

10029

Diagram No. 8551-4

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. DA-10-2-82
Registry No. H-10029

LOCALITY

State Alaska
General Locality Orca Inlet
Sublocality Hawkins Inlet to Shepard
Point

19 82

CHIEF OF PARTY
CDR J.M. Wintermyre

LIBRARY & ARCHIVES

DATE June 15, 1984

10029

Area 6

CHTS:

16710

16709

16700

16813NC

} to sign off see
Record of Applications

HYDROGRAPHIC TITLE SHEET

H-10029

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.

DA-10-2-82

State AlaskaGeneral locality Orca InletLocality Hawkins Inlet to Shepart PointScale 1:10,000 Date of survey Jul 11 - Aug 31, 1982Instructions dated February 19, 1982 Project No. OPR-P132-DA-82Vessel NOAA Ship DAVIDSON, Launches 3131, 3132, and 3135Chief of party CDR J. M. Wintermyre
CDR J. Wintermyre, LCDR D. MacFarland, LT D. Dreves, LTJG N. Bogue,
Surveyed by ENS J. Duggan, ENS E. Hawk, ENS J. WaddellSoundings taken by echo sounder, hand lead, pole Ross Model 5000, leadlineGraphic record scaled by Ship's PersonnelGraphic record checked by Ship's Personnel

Verified

~~XXXXXX~~ by M. SandersAutomated plot by PMC Xynetics Plotter

Evaluated

~~XXXXXX~~ by K. M. ScottSoundings in ~~fathoms~~ feet at ~~MLW~~ MLLWREMARKS: Revisions and marginal notes in black by evaluator.STANDARDS OK'D 6-20-84C.Wy✓ AWOIS + SURF MWD 9/84 and 12/89NOTE TO CARTOGRAPHERS:

- ① The note RK added to the 15-ft sounding in lat. $60^{\circ}35'12''N$, long. $145^{\circ}45'38''W$ is not reflected in the cartographic code for this feature in the digital data.
- ② An obstr. covered 16 ft in lat $60^{\circ}34'55''N$, long. $145^{\circ}42'55''W$ was inappropriately excessed. It is now shown on the smooth sheet. The digital data has not been edited to reflect this change.

PROGRESS SKETCH

OPR-PI32-DA-82

ORCA INLET, ALASKA

SCALE: CHART 16700

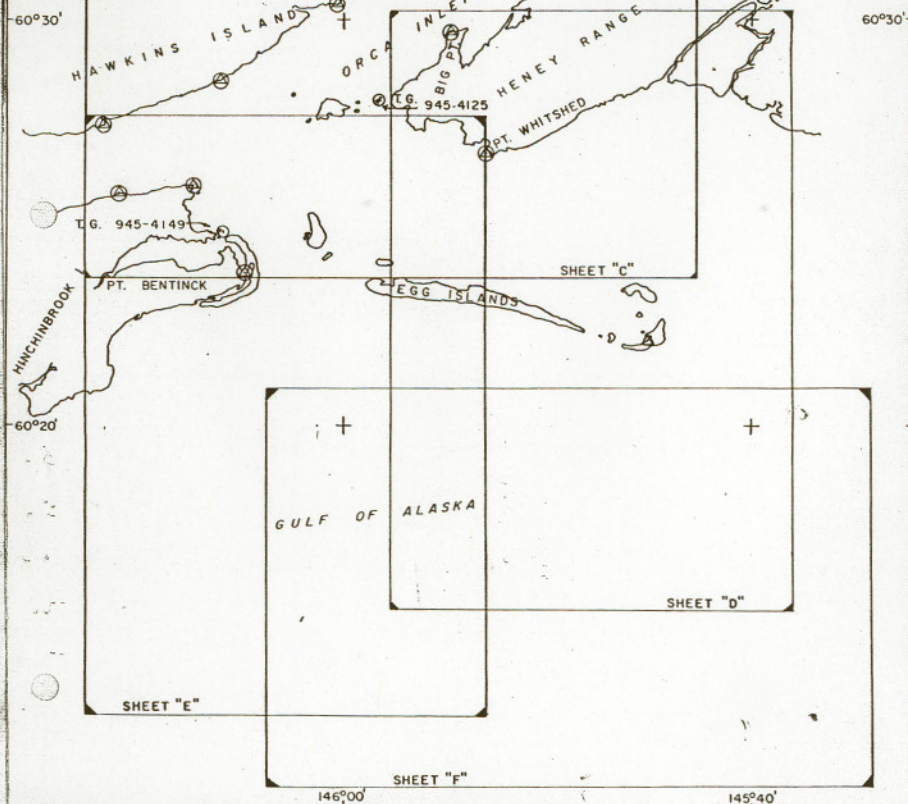
NOAA SHIP DAVIDSON (S-331)

CDR. JAMES M. WINTERMYRE, Comdg.

JUNE-SEPT, 1982

JUN	JUL	AUG	SEPT	STATISTICS
0	140	307	8	3.5 L. N. M. SOUNDING LINE
0	6.3	5.5	0.2	50 N.M. SOUNDING
23	5	0	0	TRIANGULATION STA RECOVERED
0	1	0	0	TRIANGULATION STA ESTABLISHED
1	1	0	0	TIDE GAGE
0	14	40	0	BOTTOM SAMPLES
0	0/6	4	0	NANSEN CAST/SOUND VEL SYSTEM
37.5	0	0	0	BENCH MARKS RECOV/ESTAB.
0	0	2	0	DIVE INVESTIGATIONS

60°30'



60°30'

60°20'

146°00'

145°40'

DESCRIPTIVE REPORT
H-10029
OPR-P132-DA-82
Orca Inlet, Alaska

A. PROJECT

Survey operations were conducted in accordance with Project Instructions OPR-P132-DA-82, dated 19 February 1982, Change No. 1 dated 4 May 1982, and Change No. 2 dated 13 July 1982. Registry No. H-10029 was assigned 21 July 1982. Operations commenced on ~~23 June~~ ^{11 July} 1982 and were completed on ~~2 September~~ ^{31 August} 1982.

B. AREA SURVEYED

The area surveyed covered the northern section of Orca Inlet, including Western and Odiak Channels from Shepard Pt. to south of ~~Observation Island~~ ^{Hawkins Inlet}. The northern limit was squared off to include the ten fathom curve, western and eastern limits were zero fathom curves and southern limit was latitude 60°34' 17"N, where H-10029 junctions with H-10038. Fine sand and mud dominated the character of the bottom in the survey area. There are numerous mud and sand flats; and deep channels with steeply sloping banks bordering the flats. Scour caused by tidal currents frequently results in deep water adjacent to rocks and islands.

C. SOUNDING VESSELS

Sounding vessels were survey launches DA-1 (#3131) and DA-2 (#3132). For ease of identification, raw data records were annotated in red ink for DA-1 and blue ink for DA-2.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Both launches were equipped with Ross 5000 Fineline Fathometers. Leadlines and sounding poles were also used. Serial numbers of the echo sounding equipment used by both launches are listed below:

<u>LAUNCH</u>	<u>FATHOMETER S/N</u>	<u>DIGITIZER S/N</u>	<u>TRANSCIEIVER S/N</u>	<u>JD</u>
DA-1	1048	1081	1081	192-215
	1077	1081	1081	221-243
DA-2	1080	1048	1036	190-236

Daily stylus belt tension checks and phase calibrations were conducted in accordance with the PMC OPR-DA-82 Appendices Q and B, and the Appendices Q - T cover letter, dated 22 April 1982. Fathometer S/N 1048 was replaced by fathometer S/N 1077 on JD 216 when the former could not meet stylus belt tension/phase calibration requirements.

Fathometers were monitored continuously during survey operations and the fathogram initial was maintained at zero. Fathograms were scanned and the analog record compared to digitized depths. Digitizer errors, missed depths, and peak/deep insertions were identified, and modifications made to the data according to the fathogram trace. Changes were entered on the edited master tape or via corrector tape, and noted on the raw data printout and fathogram. Special annotations appear on the raw data printout and fathograms from JD 221/222 and 223 with regard to "sandwaves". The method of handling these features was discussed and approved by CPM3 via telephone on 10 August 1982. A letter, dated 18 August 1982, is appended to this report.

Soundings on the final field sheet have been corrected for transducer draft, velocity, and predicted tides. Bar checks were generally made twice daily, weather permitting, and a transducer depth correction (TRA) of 1.8 feet was applied during the data acquisition portion of the survey. At the conclusion of data acquisition new TRA values for each launch were determined from bar check data. These values were applied to depths appearing on the final field sheet. Corrections for settlement and squat were determined for both survey launches on 12 May 1982 (JD 132) in the Bay of Pillars, Alaska. Correctors less than 0.2 foot were not applied. The DAVIDSON conducted 6 sound velocity casts in the survey area to determine velocity correctors. A portable sound velocity sensor was used.

