FE328

Diagram No. 8551-4

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

FE328

Type of Survey ... Field Examination

Field No. ... FA-10-1-89

Registery No. ... FE-328

LOCALITY

State ... Alaska

General Locality ... Orca Inlet

Sublocality ... Cordova

1989

CHIEF OF PARTY
CDR T.W. Ruszala

LIBRARY & ARCHIVES

DATE ... October 26, 1989

GP
Ref H-10029
L-1532(89)
CHS

16710
16709
16700
} SIGN OFF ON RECORD OF APPLICATION

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

NOAA FORM 77-28 (11-72)

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

HYDROGRAPHIC TITLE SHEET

REGISTER NO.

FE-328

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.

FA 10-1-89

State Alaska

General locality Orca Inlet

Locality Cordova

Scale 1:10,000 Date of survey DN 146 - DN 147 26 May - 27 May

Instructions dated _____ Project No. _____

Vessel Launch 2025

Chief of party CDR Thomas W. Ruszala

Surveyed by ENS Neander, ENS DaBoul

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

Graphic record scaled by FAIRWEATHER Personnel

Graphic record checked by FAIRWEATHER Personnel

Verification by: C.R. Davies Automated plot by PMC Xynetics Plotter

Evaluation by: C.R. Davies

Soundings in ~~fathoms~~ feet at ~~MLW~~ MLLW

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 ✓ RWD 11/89

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

Descriptive Report
Reconnaissance Survey, Orca Inlet, Cordova, Alaska
1:10,000 scale
NOAA Ship FAIRWEATHER S220
Commander Thomas W. Ruszala
1989

A. Project ✓

Orca Inlet Reconnaissance Survey is a hydrographic survey conducted at the request of the Commanding Officer of the U.S. Coast Guard Cutter SWEETBRIER. The Hydrographic Manual (fourth edition) through Change Number 3, Field Procedures Manual, and Hydrographic Survey Guidelines apply.

The purpose of this survey is to determine if the shoals in West Passage, Orca Inlet have shifted. The USCGC SWEETBRIER will use this information to determine where to relocate navigational aids.

This survey was accomplished as an ancillary task during FAIRWEATHER's Alaska Spill Assessment Program (Project FA-89-01). Due to scheduling commitments with the scientific team assigned to FA-89-01, only one day was allotted for this survey.

B. Area Surveyed ✓

This survey was conducted in the general vicinity of Orca Inlet, Cordova, Alaska.

The northern survey limit is latitude 60/35/13N and the southern survey limit is latitude 60/33/59N. The eastern survey limit is longitude 145/44/27W and the western survey limit is longitude 145/46/25W.

The field work for this survey was accomplished on May 26, 1989, DN 146 (data acquisition carried over into DN 147, UTCT.

C. Sounding Vessels ✓

Hydrographic data for this survey was acquired using one vessel type. Jensen survey launch FA-5 was designated vessel number 2025. No unusual sounding vessel configurations were used.

D. Sounding Equipment and Corrections to Echo Soundings ✓

FAIRWEATHER's survey launch, equipped with a dual-beam Raytheon DSF-6000N echo sounder, was used to obtain soundings for this survey. The following is a list of sounding equipment used on FA-5:

Sounding Equipment
VESSEL 2025

Date (DN)	RAYTHEON DSF-6000N
146-147	B049N

Echo-sounding equipment was monitored continuously while on line. All hydrographic data were scanned at least twice to insert peaks and deeps between soundings and to ensure proper depth digitization.

There were three echo sounder problems encountered during the course of this survey:

1. During the test of the echo sounder on the three fathom bar check, it was noted that there was no low-frequency trace. Therefore, all soundings are from the high-frequency beam data.

2. During fix numbers 5061-5063, the echo sounder stopped functioning; no trace or digital readout appeared. The DSF-6000N was switched off and on in the middle of the line, after which the echo sounder operated properly. This line was not re-run due to time constraints. Also 5054-5055, where echo sounder shows no bottom.

3. Due to the echo sounder being modified for HDAPS operation, no soundings were logged onto the data tape. All soundings were manually scanned from the graphic trace and entered onto an edited master tape via program ELINORE.

One bar check at three fathoms was conducted on the day field work was accomplished to ensure that the Raytheon DSF-6000N echo sounder was operating properly and to verify the static TRA value. Sounding corrections determined for this survey apply to only the high-frequency sounding data.

Due to time constraints, the settlement and squat test results for launch 2025 were taken from a test performed on April 20, 1988, in Excursion Inlet, Alaska. The test results were used to plot settlement and squat curves for the launch. Measurements were conducted in accordance with Section 4.9.4.2 of the Hydrographic Manual. Applicable settlement and squat corrections for launch 2025 have been applied to the TC/TI tape. See Appendix IV.*

Due to time constraints, an historic static transducer draft value of 0.3 fathoms, measured on April 20, 1988 in Excursion Inlet, Alaska, was used for launch 2025. On this date determination of launch transducer depths was obtained through physical measurement. An oversized carpenter's square was constructed of angle iron, with foot and tenth markings noted on the rise. Divers held the foot of the carpenter's square flush against the transducer while the

* filed with the hydrographic data

rise was leveled by personnel on the pier using a circular bubble level.

TC/TI tapes were made in accordance with the Field Procedures Manual, Figure 6.2. Printouts of TC/TI tapes are included in Appendix IV* of this report.

Actual tides were reduced to the datum via correction factors for Cordova, Alaska, supplied by the Pacific Operations Group, Seattle, Washington. The actual tide reducers used for reduction of soundings on the final field sheet were obtained by reading the tide staff at 12 minute intervals during the period of hydrography and constructing a tide reducer graph for interpolation of reducers at 0.2 foot intervals. For further information, refer to Appendix II. Field tide note attached to this report.

One velocity cast, using a SEACAT CTD, serial number 192509-277, was taken for sound velocity correctors. Velocity Table I and attached worksheets are included in Appendix IV.* Velocity correctors were applied to the final field sheet.

E. Hydrographic Sheets ✓

The final field sheet was plotted aboard FAIRWEATHER using a DEC PDP/8e computer and Houston Instruments DP-3 plotter. The survey consists of one final field sheet.

All hydrographic data for the survey will be forwarded to the Pacific Marine Center, Seattle, Washington, for ~~verification~~ office processing and smooth plotting.

A copy of the final field sheet, stamped "Not For Navigation", was provided to the Commanding officer, USCGC SWEETBRIER.

