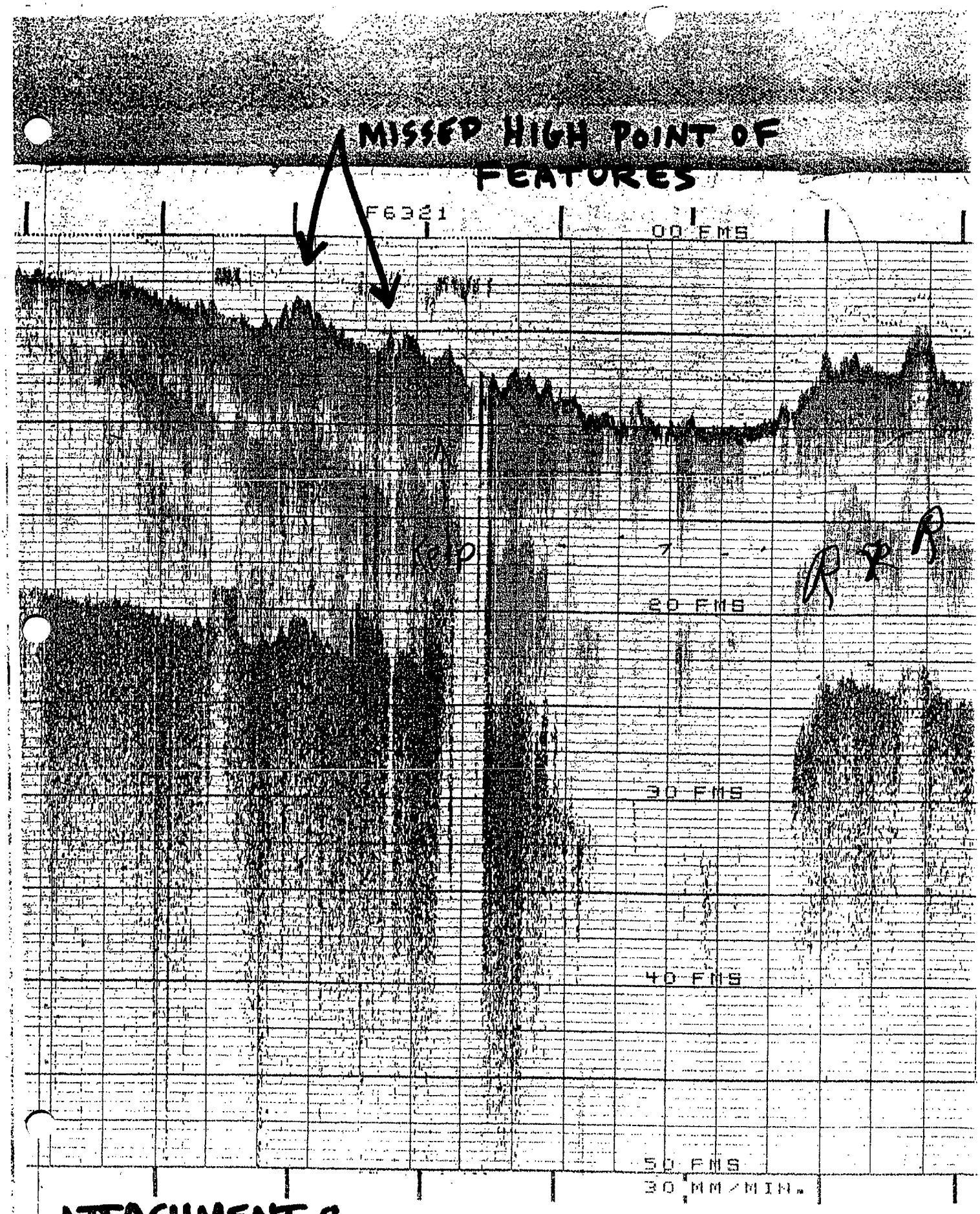
A shoal, covered by 9.2 fathoms, is located at latitude 56/57/15N, longitude 156/35/09W. POS. 6531, 7th out