<u>DEPTH SENSOR</u>	<u>VELOCITY SENSOR</u>	<u>FREQUENCY COUNTER</u>	<u>JD</u>	<u>LAT.(N)</u>	<u>LONG.(W)</u>	<u>MAX DEPTH</u>
Bissett-	Grundy	Hewlett	188	60/38/15	145/42/15	50
Berman	S/N: 3444	Packard	195	60/37/00	145/45/00	20
S/N 2275	cal: 9/80	model:	195	60/38/06	145/42/30	50
cal: 2/18		5315 A	195	60/36/54	145/41/30	15
		S/N	202	60/37/00	145/45/00	20
		1948A03626	202	60/36/54	145/41/30	15
		Calibrated 11/81				

Velocity corrections from a mean velocity correction curve were applied to soundings on the final field sheet. An explanation of the generation of this mean velocity correction curve is contained in the appended Corrections to Echo Soundings Report.

Predicted tides were computed from published daily predictions for Cordova, Alaska. Predicted tides were applied at 0.2 foot intervals for all sounding plots.

Cordova is a reference tide station with operating ADR and Bubbler gages. The field tide note contains additional tide gage information, and leveling results. Smooth sheet depths should be corrected for observed tides at Cordova. ✓

E. HYDROGRAPHIC SHEETS

Field sheets were prepared at a scale of 1:10,000 using the DAVIDSON's PDP8/e, DP-3 plotter, and standard NOS software. The field sheet was divided into two plotter sheets. Field sheet DA-10-2A-82 covers northern Orca Inlet from latitude 60°38' 30"N south to about latitude 60°35' 30"N. ✓ where it junctions with field sheet DA-10-2B-82. Field sheet DA-10-2B-82 extends south to latitude 60°34' 17"N. where it junctions with field sheet DA-10-3-82 (H-10038). A blowup (1:2500 scale) was prepared for Orca, including the cannery, piers and pilings, in order to verify positions of these structures and to relieve congestion of the soundings in the area. All data will be submitted to the Pacific Marine Center for verification and smooth plotting.

F. CONTROL STATIONS

Visual Signals and electronic control apparatus were set up on monumented horizontal control stations. Published positions for all existing stations were used to control hydrography. Published data (distances and directions) were used to compute positions of reference marks, except at SAW 2 1964, where the published initial was in error. The initial was corrected, and published data used to compute the positions of RM's shifted from ROOT 2 1964 to BLUFF 2 1964. Published directions were then used. ✓

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Sect. 2

Positions were established for: NORTH ISLAND ROCK LIGHT, ORCA BAY LIGHT 9, WEST CHANNEL LIGHT 2 using third-order, class I procedures. Results exceeded requirements for third-order, class I accuracy. These positions were computed using adjusted positions for ROOT 2 1964 and SAW 2 1964 (maximum adjustment in these stations was approximately 0.5 meters). A discussion of the need for adjustment and the procedure followed is contained in the Horizontal Control Report. One temporary station, ALDER (temp), was located by resection. Third-order, class I accuracy standards were exceeded. Details on the above information can be found in the Horizontal Control Report for OPR-P132-DA-82. ✓

G. HYDROGRAPHIC POSITION CONTROL

Sounding line position control was accomplished by range-range or range-azimuth techniques using Motalal Miniranger III and Wild T-2 theodolites. The serial numbers of Miniranger consoles and receiver/transceiver (RT) units used ✓

are listed below, as well as the transponders used:

<u>VESSEL</u>	<u>MR CONSOLE S/N</u>	<u>RT UNIT S/N</u>	<u>JD</u>
DA-1	710	M409	192-243 ✓
DA-2	713166	1545	190-192
			202-203
			236

TRANSPONDERS

<u>CODE</u>	<u>S/N</u>	<u>JD</u>
1	1601	190-243
2	1572	193-243
3	4950	190-243
4	3376	193-243
5	B1413	190-243
6	911723	190-238
7	B1215	192-203

The Miniranger transponder codes and serial numbers, stations and days of operation, correctors and signal numbers, control types and position numbers are appended to this report. ✓

Range-range station configurations were selected to provide unobstructed lines of sight to the survey area, as well as minimum 30° range arc intersection angles, Range-azimuth control was used only where satisfactory range-range control was not possible. ✓

Miniranger system checks were performed before and after each day's hydrography, using the baseline crossing method. Minimum acceptable signal strengths were established for each of the seven transponders codes based on the latest Miniranger baseline calibration preceding hydrography. The minimum acceptable signal strengths were not violated and were determined as follows: First, the Miniranger correctors of each signal strength were determined from the baseline calibration. Then, a graph of corrector values (y-axis) versus signal strengths (x-axis). The minimum acceptable signal strength was established at the signal strength value where the slope of the corrector-curve varied most significantly from the mean of the preceding correctors, when inclusion of the next lower signal strength unduly biased the running mean corrector or application of the mean corrector was inadequate to correct the next lower signal strength. This usually occurred between signal strengths 5 and 7 on equipment combinations. ✓

Miniranger baseline calibrations were performed on JDs 177, 200, and 247 over distances measured with an HP-3808 EDM. ✓

All calibrations were performed in the survey area. Baseline correctors are listed in the appended Miniranger Baseline Corrector Abstract. The most recent determined correctors were used in preparation of the preliminary field sheet. In preparing the final field sheet correctors applied were the mean of the correctors derived from the two baseline calibrations bracketing the hydrography. All final corrector tapes submitted to PMC incorporate the mean correctors.

H. SHORELINE

Shoreline manuscripts ~~TP~~-12649, ~~TP~~-12651, and ~~TP~~-12652 (all 1:10,000) were the source of shoreline information. The shoreline is generally well depicted except for a few areas where the high water line is not well defined. There are also a few instances wherein features visible on the photographs or portrayed on the existing 1:30,000 scale chart (16710) were not depicted on the T sheets. A discrepancy was found with the high water line on the sandbar just north of Humpback Creek when compared with the shoreline indicated on ~~TP~~-8853. A series of detached positions (Pos. Nos. 7004, JD 232, 7012-7016, JD 246) delineating the high water line can be found in Sounding Volume No. 1. Other discrepancies are discussed in the Shoreline Verification Report. It is recommended that the revisions found on the shoreline manuscript and discussed in the Shoreline Verification Report be combined with H-10029 hydrographic data to develop the next edition of chart No. 16710.

I. CROSSLINE

Crosslines comprise 8.4% of the total sounding line mileage. All crosslines were scanned and agreement with main scheme soundings was good. Specific comparisons were made between 52 randomly selected crossline and main scheme soundings with the following results; Exact agreement was seen in 21 (40%) of the soundings, 25 (48%) agreed within one foot, and 6 (12%) disagreed by two or more feet. Inspection of fathograms showed abrupt changes in depths in the six cases where the soundings disagree. Differences there are attributed to the small horizontal displacement of soundings may result in significant variations in depth.

J. JUNCTION

Survey H-10029 junctions with H-8854, 1965 (1:20,000) and H-10038 (1:10,000). Comparisons were made between 28 randomly selected soundings from the H-8854 junction overlap zone using suggested criteria in Section 1.1.2 Part B.I.3 of the Hydrographic Manual. Good agreement was noted in the junction overlap zone except for four discrepancies.

These were noted as two foot anomalies in the vicinity of
1) 60/37/50N, 145/41/35W, 2) 60/37/50N, 145/42/10W, 3)
60/37/50N, 145/42/30W, 4) 60/37/05N, 145/45/08W. Areas of
steeply sloping bottom were observed beyond the 10 fathom
curve. The variance in depths can result from slight hori-
zontal displacements in areas of irregular or steeply
sloping bottom.

At the junction of H-10029 and H10038 1 to 3 foot discre-
pancies were found. "Sandwaves" occur in this area. They
generally range in elevation from 1 to 3 feet and have
estimated crest to crest widths of 60 to 90 feet. It is
believed that all discrepancies at the junction are con-
sequences of these "sand waves". Since they received
unique handling and are transient features, an attempt to
resolve the apparent discrepancy was not pursued. The
unique handling of these sand waves is discussed in the
appended letter from CPM3 dated 18 August 1982.