F. Control Stations ✓

All horizontal control stations used for electronic control of this survey were Third-Order, Class I geodetic stations. The survey marks for each station were found in good condition. Due to time constraints, the stations were not recovered by the methods outlined in the Field Procedures Manual, Section 5.2.4. All geodetic positions are based on the North American Datum of 1983. A list of all control stations used for this survey, and recovery notes for these stations, can be found in Appendix V* Electronic Control. No separate horizontal control report will be written for this survey.

G. Hydrographic Position Control ✓

Hydrographic position control was accomplished using the Motorola Mini-Ranger III system. The control configuration

* filed with the hydrographic data

consisted of range/range for all positioning. The following table contains a list of Mini-Ranger equipment used during this survey. Mini-Ranger base-line calibrations (BLCs) were conducted in accordance with the Field Procedures Manual, Section 3.1.2.1.

Mini-Ranger Equipment

Vessel Number	Console/RT	Remote (shore units)	
2025	B0323/B1398	Code 5	SN E2693
		Code 6	SN B1215
		Code 7	SN 911723

Beginning BLCs were performed on DN 129, 1989, along a distance of 1031.5 meters between two recoverable marks (Naval Reserve Pier to PMC Pier B) across Lake Union in Seattle, Washington. The critical system check taken on DN 146, in Orca Inlet, for codes 5, 6 and 7, showed a maximum difference of -4 meters and verifies the beginning BLC correction value. The beginning BLC correction values have been applied to the positioning data of this survey. An ending baseline will be performed at the end of the current project, in the fall of 1989. Ending calibration data will be forwarded to the Pacific Marine Center at that time. For further information regarding calibrations refer to Appendix V.* Beginning BLC correctors were held for office processing.

Hydrographic positioning equipment was critically system checked on the day data were collected (DN 146). A non-critical system check was obtained by the Mini-Ranger three-range method, which was used to position the floating aids to navigation (see Section N). All hydrographic positioning equipment was found to be accurate within the limits set forth by the Field Procedures Manual, Sec. 3.1.2.2. Critical system checks were accomplished using the theodolite/EDMI range azimuth method. The theodolite used was a Wild T-2 theodolite with serial number 276503, the EDMI used was a Hewlett-Packard HP 3808A with serial number 1723A00172.

The launch R/T unit was located directly over the transducer, eliminating the need for ANDIST correctors.

H. Shoreline See Evac Report, section 2

There was no shoreline within the survey limits.

I. Crosslines ✓

Due to time constraints, crosslines were not run.

* filed with the hydrographic data

J. Junctions ✓

This survey junctions with no contemporary surveys.

K. Comparison with Prior Surveys See EVAL Report section 6

No prior surveys for this area were available to FAIRWEATHER.

L. Comparison with the Chart See EVAL Report section 7

Comparisons were made between this survey and Chart 16710 (14th ed., July 4, 1987, 1:30,000, NAD 83).

The shoals on either side of the western channel into Orca Inlet were found by this survey to be predominantly shoaler than the chart by 2 to 15 feet. A Dangers to Navigation Report for inclusion in the Local Notice to Mariners was sent to the Seventeenth United States Coast Guard District and the Defense Mapping Agency on June 27, 1989. A copy of this report is included in ~~Appendix X~~ this report.

There were no AWOIS items located within survey limits. ✓

M. Adequacy See EVAL Report section 4 and 9

Due to time constraints and fathometer problems (discussed in Section D), a complete basic survey was not performed. Consequently, the results of this survey should be viewed as a general reconnaissance of the area. This survey is not adequate to supercede prior surveys. See Section 6 of EVAL Report

N. Aids to Navigation See EVAL report section 7

Four floating aids to navigation were positioned within the limits of this survey:

West Channel Lighted Buoy 3,	Light List # 25635
West Channel Lighted Buoy 4,	Light List # 25640
Channel Lighted Buoy 18,	Light List # 25595
Channel Junction Lighted Bell Buoy OI,	Light List # 25600

The characteristics of the buoys were found to be the same as listed in the 1989 Light List (volume VI).

A comparison of the survey positions for the buoys were made with the positions in the Light List, with the following results:

Pos. #	Buoy	Inv. Distance (m) to L.L. Position
5120	OI	27.5
5121	3	131.6
5122	4	92.2
5123	18	106.0

The discrepancy in the positions may be attributed to the scope of the buoy's anchor chain and the positioning method used by the USCG (sextant angles to landmarks).

No fixed aids to navigation, cables, bridges, or ferry routes fall within the survey limits. ✓

O. Statistics ✓

Vessel	2025
Positions	111
Nautical Miles	10.2
Square Nautical Miles	1.0
Bottom Samples	0
Velocity Casts	1
Tide Stations	1 (The Cordova primary tide gage staff was used, no gages were set).
Days of Production	1

No current or magnetic stations were established during this survey.

P. Miscellaneous ✓

No anomalous tidal conditions or potentially dangerous currents were observed.

Q. Recommendations ✓

The 1964 earthquake which struck the Prince William Sound area caused major changes to the bottom topography. Local fishermen have reported that the charted depths in many areas of Prince William Sound are erroneous. New surveys of Prince William Sound are recommended. concur

R. Automated Data Processing

The following programs were used for data acquisition or processing:

Number	Program	Version Date
RK 112	Range-Range Real Time Plot	04/23/84
RK 201	Grid, Signal, and Lattice Plot	04/18/75
RK 221	Range-Range Off Line Plot	05/30/88
RK 300	Utility Computations	10/21/80
RK 330	Data Reformat and Check	05/04/76
AM 500	Predicted Tide Generator	11/10/72
AM 602	Elinore	12/08/82

S. Referral to Reports

Corrections to echo soundings data, electronic control data, and horizontal control recovery notes are included in the appendices. With the exception of final base line calibration data (to be collected at the end of the field season), no separate reports will be submitted.

SIGNAL LISTING

ORCA INLET RECON SURVEY

26 May 1989

GRASS, 1849 1030 601454320034
100 0 60 34 18802 145 46 54775 250 0011 000000

ACROSS, 1983 1001 601454320035
102 0 60 33 35730 145 48 23753 250 0004 000000

NARD 1933 1037 601454320015
104 0 60 33 00641 145 46 15698 250 0011 000000

vjm

FIELD TIDE NOTE
RECONNAISSANCE SURVEY, ORCA INLET, CORDOVA, ALASKA

The following primary tide gage station was utilized to determine tide correctors for this survey:

NAME	STATION NO.	POSITION
CORDOVA, ALASKA	945-4050	60/33.5N, 145/45.2W

FAIRWEATHER was not able to gain access to the tide gage building in Cordova. After cleaning the staff FAIRWEATHER personnel recorded the staff readings every twelve minutes during survey operations. The tide staff readings were recorded in UTC time. Final tide correctors were determined from a graph made from these readings.