A shoal, covered by 9.6 fathoms, is located at latitude 56/58/28N, longitude 156/33/30W. POS. 4639, 10th out

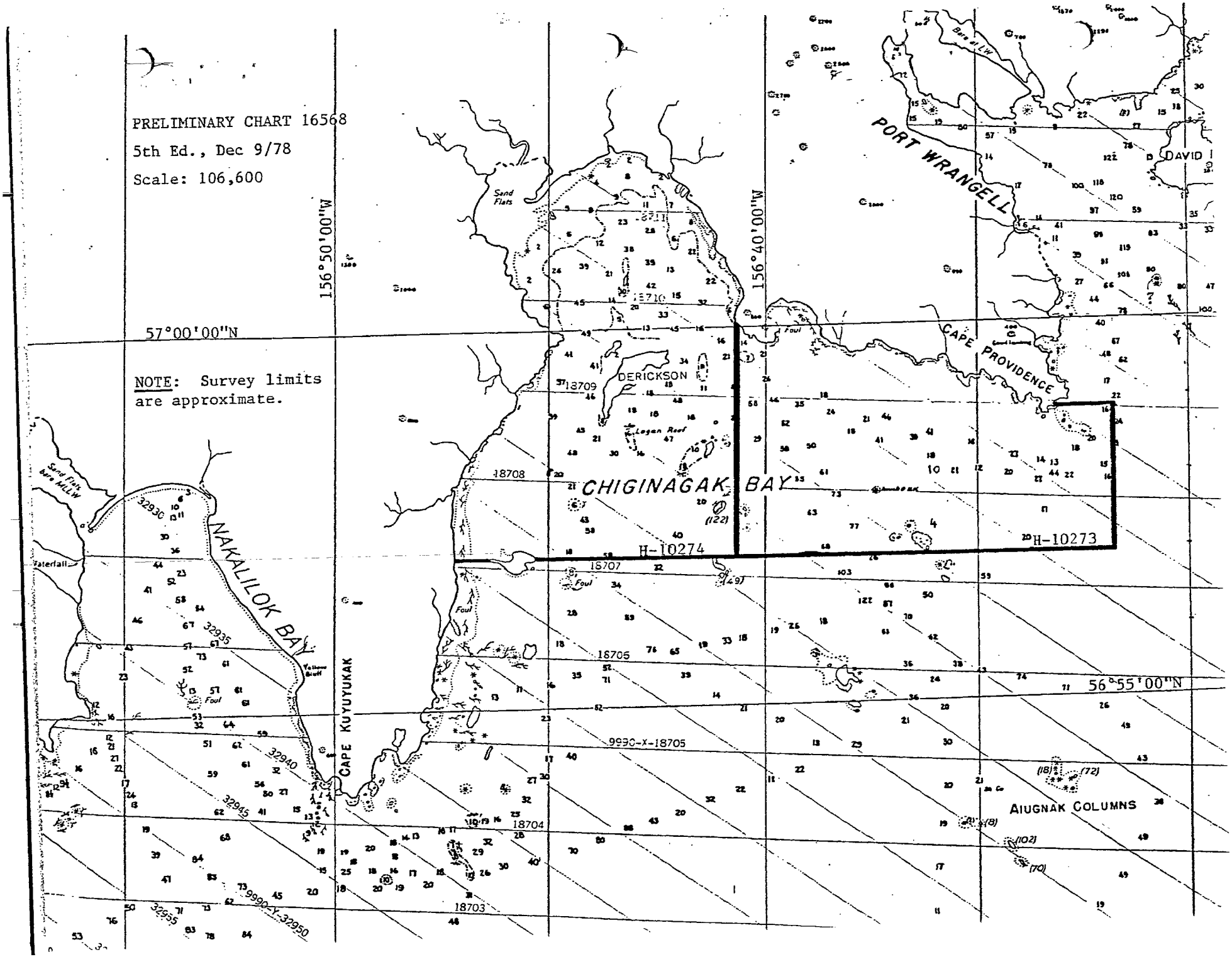
ATTACHMENT A



ATTACHMENT B



ATTACHMENT C


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
CHIGINAGAK BAY
PORT WRANGELL
CAPE PROVIDENCE
DERICKSON
NAKALILOK BAY
CAPE KUYUYUKAK
AIUGNAK COLUMNS
H-10274
H-10273
18711
18710
18709
18708
18707
18706
18705
18704
18703
32930
32935
32940
32945
32950
9990-X-18705
9990-Y-32950
Sand Flats
Bare at LW
Bare at MLLW
Foul
Logan Reef

cc: FA

RAPICOM

OFFICE OF CHARTING & GEODETIC SERVICES
WSC-1, RM. 1015
RAPICOM # 443-8701

ORIGINATOR KEVIN SHAW SEND TO TOM RICHARDS TWP

PHONE NO. FTS 443-8663 PHONE NO. 526-6835 (LOCAL)

CODE N/CG 2221 CODE N/MOP 21

PAGE 1 OF 2

MESSAGE: Tom: 9/8/88

The following page was sent electronically to 17th CGD (OAN) yesterday afternoon for inclusion in their Local Notice to Mariners 36, due out today. As we discussed yesterday, perhaps similiar notes can be used in the future when our fleet comes up with large amounts of uncharted dangers ~~that~~ too numerous to list individually as items in Notices to Mariners.