K. COMPARISONS WITH PRIOR SURVEYS

PSR items were investigated with the following results:

AWQIS # 50169

PSR item #7 at 60/34/55N, 145/43/59W is a reported (1971)
obstruction 50 feet north of the NW corner of the New
England (now Chugach Alaska Fisheries) Cannery Pier at
Orca. The AWQIS description contains two errors: 1) the
correct (charted) longitude is 145/42/59W, not 145/43/59W.,
2) the obstruction (charted) is off the SW corner of the
pier, not the NW corner. Sounding lines were run at idle
speed along side the pier face, and at 5m, 10m, 20m off.
Slight shoaling was observed off the southwest corner.
Divers descended a marker float line 50 feet south of the
S. W. corner of the pier and conducted a search to 50 feet
north of the NW corner of the pier in conditions of low
current and good visibility (15 feet). The bottom along-
side the pier face and to a distance of about 10m off was
littered with small metal debris, none of which could be
considered a hazard to navigation. The largest obstruc-
tion was a pile of assorted debris consisting of an ir-
regular piece of flattened metal (5'x5') and 1" steel
cables, just north of the SW corner of the pier. The
debris was on a slope (about 15°) and rose less than 2
feet above the surrounding bottom. A float was attached
to the highest point and was used to locate the obstruct-
ion via sextant fixes and electronic ranges. The ob-
struction had a least depth of 13.8 feet below MLLW.
~~Since the position and depth closely coincides with the
charted obstruction, it is recommended that the charted
symbol be retained in future editions of the chart.~~

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Do not concur

AWOIS # 50263

PSR item #8 reported at 60/35/12N., 145/45/39W. is rock with a 14 foot sounding in surrounding 30-40 foot depths. The feature was observed while running channel lines and subsequently developed. Closely spaced sounding lines were run over the area at idle speed, and a marker buoy dropped on the shallowest point. Two divers descended and searched the area around the marker. A second marker was attached on a taut line to the least depth on the feature, and the time noted. The float line was recovered and measured, and the observed depth reduced for predicted tides. This depth was found to be 15.0 feet below MLLW. The charted position is accurate; the charted depth should be retained. *Do not concur*

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The survey was compared with prior survey H-8853 (1:10,000, 1964-65), H-8854 (1:20,000, 1965), and H-8852 (1:5000 1965). Sounding agreement criteria was taken from Section 1.1.2 Part B.II.1 of the Hydrographic Manual. *survey complies with NOS standards*

General agreement between prior and present survey soundings is good. Comparisons between present and prior survey soundings were made by coinciding latitude and longitude grids and then comparing sounding trends. A total of 50 comparisons were made with H-8853. Two of three foot discrepancies were observed in the vicinity of 1) 60/37/08N, 145/42/15W, 2) 60/37/12N, 145/41/55W, 3) 60/37/05N, 145/42/25W, 4) 60/37/06N, 145/43/00W, 5) 60/36/50N, 145/43/48W, 6) 60/35/50N, 145/45/50W. For survey H-8852, 11 sounding comparisons were made in the vicinity of Shepard Point and 20 near Orca Cannery. Good agreement was noted in the overlap zone of both these areas. One four foot discrepancy was noted in the vicinity of 60/35/15N, 145/42/45W. This area was found to be 4 feet shallower than the prior survey. Thirty-two comparisons were made for H-8854. Good agreement was noted in the overlap zone with no discrepancies. The above discrepancies are believed to be the result of the strong currents disfigurement of the inlet's bottom. Soundings from H-10029 should be given preference over prior sounding data and charted in lieu of the latter to account for any bottom changes.

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L. COMPARISON WITH THE CHART

The largest scale chart of the area is chart No. 16710, 12th Edition, August 11, 1979 at a 1:30,000 scale. A 1:10,000 scale blow-up was provided to facilitate comparison.

It was found when comparing H-10029 with chart No. 16710 that depths had changed markedly (3 to 7 feet) in many areas. After comparing 127 randomly selected soundings, shoaling was observed to have occurred west of Observation Island by generally 7 feet, while east of Observation

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Island depths have increased on the order of 3 feet. These discrepancies are believed to be the result of the strong current's disfigurements of the inlet's bottom.

Recommendations for non-sounding features are listed below:

The rock charted at $60^{\circ}36' 07''N$, $145^{\circ}41' 43''W$. was searched for near low tide but was not found. A gravel bar extending from the beach was observed nearby at $60^{\circ}36' 05.74''N$, $145^{\circ}41' 42.24''W$. (Pos. No. 7001, JD 232). This fix was taken on the seaward edge of the bar. The rock symbol should be removed from future editions of the chart. *concur*

At Shepard Point there are two uncharted pilings that are visible on the aerial photo #7034. They were located by sextant traverse (Pos. No. 7002, JD 232) and should appear on the chart. *No positional data in hydro records, applied to smooth sheet from Blueprint 119564. concur*

An uncharted ~~rock~~ ^{islet} at $60^{\circ}36' 40.75''N$, $145^{\circ}41' 12''W$. (Pos. No. 7003, JD 232), bares ~~25~~ ²⁶ feet above ~~MLLW~~ ^{MHW}. It should be charted. *concur*

A rocky ledge was identified off Observation Island at $60^{\circ}36' 14.92''N$, $145^{\circ}43' 51.32''W$. (Pos. No. 7005, JD 233). The fix was taken at the furthest extent of the rocky ledge. The ledge bares ~~25~~ ²⁶ feet at MLLW, and should be charted. *concur*

An uncharted rock at $60^{\circ}34' 51.32''N$, $145^{\circ}45' 31.07''W$. (Pos. No. 7006, JD 233), was ~~exposed~~ ^{covered} ~~7~~ ⁶ feet at MLLW. It should be charted. *concur* ^{Chart 6R}

An uncharted rock at $60^{\circ}34' 17.58''N$, $145^{\circ}47' 05.80''W$. (Pos. No. 7007, JD 233), was located. It is submerged 2 feet at MLLW, and should be charted. *concur*

An uncharted rock was observed at $60^{\circ}34' 18.47''N$, $145^{\circ}47' 01.21''W$. (Pos. No. 7008, JD 233), was submerged 2 feet at MLLW, and should be charted. *concur*

An uncharted rock was discovered at $60^{\circ}35' 04.31''N$, $145^{\circ}44' 33.48''W$. (Pos. No. 7009, JD 233). It was exposed ~~6.5~~ ²⁸ feet at MLLW, and should be charted. *concur*

A piling was observed near $60^{\circ} 34' 20''N$, $145^{\circ}45' 45''W$. It is visible on aerial photos 7032 and 7033, and should be charted. It is 240 feet NW of the island in the mouth of Shipyard Bay and bared 21 feet at 2315 GMT, 8 September 1982. Ruins of a tidal grid consisting of 9 horizontal pilings and 2 sets of pilings supports are next to the 21 foot piling. These pilings are 1.5 feet square by 12 feet long with 8 feet between pilings. The northwest corner of this tidal grid is two feet southeast of the 21 foot piling. A drawing of this grid can be found on page 29, Sounding Volume No. 1 DA-10-3-82.

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H-10038

M. ADEQUACY OF SURVEY

This survey is complete and adequate within its boundaries to supersede prior surveys for charting, with the recommendations noted in the previous section. ✓

N. AIDS TO NAVIGATION

Hydrographic methods were used to position the following floating aids to navigation:

<u>BUOY</u>	<u>FIX</u>	<u>JD</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
15	2001	192	60/36/48.14	145/41/31.32
14	2002	192	60/36/50.81	145/41/46.36
12	2153	192	60/37/34.18	145/41/25.00
16	2316	196	60/35/56.67	145/42/28.71
3	2871	223	60/34/54.87	145/45/13.38
4	2873	223	60/34.41.54	145/45/35.81
18	2874	223	60/34/36.59	145/44/35.86

The buoys are USCG maintained. They are accurately depicted on chart ~~16710~~, but not on chart ~~16709~~. Only buoys "4" and "12" are correctly listed in the Light List. The other buoy locations were unpublished. The locations of the remaining five buoys should be included in the Light List. *These are listed in the 1982 Light List #3414-3417.*

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O. STATISTICS

Number of Positions:	2545
Total nautical miles of sounding lines:	233.3
Square Miles of sounding lines:	8.08
Bottom Samples:	29
Sound Velocity Determinations:	6
Tide Stations occupied:	2
Dive Investigations:	3

P. MISCELLANEOUS

No dangers to navigation were found, consequently no report was filed. ✓

Q. RECOMMENDATIONS

The shoreline revision photography flown July 27-28, 1981, August 4, 1981, and August 27, 1981 should be incorporated with the latest Hydrographic survey to revise charts 16709 and 16710. *changes are reflected on the smooth sheet*

R. AUTOMATED DATA PROCESSING

The following programs were used during this survey:

<u>Program Number</u>	<u>Program Name</u>	<u>Version Date</u>
RK 112	Range-Range Real Time HYDRO PLOT	03/19/81
FA 181	Range-Azimuth Logger	02/23/78
RK 201	Grid, Signal and Lattice Plot	04/18/75
RK 211	Range-Range Non-Real Time Plot	02/02/81
RK 212	Visual Station Table Load	04/01/74
RK 217	Range-Azimuth Non-Real Time Plot	02/09/81
RK 300	Utility Computations	10/21/80
RK 330	Reformat and Data Check	05/04/76
RK 407	Geodetic Inverse/Direct Computation	09/25/78
RK 409	Geodetic Utility Package	09/20/78
AM 500	Predicted Tide Generator	11/10/72
AM 602	Elinore (Line Oriented Editor)	05/20/75

Geodetic computations were made using the geodetic and triangulation programs written for the HP-9815A calculator. ✓

S. REFERRAL TO REPORTS

Horizontal Control Report
Field Tide Note
Electronic Control Report ✓
Corrections of Echo Soundings Report
Field Geographic Names
Coast Pilot Report
Shoreline Verification Report

Respectfully submitted,

Bernard E. Wheaton
LT, NOAA

for James E. Waddell, Jr.
Ens., NOAA

Approved and forwarded,

James M. Wintermyre
James M. Wintermyre, CDR, NOAA
Commanding Officer

FIELD TIDE NOTE
OPR-P132-DA-82
H-10029
H-10038
ORCA INLET, ALASKA

Field reduction of soundings for H-10029 and H-10038 is based on daily predicted tides for Cordova, Alaska (Reference Station 945-4050).