Based on satellite communications (INMARSAT) with N/OMA1214, -6.93 feet was applied to all staff readings to reduce the observations to MLLW. Thus, final tide correctors applied to this survey are based on actual tides, reduced to MLLW.

The tide staff at Cordova is within close proximity to the survey area (within one nautical mile). No zoning or time corrections are recommended for this area. There were no anomalous conditions which affected the staff readings.

R 281601Z JUN 89
FM NOAASHIP FAIRWEATHER
TO CCGDSEVENTEEN JUNEAU AK
INFO ZEN/NOAAMOP SEATTLE WA
DMAHTC (NAVWARN) WASHINGTON DC//MCNM//
ACCT CM-VCAA
BT
UNCLAS
SUBJ: DANGERS TO NAVIGATION
1. DURING SURVEY OPERATIONS OF THE WESTERN CHANNEL TO ORCA INLET, CORDOVA, AK, NOAA SHIP FAIRWEATHER FOUND THAT THE SHOALS ON EITHER SIDE OF THE CHANNEL, CENTERED AT LATITUDE 60/34/45N, LONGITUDE145/45/25W, WERE FOUND TO BE PREDOMINANTLY SHOALER THAN THE CHART BY 2 TO 15 FEET.
2. SIGNIFICANT SHOALING HAS OCCURRED AT THE FOLLOWING LOCATIONS (DEPTHS ARE CORRECTED TO MLLW; POSITIONS ARE BASED ON NAD 83; SURVEY DEPTHS WERE COMPARED TO CHART 16710):

CHARTED DEPTH (FT)	LATITUDE	LONGITUDE	SURVEY DEPTH (FT)
18	60/34/35N	145/45/52W	3
29	60/34/35N	145/45/37W	24
24	60/34/20N	145/45/54W	12
14	60/34/41N	145/44/42W	8
11	60/34/43N	145/44/48W	4
24	60/34/52N	145/45/57W	19

3. THE AFFECTED NAUTICAL CHARTS ARE AS FOLLOWS:
16710 14TH ED., JULY 04, 1987
16709 18TH ED., JUNE 28, 1980
16700 23RD ED., JULY 27, 1987
4. CONFIRMATION LETTER TO FOLLOW.
BT

RTTY
281730Z JUN 89
HAND CARRY COMCENT

CO _R__ XO _X__ FOO _O__

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
NOAA Ship FAIRWEATHER
1801 Fairview Ave. East
Seattle, WA 98102-3767

June 27, 1989

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

Dear Sir,

At the request of the commanding officer, U.S.C.G.C. SWEETBRIER, NOAA Ship FAIRWEATHER conducted a reconnaissance survey of the western channel to Orca Inlet, Cordova, Alaska. The shoals on either side of the channel, centered at latitude 60/34/45N, longitude 145/45/25W, were found by this survey to be predominantly shoaler than the chart by 2 to 15 feet.

Significant shoaling has occurred at the following locations (depths are corrected to MLLW; positions are based on NAD 83; survey depths were compared to chart 16710):

Charted depth (ft)	Latitude	Longitude	Survey Depth (ft)
18	60/34/35N	145/45/52W	3
29	60/34/35N	145/45/37W	24
24	60/34/20N	145/45/54W	12
14	60/34/41N	145/44/42W	8
11	60/34/43N	145/44/48W	4
24	60/34/52N	145/45/57W	19

The affected nautical charts are as follows (all are NAD 83):

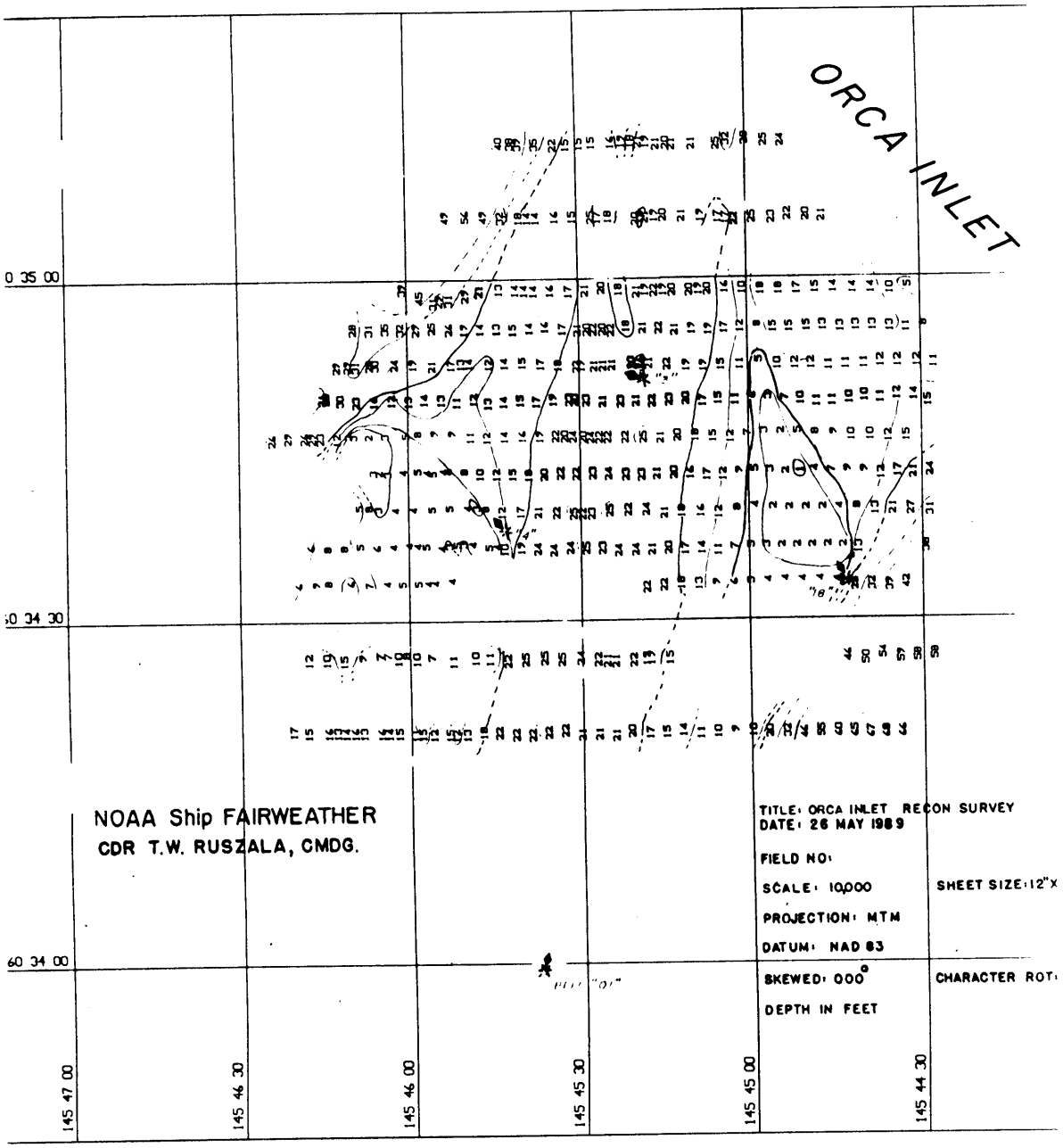
Chart Number	Edition
16710	14th ed., July 04, 1987
16709	18th ed., June 28, 1980
16700	23rd ed., July 27, 1987