Please give Al or myself a call if you have any further questions on this matter.

Have a good day.

Kevin Shaw
Notice to Mariners Unit

FILE COPY

Please add in the General Section of your next LNM:
Southern Alaska Peninsula - Chiginagak Bay - Chart 16568
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.

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	[illegible]	10/6/89			
CG2451	[illegible]	10-6-89			
CG245	[illegible]	10/6/89			

NOAA FORM 61-2

*U.S. GOVERNMENT PRINTING OFFICE: 1987-756-853

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.

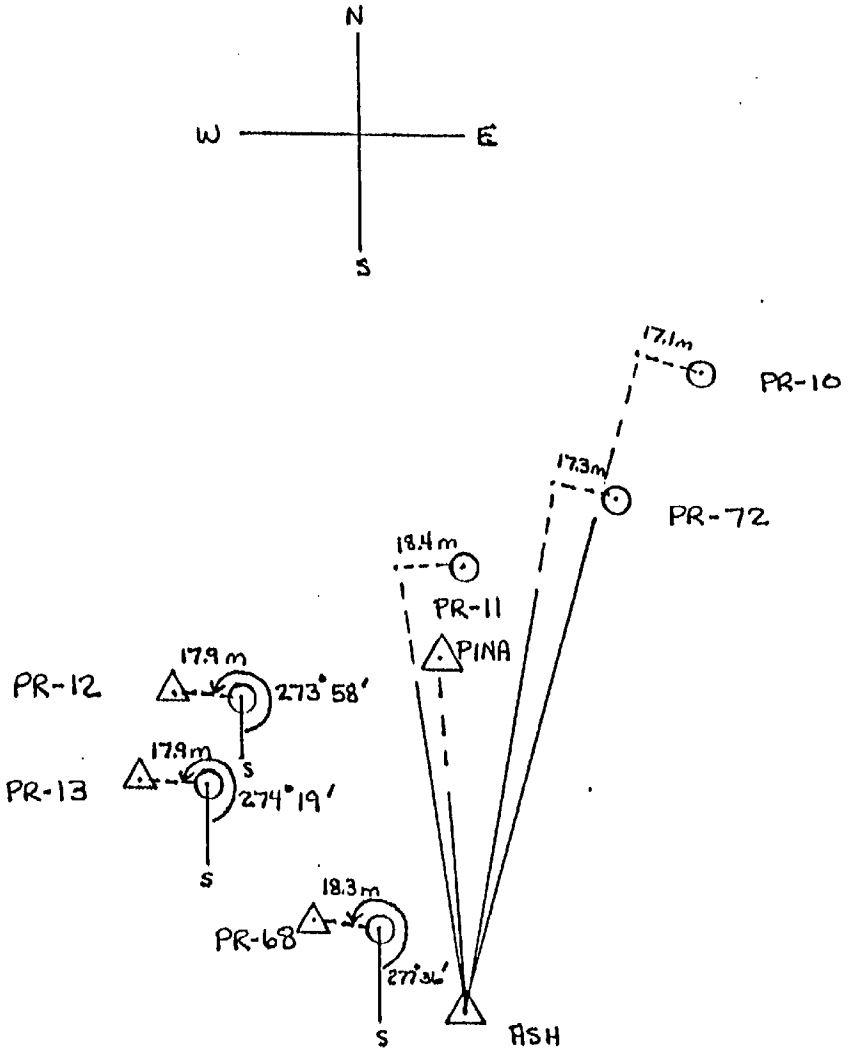
It is felt that to best display manuscript data on the final field sheets all features from the manuscript (including shoreline) should be shifted 1.8 millimeters to the west before application to the final field sheets. As work is beginning on final field sheets H-10214 and H-10215, resolution