Program AM500, "Predicted Tides Generator" (11/10/72 version) was used to produce ASCII and BINARY Predicted Tide Tapes. Soundings on the final field sheet are corrected for predicted tides at 0.2 foot intervals.

The Cordova (primary) tide reference station (945-4050) was the control tide gage. It is located on the SE corner of the Ocean (Ferry) Dock approximately 0.8 miles north of Cordova. Two gages, Leupold-Stevens (L&S) analog to digital recording gage and a Metercraft gas purged (bubbler-type) backup gage operated continuously.

The Cordova tide station is maintained by a contract observer. Pacific Tide Party (PTP) personnel contacted the observer and inspected the station on 8 July 82. During the inspection they adjusted the memory spring on the L&S gage (see PTP Tide Station Report, Cordova, 8-6-82.) PTP and DAVIDSON divers cleaned and inspected the staff and floatwell.

Leveling

The staff was leveled by DAVIDSON personnel to three benchmarks, including the primary benchmark, to third-order class 1 accuracy on 2 July 82 (JD 182) prior to the start of hydrography. The staff was re-leveled by DAVIDSON and PTP personnel to second-order class 1 accuracy on JD's 194-195. The staff was leveled on JD 251 after completing hydrographic survey operations. There was no evidence of staff movement. Elevations of all benchmarks leveled to agreed within 0.005 m. of historic values.

Zoning

Recorded water levels from the Cordova reference station are representative throughout the survey area and should be applied directly.

Supplemental Tide Data

Two additional bubbler-type tide stations were established in

anticipation of hydrography which was not performed. Boswell Rock was an alternate site for tide support for offshore work, and Shag Rock was to support operations in Orca Inlet, south of Cordova. Data from these stations are provided for informational and historic purposes only, and have no application to H-10029 or H-10038 soundings.

<u>Station</u>	<u>Location</u>	<u>Period of Operation</u>	<u>Gage S/N</u>
Boswell Rock (945-4149)	60/24/48N 146/06/12W	15 July - 2 Sept 82 (JD 196 - JD 245)	64A11030
Gage Installed:	29 June 82 (JD 180)		
Gage removed:	3 Sept 82 (JD 246)		
Shag Rock (945-4125)	60/27/54N 145/59/18W	15 July - 2 Sept 82 (JD 196 - JD 245)	67A10292
Gage Installed:	1 July 82 (JD 182)		
Gage removed:	3 Sept 82 (JD 246)		

Gages were operated on GMT and inspected every two to three days by DAVIDSON personnel. When abstracting hourly heights of tide, time errors were distributed linearly throughout the period between observations.

Both gages exhibited an unusual flattening of the tide curve at the low portion of the tidal cycle. Since the orifices were not set in tide pools and the gages otherwise appeared to work properly, the flattening is probably real, and a function of the geometry of the tidal basin.

Boswell Rock (945-4149)

Egg Island and Point Bentinck were identified by the Project Instructions as two sites for a tide station to control offshore hydrography. Neither site was suited for an installation, since each is adjacent to channels where strong currents occur, are bordered by broad flat sandy beaches, and are heavily fished up to the shoreline by gill-netters.

Verbal permission to use Boswell Rock as an alternate was issued through PMC, and benchmarks were stamped with the station number (945-4149) prescribed for Point Bentinck. CHANGE NO. 2, issued after the station was installed, formally authorized the use of Boswell Rock as an alternate site, and assigned the Egg Island station number. The discrepancy was reported and authorization to use 945-4149 was granted via the 121521Z August 1982 CPM radio message. An ammendment to CHANGE NO. 2 was not issued.

Boswell Rock is located approximately 6.8 n.mi. WSW of Point Whitshed, 4.5 n.mi. SW of Mummy Island Light, and 1.5n.mi. NW of Point Bentinck, on the west side of the entrance to Boswell Bay. The station was installed on the SE tip of the island. The staff was mounted on a large and stable round top boulder and gayed in place with wire secured to eyebolts. The orifice

was placed in the channel south of Boswell Rock. The gage was set well up on Boswell Rock and was protected from the elements by a rock wall and boulders on three sides. The gage provided continuous data and kept accurate time.

The Boswell Rock staff was leveled to five newly established benchmarks to third-order class 1 accuracy requirements on JD 182 prior to the start of survey operations. It was leveled again on JD 245 at the end of survey operations. The JD 245 difference in elevation between benchmarks 4149-C and 4149-D did not agree with the JD 182 value. The leg was re-observed on JD 250, and those results confirmed the JD 245 elevation difference. Since there is no indication of mark disturbance it is presumed that compensating errors occurred during the JD 182 observations. An observation across approximately 120 m of open water was required to tie 4149-C to 4149-D and probably contributed to the discrepancy.

Based on 25 staff-gage comparisons a marigram reading of 4.4 feet corresponds to 0.0 feet on the tide staff. An erroneous computation for the staff-to-gage comparison on 15 July 82 (2120A) was not included in the staff-gage comparison.

Shag Rock (945-4125)

Shag Rock is located approximately 2.9 n.mi. WNW of Point Whited, 0.6 n. mi. ENE of Mummy Island Light, and 7.7 n.mi. SW of Cordova. The Shag Rock gage was mounted on a small rock ledge near the highest point of the rock, partially protected from the elements. The tide staff was mounted against the W side of the rock facing a heavily transited shallow channel into Orca Inlet. The staff was braced with lumber and guyed in place with wires secured to eyebolts set in bedrock. The gage continuously provided good data except for one period when it was over-dampened. Dampening was relieved and the gage was restored to proper operating condition. The gage kept excellent time.

The Shag Rock staff was leveled before and after survey operations, on JD's 182 and 245. Elevations determined for the benchmarks from the opening and closing level runs agreed within 0.001 m. of each other and historic data. Maintenance was performed on Benchmark No. 1 1964 to replace cement which had weathered away from the disk. The disk was not loose.

Based on 25 observations, a marigram reading of 4.7 feet corresponds to 0.0 feet on the tide staff. Over dampening caused an erroneous staff-to-gage comparison on 2 August 1982 (1945Z). The observation was not included in the analyses. Divers removing the Shag Rock orifice anchor and tubing found approximately one-half of one foot of loose sand covering them. The