Questions concerning this report should be directed to the Chief, Nautical Chart Branch, Pacific Marine Center, 7600 Sand Point Way N.E., Seattle, WA 98115, telephone 206-526-6835.

C.C. N/CG221
DMAHTC

Sincerely,

Thomas W. Ruszala,
Commander, NOAA
Commanding Officer


ORCA INLET
0 35 00
60 34 30
60 34 00
145 47 00
145 46 30
145 46 00
145 45 30
145 45 00
145 44 30
NOAA Ship FAIRWEATHER
CDR T.W. RUSZALA, CMDG.
TITLE: ORCA INLET RECON SURVEY
DATE: 26 MAY 1989
FIELD NO:
SCALE: 10,000
SHEET SIZE: 12"X
PROJECTION: MTM
DATUM: NAD 83
SKEWED: 000°
CHARACTER ROT:
DEPTH IN FEET

National Ocean Service
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

SEP 6 1989

N/CG2451C/CRD

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

Dear Sir:

During office review of hydrographic survey FE-328, Alaska, Orca Inlet, Cordova, dangers to navigation affecting chart 16710 (14th ed., July 4, 1987: NAD 83) 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 Unit at (206) 526-6853.

Enlosure

cc: DMA/TC
N/CG221

Sincerely,

ORIGINAL SIGNED BY

Sigmund R. Peterson
Rear Admiral, NOAA
Director, Pacific Marine Center

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: FE-328
Survey Title: State: Alaska
Locality: Orca Inlet
Sublocality: Cordova
Project Number: none NOAA Ship Fairweather

The following items were discovered during office processing of FE-328.

Object discovered: Three shoal soundings corrected to MLLW.

Affected nautical charts

CHART	EDITION		REPORTED	CHARTED HORIZ	GEOGRAPHIC POSITION	
NUMBER	NO.	DATE	DEPTH	DATUM	LATITUDE	LONGITUDE
16710	14th	7/4/87	2 Ft.	1983	60°34'33.15"	145°45'46.45"
16710	14th	7/4/87	11 Ft.	1983	60°34'26.88"	145°45'46.28"
16710	14th	7/4/87	12 Ft.	1983	60°34'20.17"	145°45'52.37"

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

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

October 3, 1989

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

Dear Sir:

During office review of hydrographic survey FE-328, Alaska, Orca Inlet, Cordova, additional dangers to navigation affecting chart 16710 (14th ed., July 4, 1987: NAD 83) 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,

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

Enlosure

cc: DMA/TC
N/CG221
PMCx3

REPORT OF DANGERS TO NAVIGATION

Hydrographic Survey Registry Number: FE-328
Survey Title: State: Alaska
Locality: Orca Inlet
Sublocality: Cordova
Project Number: none NOAA Ship Fairweather

The following items were discovered during office processing of FE-328.

Object discovered: Three shoal soundings corrected to MLLW.

Affected nautical charts

CHART NUMBER	EDITION NO.	EDITION DATE	REPORTED DEPTH	CHARTED HORIZ DATUM	GEOGRAPHIC POSITION LATITUDE(N)	GEOGRAPHIC POSITION LONGITUDE(W)
16710	14th	7/4/87	10 Ft.	1983	60°34'49.35"	145°44'42.57"
16710	14th	7/4/87	2 Ft.	1983	60°34'46.04"	145°46'07.18"
16710	14th	7/4/87	1 Ft.	1983	60°34'39.61"	145°44'47.40"

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

APPROVAL SHEET

The final field sheets and accompanying records have been reviewed for accuracy, completeness, and adherence to required standards and procedures. The data is forwarded for final review and processing.

Submitted by:

David O. Neander
Ensign, NOAA

Reviewed by:

John A. Miller
Lieutenant, NOAA
Field Operations Officer

Approved by:

Thomas W. Ruszala
Commander, NOAA
Commanding Officer

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: July 19, 1989

MARINE CENTER: Pacific Hydrographic Section

OPR: Reconnaissance Survey

HYDROGRAPHIC SHEET: PE-328

LOCALITY: Cordova, Alaska

TIME PERIOD: May 26 - 27, 1989

TIDE STATION USED: 945-4050 Cordova, Alaska

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 6.02 feet

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 11.6 feet

REMARKS: RECOMMENDED ZONING
Zone direct

CLO-291
7-21-89

James R. Hubbard
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

FE-328

Name on Survey	A ON CHART NO. 16710	B ON PREVIOUS SURVEY NO. H-10029	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	
ALASKA, ORCA INLET, CORDOVA										
ALASKA (title)	X									1
CORDOVA (title)	X									2
HAWKINS ISLAND	X	X								3
ODIAK CHANNEL	X	X								4
ORCA INLET (title)	X	X								5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
				Approved:						16
										17
				Charles E. Harrington						18
				Chief Geographer – N/CG2x5						19
				OCT 16 1989						20
										21
										22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 107

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

U.S. DEPARTMENT OF COMMERCE

HYDROGRAPHIC SURVEY STATISTICS

REGISTRY NUMBER: FE-328

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

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

DESCRIPTION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/ SOURCE DOCUMENTS	
ACCORDION FILES	1					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						

SHORELINE DATA

SHORELINE MAPS (List):

PHOTOBATHYMETRIC MAPS (List):

NOTES TO THE HYDROGRAPHER (List):