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

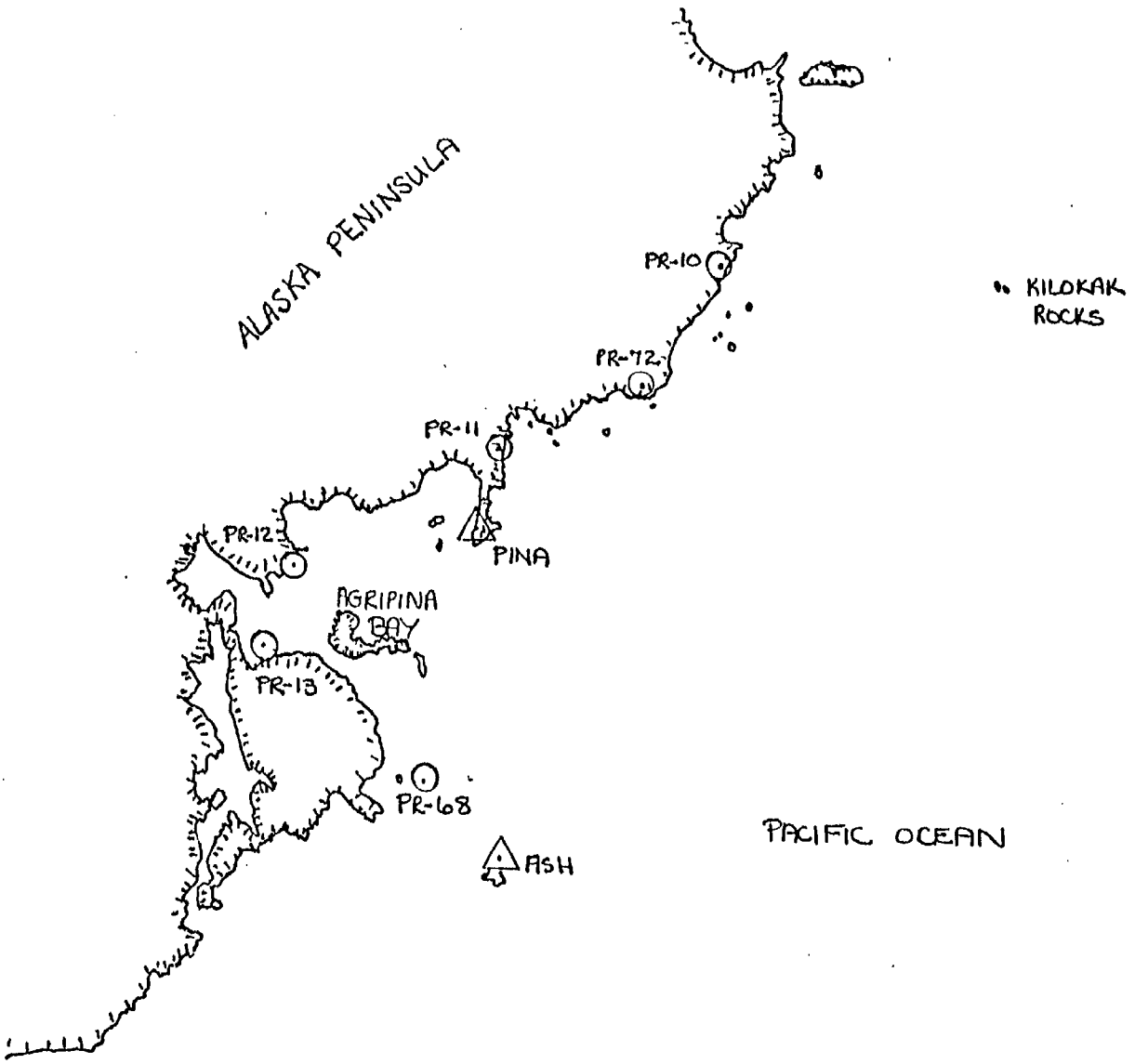
ATTACHMENT A - Displacement of Stations



⊙ - Aerotriangulated Positions

△ - Geodetic Positions

ATTACHMENT B - Station Locations



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
954	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-10-1-88
H-10273

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-10273

LOCALITY: Alaskan Peninsula, Eastern Chiginagak Bay, Alaska

TIME PERIOD: May 23 - August 25, 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

SURVEY NUMBER

H-10273

GEOGRAPHIC NAMES

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 MANUSCRIPT TP-	
ALASKA (title)										1
ALASKA PENINSULA (title)										2
CHIGINAGAK BAY	X								01148 01153	3
PROVIDENCE, CAPE	X								01153	4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
				Approved:						17
										18
				Charles E. Harrington						19
				Chief Geographer - N/CG2x5						20
				APR - 5 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-10273

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	6

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

SHORELINE DATA

SHORELINE MAPS (List): TP-01148, 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	*EVALUATION*	*TOTALS*
POSITIONS ON SHEET			4952
POSITIONS REVISED			
SOUNDINGS REVISED			288
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	130.0		130.0