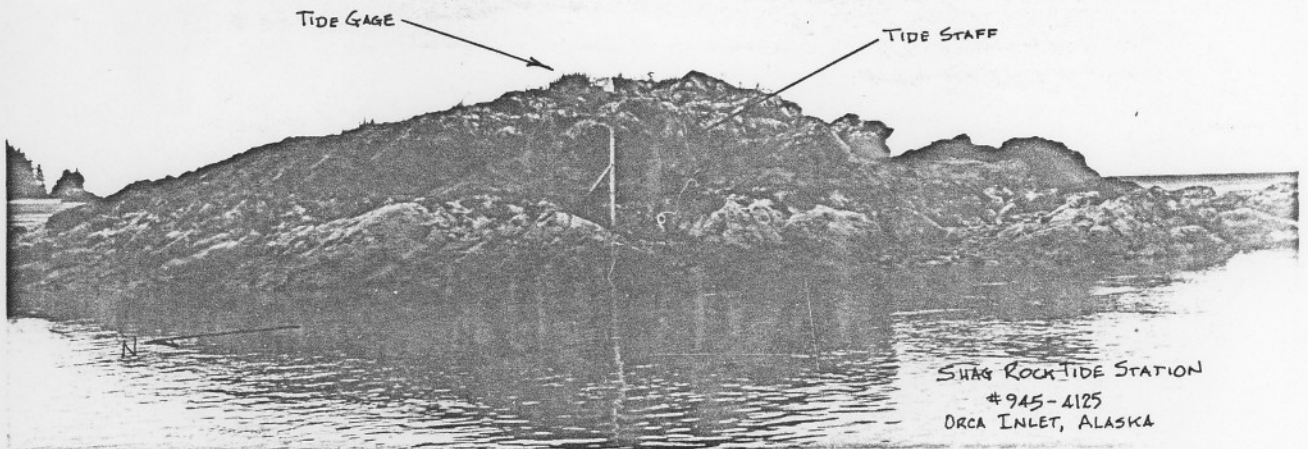
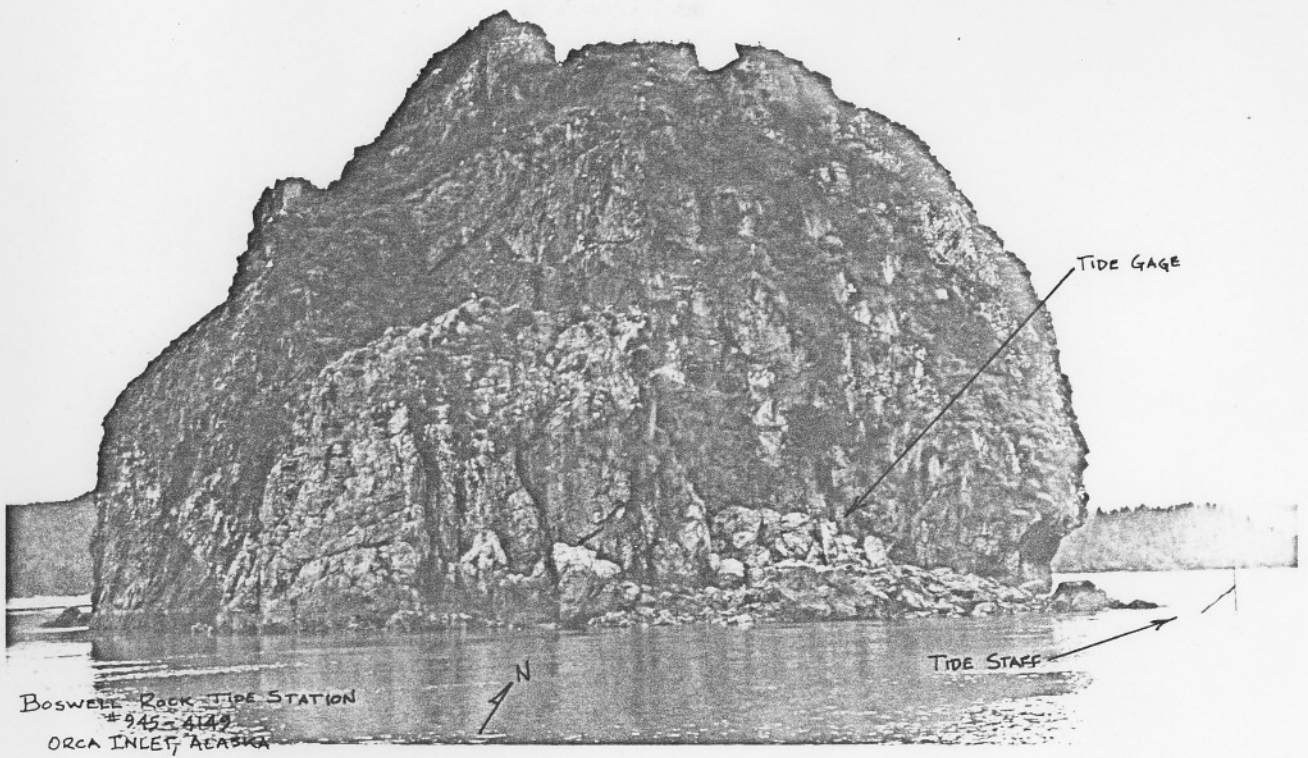
final staff-to-gage comparison (taken the day before orifice removal) was higher than previously recorded values, but no other indications of a blocked orifice were evident. Future installations at the site must take into account the shifting nature of the sandy bottom when installing the orifice. The orifice should be mounted on a stake driven into the bottom and inspected by divers at 2 to 4 week intervals.

Respectfully submitted,

for *Donald A. Hawk*
Eric G. Hawk
Ens. NOAA

Approved and forwarded,

James M. Wintermyre
James M. Wintermyre, CDR, NOAA
Commanding Officer
NOAA Ship DAVIDSON S331



March 14, 1983

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 945-4050, Cordova, AK

Period: July 11 - September 2, 1982

HYDROGRAPHIC SHEET: H-10029

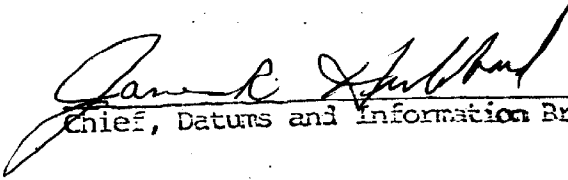
OPR: P132

Locality: ORCA Inlet, Alaska

Plane of reference (mean lower low water): 5.95 feet

Height of Mean High Water above Plane of Reference is 11.6 feet

REMARKS: Recommended Zoning
Zone Direct


Chief, Datums and Information Branch

GEOGRAPHIC NAMES

H-10029

Name on Survey	A ON CHART NO. 16710	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 RANDOM MCNALLY ATLAS	H U.S. LIGHT LIST	I AT-12652
ALASKA (title)	X							X	1
DEEP BAY	X							X	2
GRASS ISLAND	X							X	3
HAWKINS ISLAND	X							X	4
HUMPBACK CREEK	X							X	5
KNOT POINT	X							X	6
NELSON BAY	X							X	7
NORTH ISLAND	X							X	8
NORTH ROCK	X							X	9
OBSERVATION ISLAND	X							X	10
ODIAK CHANNEL	X							X	11
ORCA	X							X	12
ORCA BAY	X							X	13
ORCA CHANNEL	X							X	14
ORCA INLET	X							X	15
SALMO POINT	X							X	16
SHEPARD POINT	X							X	17
SOUTH ROCK	X							X	18
THE NARROWS	X							X	19
WESTERN CHANNEL	X							X	20
									21
									22
									23
									24
									25

Approved:

Charles E. Harrington
Chief Geographer - N/C62x5

9 SEPT. 1983

VELOCITY-TRANSDUCER FILE: V10029

LISTING MADE: 03-13-84

09:12:40

TRANSDUCER CORRECTION TABLES

VESSEL: 3131 YR: B2 FT

VESSEL: 3132 YR: B2 FT

VESSEL: 3135 YR: B2 FT

DAY TIME TRA COR VEL TABLE

DAY TIME TRA COR VEL TABLE

DAY TIME TRA COR VEL TABLE

192	194101	.00	2
192	194349	.00	2
192	194948	.00	2
192	195153	.00	2
192	195442	.00	2
192	200516	1.50	1
192	200714	1.90	1
192	201509	1.50	1
192	201843	1.90	1
192	202351	1.50	1
192	203815	1.90	1
192	210049	1.50	1
192	211421	1.90	1
192	212139	1.50	1
192	215448	1.90	1
192	233121	1.50	1
192	233326	1.90	1
192	233724	.00	2
192	234351	1.50	1
192	234907	1.90	1
192	235411	1.50	1
192	235908	1.90	1
193	001033	1.50	1
193	001750	1.90	1
193	002135	.00	2
193	002539	1.50	1
193	003741	1.90	1
193	004532	1.50	1
193	012723	1.90	1
193	013324	1.50	1
193	014204	.00	2
193	184805	1.50	1
193	185110	1.90	1
193	190817	1.50	1
193	191023	1.90	1
193	201223	1.50	1
193	202317	1.90	1
193	202714	1.50	1
193	202339	1.90	1
194	000941	1.50	1
194	001203	1.90	1
194	001611	1.50	1
194	002341	1.90	1
194	002703	1.50	1
195	202340	.00	2
196	195338	.00	2
196	195835	1.50	1

190	184029	1.20	1
190	222611	.00	2
190	222932	1.20	1
190	224145	1.90	1
190	224441	1.20	1
190	225934	1.90	1
190	230218	1.20	1
190	231318	1.90	1
190	231612	1.20	1
190	232707	1.90	1
190	234042	1.70	1
191	000012	1.70	1
191	000459	1.90	1
191	191435	1.20	1
191	191914	1.90	1
191	193253	1.20	1
191	193836	1.90	1
191	194233	1.20	1
191	194858	1.90	1
191	195157	1.20	1
191	195821	1.90	1
191	201852	1.20	1
191	202425	1.90	1
191	203036	1.20	1
191	203748	1.90	1
191	204112	1.30	1
191	215749	1.90	1
191	220619	1.30	1
191	222945	1.90	1
191	223453	1.30	1
191	224436	1.90	1
191	225517	1.30	1
191	230506	1.90	1
191	231029	1.20	1
191	232005	1.90	1
191	232440	1.20	1
191	233448	1.90	1
191	233653	1.20	1
191	234543	1.90	1
192	000146	1.90	1
202	183229	1.70	1
203	000755	1.70	1
236	190859	.00	2
236	195900	.00	2
245	235959	.00	2

232	183000	.00	1
246	174800	.00	1
246	213500	.00	1
246	235959	.00	1

TRANSDUCER CORRECTION TABLES -- CONT.