SPECIAL REPORTS (List):

NAUTICAL CHARTS (List):

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			106
POSITIONS REVISED			
SOUNDINGS REVISED			
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	*EVALUATION*	*TOTALS*
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS	6		6
VERIFICATION OF SOUNDINGS	16		16
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION/VERIFICATION			
COMPILATION OF SMOOTH SHEET	11		11
COMPARISON WITH PRIOR SURVEYS AND CHARTS			
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		34	34
GEOGRAPHIC NAMES			
OTHER*			
*USE OTHER SIDE OF FORM FOR REMARKS — TOTALS	33	34	67

		Beginning Date	*Ending Date*
Pre-processing Examination by			
Verification of Field Data by	C.R. Davies	*Time (Hours)* 33	*Ending Date* 9/8/89
Verification Check by	J. Green	*Time (Hours)* 4	*Ending Date* 10/4/89
Evaluation and Analysis by	C.R. Davies	*Time (Hours)* 34	*Ending Date* 10/4/89
Inspection by	D. Hill	*Time (Hours)* 4	*Ending Date* 10/5/89

EVALUATION REPORT

FE-328

1. INTRODUCTION

Survey FE-328 is a field examination accomplished by the NOAA Ship FAIRWEATHER.

This survey occurred in Orca Inlet, Alaska and covers the channel between Western Channel and Orca Inlet, one and a half nautical miles north of the town of Cordova. The surveyed area extends from latitude 60°34'00"N to latitude 60°35'12"N and longitude 145°44'29"W to longitude 145°46'24"W. The area can be described as a narrow channel between two sandy shoals. The bottom consists of sand. Depths range from one to 68 feet.

Actual tides for Cordova, Alaska were used for the reduction of soundings during field processing. Approved hourly heights zoned from Cordova, Alaska, gage 945-4050, 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 contain adequate discussions of horizontal control and hydrographic positioning.

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

Latitude: -1.984 seconds (-61.4 meters)
Longitude: 7.045 seconds (107.2 meters)

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

There is one weak fix, angle of intersection less than 30 degrees or more than 150 degrees, noted in this survey. However, there are no significant plotting differences between the sounding located by this fix and those in adjacent areas. Also, the fix is not used to position a danger to navigation. This fix is considered acceptable.

There are no shoreline maps applicable to this survey.

Shoreline depicted on the smooth sheet originates with chart 16710, 14th Edition, July 4, 1987, and is to be used for orientation only.

3. HYDROGRAPHY

With the exceptions noted below and in section 4 of this report, 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.

Significant holidays exist in the following areas:

Latitude	Longitude
60°34′36"N	145°44′33"W
60°34′33"N	145°45′33"W
60°34′27"N	145°45′00"W

Additional development of the northeast tip of the shoal at latitude 60°34′52"N, longitude 145°44′58"W should have been accomplished.

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 except as follows.

Four areas on survey FE-328 warrant additional development to locate the least depths, see section 3 of this report. The investigation of these features was incomplete.

No crosslines were acquired during survey FE-328. Mainscheme hydrography should be supplemented by crosslines for verifying and evaluating the accuracy and reliability of surveyed depths and positions.

Bottom samples were not taken on FE-328. Frequencies of bottom samples in various depths of water is specified in section 1.6.5 of the Hydrographic Manual.

5. JUNCTIONS

Survey FE-328 does not junction with any contemporary surveys. A comparison with charted depths reveal a difference of up to 12 feet in some areas.

6. COMPARISON WITH PRIOR SURVEYS

H-10029(1982) 1:10000

Survey H-10029 covers the entire area of the present survey. A comparison with this prior survey is satisfactory. The two shoals centered at latitude 60°34'40"N, longitude 145°44'50"W (NAD83) and latitude 60°34'36"N, longitude 145°46'00"W (NAD83) have migrated approximately 100 to 200 meters to the north since survey H-10029. Depths are therefore different, between 2 to 12 feet.

A 5-foot unsupported echo sounder depth (AWOIS Item 50800) at latitude 60°34'17.0"N, longitude 145°46'06.5"W (NAD 83) was not developed on the present survey, retain as charted.

With the transfer of prior soundings and bottom samples from survey H-10029, survey FE-328 is adequate to supersede survey H-10029 within the area of common coverage.

7. COMPARISON WITH CHART

Chart 16710, 14th edition, dated July 4, 1987; scale 1:30,000

a. Hydrography

All charted hydrography originates with survey H-10029 and requires no further discussion.

With the transfer of soundings and features from survey H-10029, survey FE-328 is adequate to supersede charted hydrography within the common area. An overlay, labeled Chart Revision Overlay, depicting selected soundings from surveys H-10029 and FE-328 with depth curves is attached. These soundings can be

used to revise Chart 16710 hydrography. The overlay should not be used to supersede other charted features.

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

All floating aids were located as noted below. The positions differ from those charted, however, these aids serve their intended purpose. There are no fixed aids in the survey area.

Aid Name	Light List Number	Survey Latitude N	Survey Longitude W
West Channel Lighted Buoy 3	25635	60°34'51.35"	145°45'18.73"
West Channel Lighted Buoy 4	25640	60°34'37.87"	145°45'43.29"
Channel Lighted Buoy 18	25595	60°34'33.45"	145°44'43.34"
Channel Junction Lighted Bell Buoy OI	25600	60°33'59.59"	145°45'37.59"

Channel Junction Lighted Bell Buoy OI is charted as a green and red banded buoy. It should be changed to a red and black banded buoy.

e. Geographic Names

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

f. Dangers to Navigation

The hydrographer reported six shoal depths to the USCG, DMAHTC and N/CG221. Six additional dangers were found during office processing and were reported to the USCG and DMA. Copies of the messages and letters are attached.

8. COMPLIANCE WITH INSTRUCTIONS

Survey FE-328 does not have any Project Instructions. It complies with the Hydrographic Manual except as noted in section 4 of this report.

9. ADDITIONAL FIELD WORK

This survey is adequate to supersede all charted depths located in the common area. Additional field work is recommended on a low priority basis to determine least depths in the areas mentioned in sections 3 and 6 of this report.