VERIFICATION OF SOUNDINGS	265.5		265.5
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	142.5		142.5
COMPARISON WITH PRIOR SURVEYS AND CHARTS		21.0	21.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		36.0	36.0
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	538.0	57.0	595.0

Pre-processing Examination by J. Miller	*Beginning Date* 9/02/88	*Ending Date* 9/26/88
Verification of Field Data by T. Jones, R. Shipley	*Time (Hours)* 538.0	*Ending Date* 12/06/89
Verification Check by J. Stringham, B. Olmstead	*Time (Hours)* 138.0	*Ending Date* 12/15/89
Evaluation and Analysis by I. Almacen	*Time (Hours)* 57.0	*Ending Date* 1/23/90
Inspection by Bruce A. Olmstead	*Time (Hours)* 15.0	*Ending Date* 2/22/90

EVALUATION REPORT

H-10273

1. INTRODUCTION

Survey H-10273 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 southern Alaska Peninsula, and covers the eastern portion of Chiginagak Bay up to Cape Providence. The surveyed area extends from the coast south to latitude 56°57'00"N and stretches from longitude 156°31'15"W to longitude 156°40'50"W. The coast is generally steep and rugged. The area is characterized by ledges, reefs, isolated rocks and off-lying islets with patches of kelp. The bottom offshore is very irregular with numerous scattered shoals. The bottom generally consists of mud, sand and rocky areas. Depths range from zero to 91 fathoms.