VESSEL: 3131 YR: 82 FT

DAY	TIME	TRA COR	VFL TABLE
196	200334	1.90	1
196	200742	1.50	1
196	201224	1.40	1
196	201626	1.50	1
196	202105	1.40	1
196	203754	1.50	1
196	204535	1.90	1
196	204852	1.50	1
196	205142	1.40	1
196	220652	1.50	1
196	220827	1.90	1
196	222104	1.50	1
196	222605	1.90	1
196	223133	1.50	1
196	223725	1.90	1
196	224038	1.50	1
196	224641	1.90	1
196	225038	1.50	1
196	225805	1.90	1
196	230431	1.50	1
196	231041	1.90	1
196	233636	1.50	1
210	184042	1.50	1
210	184401	1.90	1
210	190343	1.50	1
210	190710	1.90	1
210	191017	1.50	1
210	192201	1.90	1
210	192445	1.50	1
210	193622	1.90	1
210	193901	1.50	1
210	194220	1.90	1
210	194944	1.50	1
210	195152	1.90	1
210	195900	1.50	1
210	200227	1.90	1
210	200807	1.50	1
210	200950	1.90	1
210	201522	1.50	1
210	202413	1.40	1
210	222025	1.50	1
210	223036	1.90	1
210	223537	1.50	1
210	224449	1.90	1
210	224752	1.50	1
210	225524	1.40	1
210	230241	1.50	1
210	230838	1.90	1
210	231055	1.50	1

VESSEL: 0 YR: 0

DAY TIME TRA COR VFL TABLE

VESSEL: 0 YR: 0

DAY TIME TRA COR V

TRANSDUCER CORRECTION TABLES -- CONT.

TRANSDUCER CORRECTION TABLES -- CONT.

VESSEL: 3131 YR: 82 FT

DAY TIME TRA CORR VEL TABLE

210	231342	1.90	1
210	231800	1.50	1
210	234228	1.90	1
210	234455	1.50	1
210	235135	1.90	1
210	235338	1.50	1
215	204536	1.50	1
215	204726	1.90	1
215	210555	1.50	1
215	212026	1.90	1
215	213915	1.50	1
221	185319	1.50	1
221	191935	1.90	1
221	192303	1.50	1
221	192810	1.90	1
221	194040	1.50	1
221	194427	1.90	1
221	195050	1.50	1
221	195208	1.90	1
221	200939	1.50	1
221	201423	1.90	1
221	201844	1.50	1
221	202306	1.90	1
221	202555	1.50	1
221	203116	1.90	1
221	203347	1.50	1
221	213544	1.90	1
221	214203	1.50	1
221	215216	1.90	1
221	220926	1.50	1
221	221205	1.90	1
221	221944	1.50	1
221	222701	1.90	1
221	224153	1.50	1
221	224935	1.90	1
221	230345	1.50	1
221	232647	1.90	1
221	233806	1.50	1
221	234551	1.90	1
222	000135	1.90	1
222	231909	1.50	1
222	232045	1.90	1
222	232447	1.50	1
222	232910	1.90	1
222	233230	1.50	1
222	233632	1.90	1
222	234242	1.50	1
223	000002	1.90	1
223	000903	1.50	1

VESSEL: 0 YR: 0

DAY TIME TRA CORR VEL TABLE

VESSEL: 0 YR: 0

DAY TIME TRA CORR

TRANSDUCER CORRECTION TABLES -- CONT.

VESSEL: 3131 YR: 82 FT
DAY TIME TRA COR VEL TABLE

223	181613	1.50	1
223	183324	1.50	1
223	194850	.00	2
228	190118	1.90	1
228	192955	1.50	1
228	193834	1.90	1
228	203252	1.50	1
228	204840	1.90	1
228	205146	1.50	1
229	225741	1.50	1
229	230335	1.40	1
229	233321	.00	2
231	184740	.00	2
231	210941	1.90	1
231	225743	1.50	1
232	000355	1.50	1
233	001502	1.90	1
234	185741	1.90	1
234	190650	1.50	1
234	202516	1.90	1
234	212113	1.50	1
234	223304	1.90	1
234	223659	1.50	1
235	000010	1.50	1
235	195045	1.90	1
235	212331	1.50	1
238	202600	1.50	1
238	202943	1.40	1
238	204058	1.50	1
238	204610	1.90	1
238	204829	1.50	1
238	210037	1.90	1
238	210250	1.50	1
243	181542	1.50	1
243	225959	.00	1
243	235959	.00	1

VESSEL: 0 YR: 0

DAY TIME TRA COR VEL TABLE

VESSEL: 0 YR: 0

DAY TIME

VEL CITY CORRECTION TABLE

TABLE#:	01	YR:	92	FT	TABLE#:	02	YR:	92	FT
DEPTH		VFL	CON		DEPTH		VFL	CON	
8.00		.00			.00		.00		
24.60		.20			999.90		.00		
41.40		.40							
62.60		.60							
98.80		.80							
167.00		1.00							
206.00		1.00							

[illegible]

OPR-P132-DA-82
DA-10-2-82(H-10029), DA-10-3-82(H-10038)
SIGNAL TAPE PRINTOUT

001	1	60	39	08527	145	40	35743	250	0012	000000	BLUFF 2 No. 1, 1964
002	7	60	37	42203	145	42	36457	250	0002	000000	NORTH I. ROCK LT 10, 1964
003	1	60	38	24083	145	43	08650	250	0002	000000	ROOT 2 No. 1, 1964
004	5	60	36	58671	145	45	34479	250	0005	000000	WEST CHANNEL LT 2, 1982
005	7	60	36	23632	145	41	35703	250	0002	000000	POINT 2 No. 2, 1964
006	5	60	35	35917	145	45	40803	250	0006	000000	AZIMUTH MARK 1900
007	6	60	36	14795	145	44	18732	250	0000	000000	SAW 2 No. 2, 1964
008	0	60	38	24371	145	43	07492	250	0002	000000	ROOT 2, 1964
009	7	60	35	04453	145	42	31461	252	0002	000000	ALDER (Temp. Pt.)
010	0	60	34	20754	145	46	47691	250	0011	000000	GRASS 1899
011	5	60	33	02602	145	46	08589	250	0011	000000	NARD 1933
012	1	60	35	44421	145	43	59216	250	0010	000000	NIBSY 1899
013	5	60	31	42503	145	47	38644	250	0003	000000	MAUD 2, 1964
014	0	60	33	08706	145	49	20660	250	0008	000000	STUMP 2 USGS 1952
015	7	60	29	41079	145	54	43547	250	0014	000000	TRADE 1899
016	1	60	37	58819	145	44	58321	250	0004	000000	ORCA BAY LT 9, 1982
017	1	60	33	37678	145	48	16643	139	0004	000000	ACROSS 1933
018	1	60	31	35651	145	55	10910	139	0003	000000	TREAT 1899
019	4	60	32	22695	145	45	35750	139	0000	000000	CORDOVA RADIO MAST 1955
020	6	60	32	58893	145	45	33209	139	0000	000000	CORDOVA RCA TOWER, 1979
021	7	60	33	02672	145	46	06959	139	0000	000000	SPIKE ISLAND LT 1982
022	6	60	32	50673	145	45	59480	250	0004	000000	CORDOVA HARBOR LT 2 1982
024	1	60	33	22330	145	45	21940	252	0000	000000	GRAVEL PT NRT RADIO MAST
025	1	60	28	03416	145	57	26502	139	0030	000000	PILING
026	1	60	32	16189	145	45	41353	139	0009	000000	ODIAK PHAROS LIGHT, 1982

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 3131

SHEET : DA-10-2-82

TIME	DAY	PATTERN 1	PATTERN 2
194101	192	-00002	-00001
200516	192	-00002	-00001
215248		-00001	-00002
233121		-00002	-00002
001033	193	-00002	-00002
011828		-00002	-00001
184805	193	-00003	-00001
201223		-00001	-00003
232339		-00001	-00001
000941	194	+00000	-00002
202340	195	-00002	-00003
203840		-00002	-00001
205103		-00003	-00001
222839		+00004	-00002
235831		-00001	-00002
195338	196	-00003	+00004
220652		+00004	-00002
184042	210	-00003	+00004
204536	215	+00004	-00004
185319	221	+00004	-00004
000135	222	+00004	-00004
231909	222	-00003	+00000
000002	223	-00003	+00000
181613	223	+00004	-00004
212258	223	-00003	+00000
234201		+00000	+00004
190118	228	+00004	-00004
225741	229	-00003	+00000
184740	231	-00003	+00000
194301		+00004	-00004
210941	231	+00004	-00004
222548		-00003	+00000
235542		+00000	+00004
000355	232	+00000	+00004

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 3131

SHEET : DA-10-2-82

TIME	DAY	PATTERN 1	PATTERN 2
001502	233	+00000	-00004
225052	233	+00000	-00004
185741	234	-00004	+00004
202516	234	+00000	+00004
212113		+00004	+00000
223056		+00000	+00004
234134		-00004	+00004
000010	235	-00004	+00004
195045	235	+00004	-00004
212331		-00004	+00004
214125		+00004	+00000
223615	235	+00000	-00004
234858		+00000	+00004
181542	243	-00003	-00003
183547		-00003	+00004
184411		-00003	-00003
202615		-00003	+00004
215410	243	-00002	-00001