Charles R. Davies

C. R. Davies
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 Hill

Dennis Hill
Chief, Hydrographic Unit

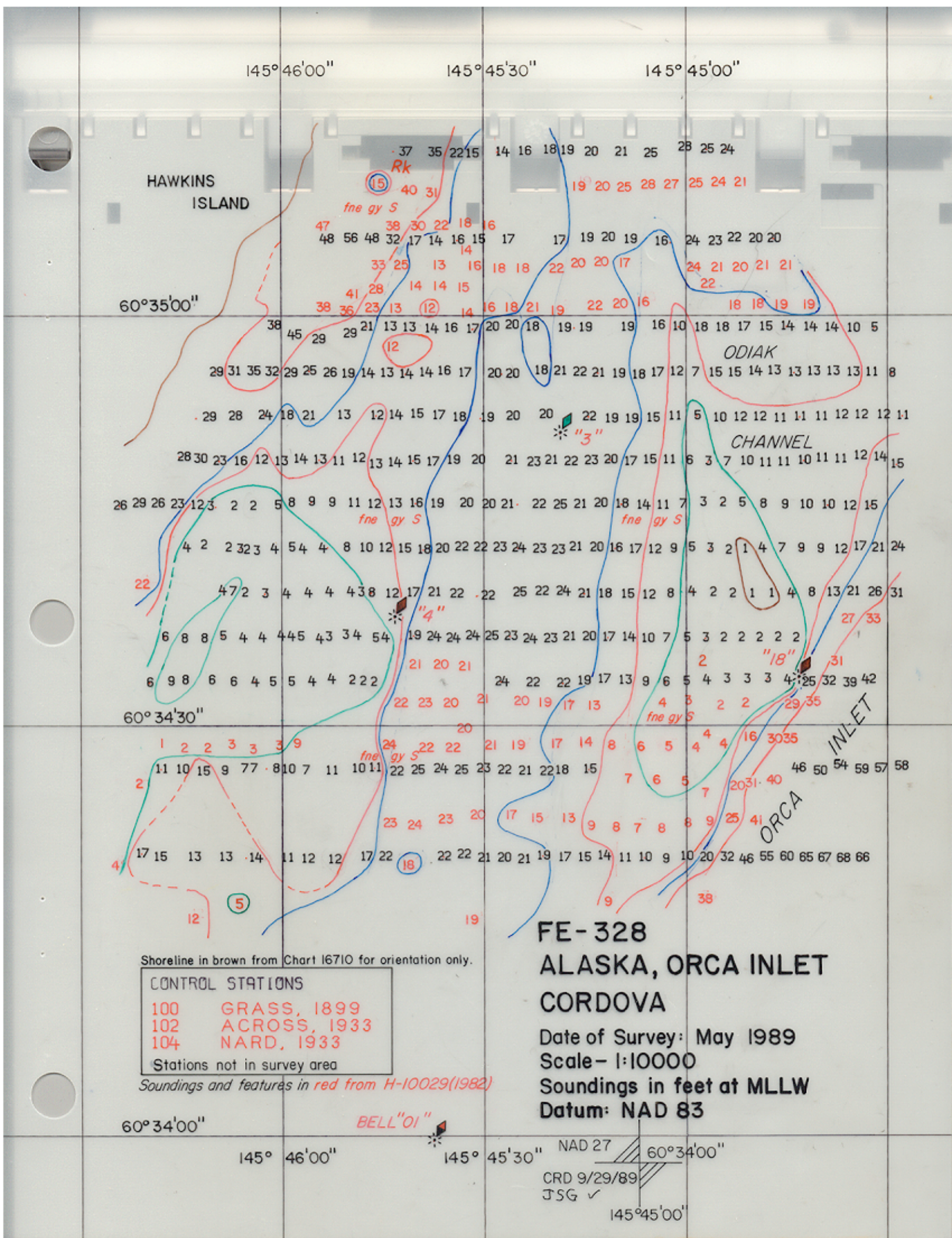
APPROVALS

I have reviewed the smooth sheet, accompanying data, and reports associated with Field Examination FE-328. This survey meets or exceeds Charting and Geodetic Services' standards for products in support of nautical charting.

10/5/89
Chief, Pacific Hydrographic Section (Date)

Approved: Sigmund R. Petersen 10/11/89
RADM Sigmund R. Petersen, NOAA (Date)

Approved: Wesley V. Hull 10/17/89
RADM Wesley V. Hull, NOAA (Date)



Shoreline in brown from Chart 16710 for orientation only.

CONTROL STATIONS

100	GRASS, 1899
102	ACROSS, 1933
104	NARD, 1933

Stations not in survey area

Soundings and features in red from H-10029(1982)