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 field sheet parameters have been revised to center the hydrography on the smooth sheet and to change the projection to polyconic. The TRA, sound velocity and electronic control correctors are adequate. 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 1986 and 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: 2.626 seconds (81.2 meters)
Longitude: -7.372 seconds (-124.6 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 29 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 shoreline maps apply to this survey.

	Photo Date	Class
TP-01148	July 1982, Aug. 1983	III
TP-01153	July 1982, Aug. 1983	III

During the 1986 survey in the area, a shift of approximately 18.0 meters was discovered in both the shoreline and the aerotriangulated control points. This finding was the subject of the memorandum (copy attached) sent by NOAA Ship FAIRWEATHER to N/MOP dated August 19, 1986. This discrepancy was the result of an error in aerotriangulation bridging, where the 1948 rather than the most recent 1976 adjustment was used. The mean adjustment values of 2.3 meters in latitude and 17.4 meters in longitude were used in compiling the smooth sheet as recommended by the Photogrammetry Branch in the attached memorandum from N/CG2, dated September 18, 1986.

The shoreline and features from the above listed maps with applicable changes determined during this survey have been applied to the smooth sheet.

3. HYDROGRAPHY

Except for the 0-fathom depth curve which could not be safely developed along the rough and steeply sloping inshore areas of the survey, hydrography is adequate to:

a. delineate the bottom configuration, determine 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 Field Procedures Manual.

5. JUNCTIONS

Survey H-10273 junctions with the following surveys.

Survey	Year	Scale	Area
H-10243	1987	10,000	east
H-10274	1988	10,000	west
H-10280	1988	10,000	southeast
H-10281	1988	10,000	southwest

The junction with survey H-10243 has not been formally completed since this survey was previously processed and forwarded for charting. Junction comparison was made and confirmed using a file copy. Soundings are in good agreement. Some soundings were transferred to survey H-10273 to justify depth curves and portray shoaler information within the adjoining area.

The junctions with surveys H-10274, H-10280 and H-10281 are complete. Comparison is good; however, some soundings and rocks have been transferred to survey H-10273 to better portray the bottom configuration in the common area.

6. COMPARISON WITH PRIOR SURVEYS

There are no prior surveys in the common area.

7. COMPARISON WITH CHART

Chart 16568, 5th edition, dated December 9, 1978;
scale 1:106,600
Chart 16568, 6th edition, dated April 29, 1989;
scale 1:106,600

a. Hydrography

Charted hydrography on the 5th edition of the chart originates from the 1944 USC&GS reconnaissance surveys (BP39179 & BP39630), supplemented by information from miscellaneous sources. None of these documents were available during processing; however, comparison with data originating from these surveys as depicted on the chart indicates satisfactory agreement. The 6th edition of chart 16568 has been updated from the Dangers to Navigation Report submitted by this office for this survey and the contemporary shoreline maps.

Survey H-10273 is adequate to supersede charted hydrography within the common area.

b. AWOIS

There are no AWOIS items within the limits of survey H-10273.

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 reported to the USCG, DMAHTC and N/CG222 fifty-three (53) dangers to navigation located within the limits of the survey. These dangers consisted of uncharted rocks, shoals and foul areas. However, at the request of the Coast Guard, N/CG2221 transmitted to the Seventeenth Coast Guard District in Juneau, Alaska, on September 8, 1988, the following statement concerning the condition of the survey area for inclusion to 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 with extreme caution."

Three (3) additional dangers were found during office processing. These items were submitted to N/CG2222 for review and subsequently included in the compilation of the 6th edition of chart 16568.

The dangers originally reported by the hydrographer and the general warning note submitted by N/CG2221 were not applied on the 6th edition of the chart. The Nautical Charting Division was advised of this omission and reissuance of the general warning note recommended.