ELECTRONIC CORRECTOR ABSTRACT

VESSEL : 3132

SHEET : PA-10-2-82

TIME	DAY	PATTERN 1	PATTERN 2
184029	190	-00002	+00000
191531		+00000	-00002
195135		+00000	+00003
211141		-00002	+00003
213728		+00003	-00002
224441		+00003	-00001
225934		+00003	-00002
000012	191	+00003	-00002
191435	191	-00002	+00003
000146	192	-00002	+00003
190859	236	-00002	-00001
005830	245	-00002	+00002

RANGE-AZIMUTH CORRECTOR ABSTRACT

VESSEL : 3132

SHIFT : DA-10-2-82

TIME	DAY	PATTERN 1	PATTERN 2
183229	202	+00002	NO-CORRECTOR
000755	203	+00002	"

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATAU.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

VESSEL	DATE	SERIAL NO.	PROJ. NO.		YEAR	AP. PROX. PENETRATION	WEIGHT OF SAMPLER	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	CHECKED BY	DATE CHECKED	REMARKS (Unusual conditions, cohesiveness, density cutter, stat. no., type of bottom relief, etc.)	OBS. INIT.
			LATITUDE	LONGITUDE										
DAVIDSON	7/14	2300	60/37	145/44	1982	33.8	10 lb		gy	fne S	DAV	2-SEPT. 82 (JWMS)		
	7/14	2303	60/37	145/41	1982	86.2	"		gy	M				
	7/14	2304	60/37	145/42	1982	40.6	"		gy	M				
	7/14	2305	60/37	145/42	1982	14.2	"		gy	M				
	7/14	2306	60/36	145/42	1982	10.5	"		gy	fne S				
	7/14	2307	60/36	145/42	1982	14.7	"		gy	fne S				
	7/14	2308	60/35	145/42	1982	26.0	"		gy	fne S				
	7/14	2309	60/35	145/43	1982	15.6	"		gy	fne S				
	7/14	2310	60/36	145/43	1982	30.7	"		gy	fne S				
	7/14	2311	60/37	145/43	1982	14.7	"		gy	sft-fne S, brk sh				
	7/14	2312	60/37	145/44	1982	76.2	"		gy	hrd				
	7/14	2313	60/37	145/44	1982	54.4	"		gy	hrd				
	7/14	2314	60/36	145/44	1982	51.9	"		gy	hrd				
	7/14	2315	60/36	145/45	1982	27.3	"		gy	fne sand S				
	8/17	3304	60/34	145/44	1982	5.6	"		gy	fne S				
	"	3307	60/34	145/44	1982	9.7	"		gy	fne S				

Use more than one line per sample if necessary.

**OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA**

VESSEL		PROJ. NO.		YEAR		DA 10-2-82 (H-10029)		CHECKED BY		DATE CHECKED	
LAUNCH DA-1 (3131)		OPR - P132-DA-82		1982				DML		2-SEP-82	
SERIAL NO.	DATE	SAMPLE POSITION		DEPTH (Fathoms) feet	WEIGHT OF SAMPLE PLASTER	AP. PROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, density, cutter, etc., not the type of bottom, relief, etc., slope, plain, disposition, etc.)	OBS. INIT.
		LATITUDE	LONGITUDE								
3308	7/19/82 JD	60°35'21.38	145°42'45.17	27.2	10.4			gy	fne S		
3309	"	60°35'21.04	145°43'26.27	30.2	"			gy	fne S		
3310	"	60°35'04.15	145°42'50.67	31.6	"			gy	fne S	KEEL FRAGMENTS	
3311	"	60°35'04.00	145°43'31.05	36.1	"			gy	fne S	BOAT RAIL FRAGMENT	
3312	"	60°34'46.65	145°43'41.42	41.0	"			gy	fne S, brk sh		
3313	"	60°34'47.16	145°44'19.31	22.8	"			gy	fne S		
3314	"	60°34'29.65	145°44'19.80	56.1	"			gy	fne S		
3315	"	60°34'28.87	145°45'39.00	24.4	"			gy	fne S		
3316	"	60°34'47.27	145°45'36.86	16.4	"			gy	fne S		
3317	"	60°35'07.41	145°44'58.87	25.8	"			gy	fne S		
3318	"	60°35'21.56	145°45'16.51	23.4	"			gy	fne S		
3319	"	60°35'06.33	145°45'39.25	43.1	"			gy	fne S		
3320	"	60°34'46.07	145°46'17.78	26.6	"			gy	fne S		
3321	"	60°34'28.84	145°46'42.37	22.3	"			gy	fne S		

NOAA FORM 76-40 (8-74)						
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION						
NONFLOATING AIDS OR LANDMARKS FOR CHARTS						
Replaces C&GS Form 567.						
<input checked="" type="checkbox"/> TO BE CHARTED <input type="checkbox"/> TO BE REVISED <input type="checkbox"/> TO BE DELETED	REPORTING UNIT (Field Party, Ship or Office) NOAA Ship DAVIDSON	STATE Alaska	LOCALITY Orca Inlet	DATE 9/10/82		
The following objects HAVE <input checked="" type="checkbox"/> BEEN INSPECTED FROM SEAWARD TO DETERMINE THEIR VALUE AS LANDMARKS. OPR PROJECT NO. P132-DA-82		JOB NUMBER H-10029	DATUM NA 1927			
CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses.)	POSITION		METHOD AND DATE OF LOCATION (See instructions on reverse side)		CHARTS AFFECTED
		LATITUDE ° / ' " D.M. Meters	LONGITUDE ° / ' " D.P. Meters	OFFICE	FIELD	
	North Island Rock Light 10 (North Island Rock Light) *	60/37	42.203145/4236.457		F-2-6-L 6/27/82	16709 16710
	Orca Bay Light 9 (L.L. No. 3412.50)	60/37	58.819145/4458.321		F-2-6-L 6/27/82	16709 16710
	West Channel Light 2 (L.L. No. 3421)	60/36	58.671145/4534.479		F-2-6-L 6/27/82	16709 16710
	* (L.L. No. 3413)					
	SEE L-747(84)					

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 367.

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NONFLOATING AIDS OR LANDMARKS FOR CHARTS

☒ TO BE CHARTED
☒ TO BE REVISED
☐ TO BE DELETED

REPORTING UNIT
(Field Party, Ship or Office)

NOAA Ship DAVIDSON

STATE

Alaska

LOCALITY

Gulf of Alaska

Orca Inlet

DATE

9/10/82

The following objects HAVE ☒ HAVE NOT ☐ been inspected from seaward to determine their value as landmarks.

DATUM

SURVEY NUMBER

OPR PROJECT NO.
P132-DA-82

NA 1927

POSITION

DESCRIPTION

(Record reason for deletion of landmark or aid to navigation.
Show triangulation station names, where applicable, in parentheses.)

Egg Island Light E
(L.L. Nos. 185, 3405)

Mummy Island Light 5
(L.L. No. 3406)

LATITUDE

° / ' " D.M. Meters

° / ' " D.P. Meters

60/22

06.639

145/44

44.415

60/27

45.673

145/59

19.661

METHOD AND DATE OF LOCATION
(See instructions on reverse side)

OFFICE

FIELD

F-2-6-L
7/13/82

F-3-6-L
7/19/82

CHARTS
AFFECTED

16700
16709

16700
16709

ORIGINATING ACTIVITY

☒ HYDROGRAPHIC PARTY
☐ GEODETIC PARTY
☐ PHOTO FIELD PARTY
☐ COMPILATION ACTIVITY
☐ FINAL REVIEWER
☐ QUALITY CONTROL & REVIEW GRP.
☐ COAST PILOT BRANCH

(See reverse for responsible personnel)

See L-747(84)

X.O. DBM
F.O.P.



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Pacific Marine Center
1801 Fairview Avenue East
Seattle, Washington 98102

August 18, 1982

CPM3x2/WAW

TO: Commanding Officer *CA*
NOAA Ship DAVIDSON

FROM: *Ned C. Austin*
CPM3 - Ned C. Austin

SUBJECT: OPR-P132-DA-82, Orca Inlet, Alaska

As discussed during telecons on August 10 and 12, 1982, permission is granted to use 1-9999 entries on the corrector tapes to delete the overprint deeps in areas of high sand wave concentrations contained on H-10029, DA-10-2-82.

As an alternative, the times of the sand wave peaks may be adjusted to coincide with the times of the recorded sounding intervals. Although this procedure may exceed time tolerances for scaling peaks and deeps as specified in Table 4-14 of the Hydrographic Manual, it is justified since sand waves are generally migratory in nature.

Either of the above methods are acceptable; however, it is important that the least depths of the sand waves be accurately scaled and legibly portrayed on the final field sheet with appropriate annotation, and the method used to depict these features should be discussed in the descriptive report.