FE-328

ALASKA, ORCA INLET

CORDOVA

Date of Survey: May 1989

Scale – 1:10000

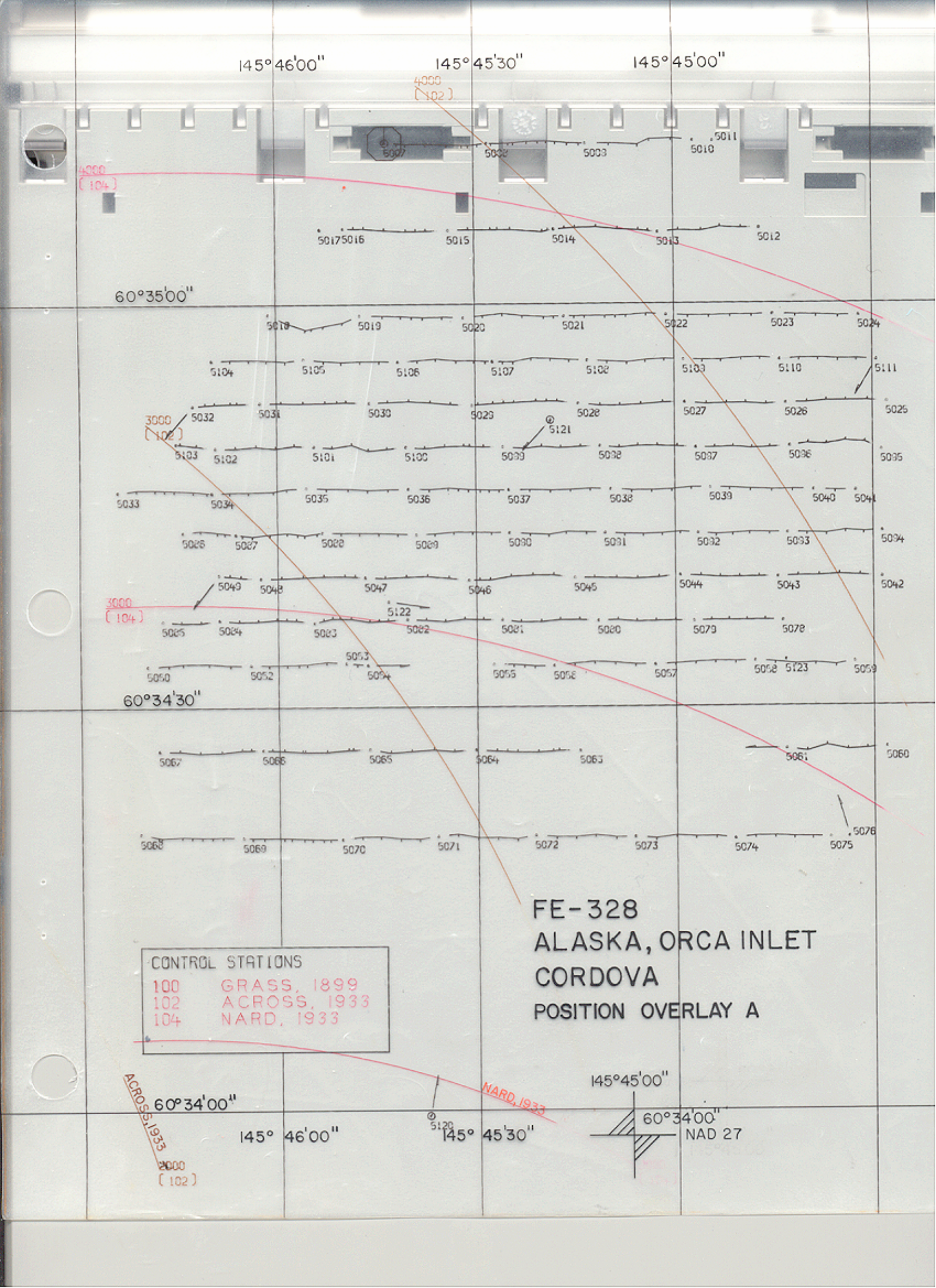
Soundings in feet at MLLW

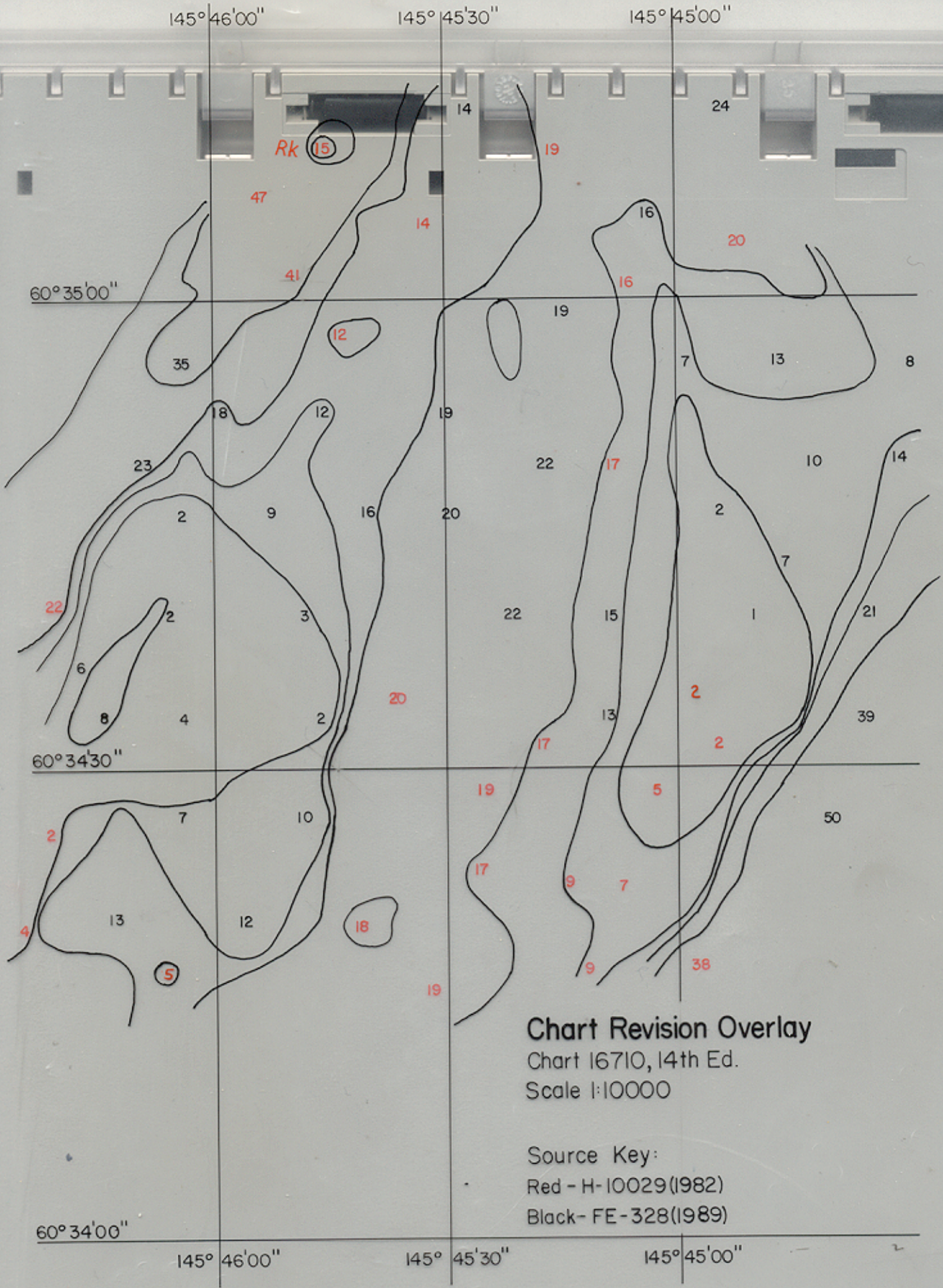
Datum: NAD 83

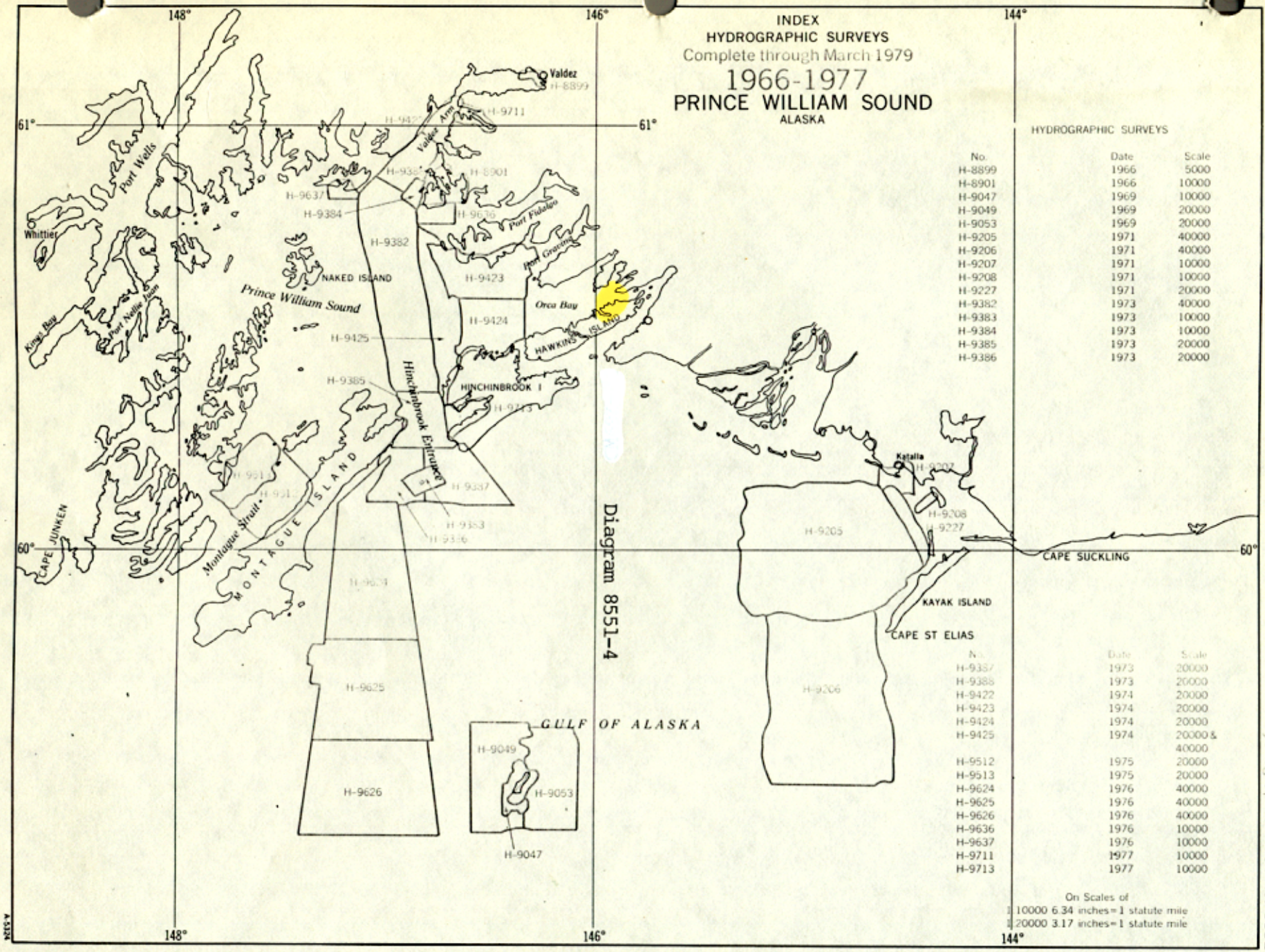
NAD 27

CRD 9/29/89

JSG ✓


145°46'00"
145°45'30"
145°45'00"
60°35'00"
60°34'30"
60°34'00"
4000 (102)
4000 (104)
3000 (102)
3000 (104)
5001 5002 5003 5004 5005 5006 5007 5008 5009 5010 5011 5012 5013 5014 5015 5016 5017 5018 5019 5020 5021 5022 5023 5024 5025 5026 5027 5028 5029 5030 5031 5032 5033 5034 5035 5036 5037 5038 5039 5040 5041 5042 5043 5044 5045 5046 5047 5048 5049 5050 5051 5052 5053 5054 5055 5056 5057 5058 5059 5060 5061 5062 5063 5064 5065 5066 5067 5068 5069 5070 5071 5072 5073 5074 5075 5076 5077 5078 5079 5080 5081 5082 5083 5084 5085 5086 5087 5088 5089 5090 5091 5092 5093 5094 5095 5096 5097 5098 5099 5100 5101 5102 5103 5104 5105 5106 5107 5108 5109 5110 5111 5120 5121 5122 5123
CONTROL STATIONS
100 GRASS, 1899
102 ACROSS, 1933
104 NARD, 1933
FE-328
ALASKA, ORCA INLET
CORDOVA
POSITION OVERLAY A
NARD, 1933
ACROSS, 1933
NAD 27


145° 46'00"
145° 45'30"
145° 45'00"
60° 35'00"
60° 34'30"
60° 34'00"
Rk
Chart Revision Overlay
Chart 16710, 14th Ed.
Scale 1:10000
Source Key:
Red - H-10029 (1982)
Black - FE-328 (1989)



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-8899	1966	5000
H-8901	1966	10000
H-9047	1969	10000
H-9049	1969	20000