Copies of the danger to navigation messages and reports applicable to this survey are attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey H-10273 adequately complies with the project instructions.

9. ADDITIONAL FIELD WORK

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

Isagani A. Almacen
Cartographer

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

Bruce A. Olmstead
for Dennis Hill
Chief, Hydrographic Unit

APPROVALS

I have reviewed the smooth sheet, accompanying data, and reports associated with hydrographic survey H-10273. This survey meets or exceeds Charting and Geodetic Services' standards for products in support of nautical charting.

3/5/90

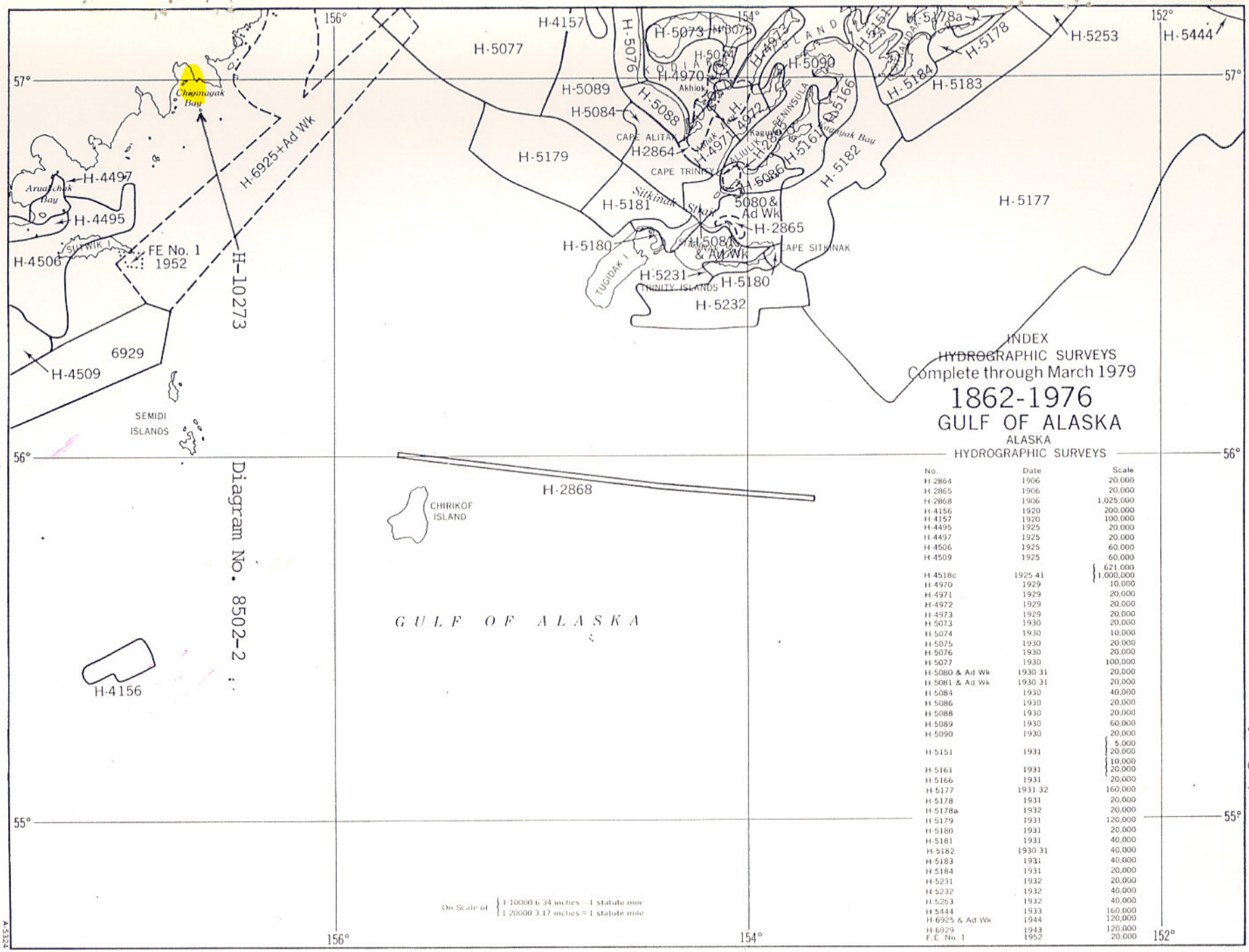
Commander Pamela Chelgren-Koterba, NOAA (Date)
Chief, Pacific Hydrographic Section