H-9053	1969	20000
H-9205	1971	40000
H-9206	1971	40000
H-9207	1971	10000
H-9208	1971	10000
H-9227	1971	20000
H-9382	1973	40000
H-9383	1973	10000
H-9384	1973	10000
H-9385	1973	20000
H-9386	1973	20000

No.	Date	Scale
H-9387	1973	20000
H-9388	1973	20000
H-9422	1974	20000
H-9423	1974	20000
H-9424	1974	20000
H-9425	1974	20000 & 40000
H-9512	1975	20000
H-9513	1975	20000
H-9624	1976	40000
H-9625	1976	40000
H-9626	1976	40000
H-9636	1976	10000
H-9637	1976	10000
H-9711	1977	10000
H-9713	1977	10000

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

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

Hydrographic Index No. 113E

NOAA FORM 75-96
(10-83)

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

EXAMINED FOR NM
GD
8-22-90 HPL

MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. FE-328

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
	EXAMINED FOR NM		Full Part Before After Marine Center Approval Signed Via
	GD		Drawing No.
	2-22-90 HSC		
16710	7/12/90	L. ARKENAU	Full ~~Part Before~~ After Marine Center Approval Signed Via
			Drawing No. Thru A10 Proof Item J
16709	8-13-91	L WOTHKE	Full ~~Part~~ Before After Marine Center Approval Signed Via
			Drawing No. 16 ~~No~~ ~~Correction~~ Applied thru 16710
16700	8-13-91	L.W. Othke	Full ~~Part~~ Before After Marine Center Approval Signed Via
			Drawing No. 26 No Correction
			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.