Approved: Sigmund R. Petersen 3/8/90

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

Approved: Wesley V. Hull 4/10/90

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



On Scale of { 1:10000 6.34 inches = 1 statute mile
1:20000 3.17 inches = 1 statute mile

INDEX
HYDROGRAPHIC SURVEYS
Complete through March 1979

1862-1976
GULF OF ALASKA
ALASKA
HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-2864	1906	20,000
H-2865	1906	20,000
H-2868	1906	1,025,000
H-4156	1920	200,000
H-4157	1920	100,000
H-4495	1925	20,000
H-4497	1925	20,000
H-4506	1925	60,000
H-4509	1925	60,000
H-4518c	1925-41	621,000 1,000,000
H-4970	1929	10,000
H-4971	1929	20,000
H-4972	1929	20,000
H-4973	1929	20,000
H-5073	1930	20,000
H-5074	1930	10,000
H-5075	1930	20,000
H-5076	1930	20,000
H-5077	1930	100,000
H-5080 & Ad Wk	1930-31	20,000
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H-5084	1930	40,000
H-5086	1930	20,000
H-5088	1930	20,000
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H-5090	1930	20,000
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H-5161	1931	20,000
H-5166	1931	20,000
H-5177	1931-32	160,000
H-5178	1931	20,000
H-5178a	1932	20,000
H-5179	1931	120,000
H-5180	1931	20,000
H-5181	1931	40,000
H-5182	1930-31	40,000
H-5183	1931	40,000
H-5184	1931	20,000
H-5231	1932	20,000
H-5232	1932	40,000
H-5253	1932	40,000
H-5444	1933	160,000
H-6925 & Ad Wk	1944	120,000
H-6929	1943	120,000
F.E. No. 1	1952	20,000

DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Washington, D.C.

Hydrographic Index No. 117A

NOAA FORM 75-96
(10-83)

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

EXAMINED FOR NM
GDBU
2-31-90 JB

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10273

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	10-10-90	Russell P Kennedy	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 9
500	10-4-93	K Elliott NK	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 7 Exam, no corrs, thru 16006 #27
530	10-4-93	K. Elliott NK	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 36 Exam, no corrs, thru 16006 #27
531	10-4-93	K. Elliott	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. 21 Exam, no corrs, thru 16006 #27
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED

NOAA FORM 75-96
(10-83)

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

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CHART	DATE	CARTOGRAPHER	REMARKS
16568	12/14/89	ARMACOST	Full ~~Part~~ Before ~~After~~ Marine Center Approval Signed Via full application of
			Drawing No. Sndgs. from SS,
16011	12/14/90	Blair B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Full application
			Drawing No. of Sndgs from SS thru 16568.
16013	2/27/91	ARMACOST	Full ~~Part Before~~ After Marine Center Approval Signed Via Applied 9½ fm (PA) sndg.
			Drawing No. @ 56°58'00"N, 152°36'00"W and a rock @ 52°59'30"N,
			152°39'00"W from SS thru 16568.
531	12/20/90	Blair B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. No sndgs. or corrections applied.
16006	12/18/90	Blair B. Dominguez	Full ~~Part Before~~ After Marine Center Approval Signed Via Applied 10 fms
			Drawing No. depth curves from SS thru 16568.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.

SUPERSEDES C&GS FORM 8352 WHICH MAY BE USED.