SURVEY APPROVAL SHEET

- A. Amount and degree of personal supervision of field work and frequency of record and sheet inspection:

Work was under direct supervision of F00. Records were inspected at random and the sheets daily by me, to provide recommendations where needed.

- B. State whether the survey is complete and adequate, or if additional field work is recommended:


Survey is complete and adequate to supersede previous surveys. The small boat harbor at Cordova was being enlarged while we were there and should be surveyed next year if construction is completed.

- C. Cite additional information or references that may be of assistance for verifying and reviewing the survey:

- D. Signed statement of approval of the field sheet and all accompanying records:

Date: 12/7/82

Approved and forwarded by:


S. M. Wintermye
CDR, NOAA
Commanding Officer

HYDROGRAPHIC SURVEY STATISTICS

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

RECORDS ACCOMPANYING SURVEY: TO BE COMPLETED WHEN SURVEY COMPLETED						
RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION			AMOUNT
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS			2
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS			7
DESCRIP- TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS			2			
VOLUMES						
BOXES			1			

T-SHEET PRINTS (List) Blueprints 118504, 118505, 118506

SPECIAL REPORTS (List) *Current Measurements Observations Electromagnetic Control Report*OFFICE PROCESSING ACTIVITIES *Corrections to Echo Soundings*

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE- VERIFICATION	VERIFICATION	TOTALS	
POSITIONS ON SHEET				
POSITIONS CHECKED		1749		
POSITIONS REVISED		86		
SOUNDINGS REVISED		113		
SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED				
	TIME - HOURS			
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	06	VER	EVAL	06
VERIFICATION OF CONTROL		22	03	25
VERIFICATION OF POSITIONS		125	22	147
VERIFICATION OF SOUNDINGS		108	08	116
COMPILATION OF SMOOTH SHEET		66	65	131
APPLICATION OF TOPOGRAPHY		36	04	40
APPLICATION OF PHOTOBATHYMETRY		00	00	00
JUNCTIONS		10	02	12
COMPARISON WITH PRIOR SURVEYS & CHARTS		00	11	11
VERIFIER'S REPORT		06	17	23
OTHER Evaluation Update		99	00	99
Digitization	14			14
TOTALS	20	472	132	624
Pre-Verification by J. S. Green	Beginning Date 12-30-82		Ending Date 12-30-82	
Verification by M. Sanders	Beginning Date 4-5-83/12-21-83		Ending Date 3-2-84/4-12-84	
Verification Check by S. H. Otsubo, J. S. Green	Time (Hours) 71		Date 4-17-84	
Marine Center Inspection by	Time (Hours)		Date	
Quality Control Inspection by	Time (Hours)		Date	
Requirements Evaluation by	Time (Hours)		Date	

PACIFIC MARINE CENTER
EVALUATION REPORT

REGISTRY NO: H-10029

FIELD NO: DA-10-2-82

Alaska, Orca Inlet, Hawkins Inlet to Shepard Point

SURVEYED: July 11 - August 31, 1982

SCALE: 1:10,000

PROJECT NO: OPR-P132-DA-82

SOUNDINGS: Ross Fineline Fathometer
Leadline and Sounding Poles

CONTROL: Mini-Ranger
Range/Range
Range/Azimuth

Chief of Party.....CDR J. M. Wintermyre

Surveyed By.....CDR J. Wintermyre
LCDR D. MacFarland
LT D. Dreves
LTJG N. Bogue
ENS E. Hawk
ENS J. Waddell
ENS J. Duggan

Automated Plot By.....PMC Xynetics Plotter

Verified By.....M. Sanders

Evaluated By.....K. M. Scott

1. INTRODUCTION

H-10029 is a basic hydrographic survey with field work accomplished by NOAA Ship DAVIDSON in accordance with Project Instructions OPR-P132-DA-82, Orca Inlet, Alaska, dated February 19, 1982, Change No. 1 dated May 4, 1982, and Change No. 2 dated July 13, 1982.

Orca Inlet is the transit Channel for Cordova and Orca, Alaska. The fishing industry and increased tourism has focused on the importance for updated information in the area. This passage is characterized by strong tide and current action which combined with a predominately fine sand floor causes a constantly shifting profile and concern for those users.

An inset has been plotted at the scale of 1:2,500 to provide more detailed hydrographic information and pier orientation for the Chugach Alaska Fisheries Cannery and the town of Orca.

Predicted tides based on the Cordova, Alaska (945-4050) gage were utilized during shipboard processing. Tide correctors used for the reduction of final soundings reflect the approved hourly heights from the same gage.

The TRA correctors were revised during verification to apply the appropriate transducer depths to the detached positions. The copy of final TRA correctors is included as an appendix to the Descriptive Report.

Projection parameters used to plot the field sheets have been changed to meet smooth sheet specifications and center the hydrography.

2. CONTROL AND SHORELINE

Geodetic positions for control stations used to compute the survey are preliminary adjusted positions referenced to the North American 1927 datum.

The following revision prints of registered shoreline manuscripts (1:10,000) provide topographic information.

<u>Blueprint</u>	<u>T-Sheet</u>	<u>Dates of Photography/Field Edit</u>	<u>Dates of Revision Photography</u>
118505	12651	Aug '64/Sep '65-May '66	July '81
118504	12649	Aug '64/Sep '65-May '66	July '81
118506	12652	Aug '64-Jul '66/Sep '65-May '66	July '81

Shoreline for the Chugach Alaska Fisheries Cannery inset was applied from a 1:2,500 enlargement of T-12652 with revisions to piers applied from hydrographic information.

3. HYDROGRAPHY

Soundings at line crossings are in good agreement. Discrepancies exist in areas where the slope of the bottom cannot adequately be portrayed at the scale of the survey.

The bottom configuration, development of shoal soundings, determination of least depths, and delineation of standard depth curves are adequate. The three-foot supplemental curve and brown depth curves were added for further delineation. Where the slope precluded showing all depth curves, an effort was made to follow standard cartographic convention showing the shoalest and deepest curves.

4. CONDITION OF SURVEY

The hydrographic records and reports are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change 3.

5. JUNCTIONS

H-10038 (1982) joins this survey to the south. Soundings have been transferred and junction curves inked in agreement.

H-10029 adjoins H-8854 (1965). Soundings are in agreement. The chart compiler should refer to H-10029 for a more accurate portrayal of depth curves.

*The 5-ft depth in
lat. 60°34'19"N, long. 145°45'59"W
was not adequately developed for
least depth. Dhw 10/2/84*

6. COMPARISON WITH PRIOR SURVEYS

H-8852 (1965) 1:5,000
H-8853 (1964-65) 1:10,000

Prior survey soundings north of latitude 60°35'40"N and east of longitude 145°44'00"W are comparable with differences of two feet, the current survey being slightly deeper. This is attributable to the mud and sand bottom and modern surveying methods.

Rocks and islets north and east of Observation Island on the current survey elevations are as much as 13' higher than H-8853.

Soundings south of Observation Island, Knot Point and west of longitude 145°44'00"W show considerable change due to shoaling, the magnitude of which is as much as 28 ft at approximately latitude 60°34'20"N, longitude 145°44'55"W.

Two rocks covered two feet at MLLW; position 7007 latitude 60°34'17.53"N, longitude 145°47'05.64"W and position 7008 latitude 60°34'18.40"N, longitude 145°47'01.44"W, appear to be the same two rocks located on H-8853 awash two feet. These rocks should be charted from the present survey.

AWOIS # 50263
PSR item 8, a 14-foot, prior survey sounding at latitude 60°35'12"N, longitude 145°45'37.8"W is adequately discussed in Section K, Descriptive Report except that the 15 foot diver-determined depth should be charted. *Chart 15 Ft Rock*

H-10029 is adequate to supersede all prior survey data within the common area.

7. COMPARISON WITH CHART

16710 (12th Ed., August 11, 1979)

a. Hydrography - Charted information with the exception of the channel buoys originates with the previously discussed prior surveys. (See Section 6 of this report.)

AWOIS # 50169
PSR item 7 originated with CL1233/71, a reported grounding while lying to the face of the cannery pier in Orca. The DAVIDSON investigated the area as described in the Descriptive Report, Section K. Position 4618, latitude 60°34'55.06"N, longitude 145°42'57.69"W, records the position of an obstruction located during the investigation. However, that sounding has been exceeded by an 11-foot sounding found while running on line with the pier face. That 11-foot sounding should be charted as least depth in the area.

H-10029 is adequate to supersede charted hydrography within the common area.

There have been no dangers to navigation identified or reports submitted by the ship or PMC Nautical Chart Branch for this survey.

b. Controlling Depths - There are no controlling depths within the limits of the survey.

c. Aids to Navigation - The channel buoys portrayed on H-10029 are maintained by the Coast Guard and have been relocated and renumbered. The 13th Edition of Chart 16710 adequately represents the location of the new buoys. All aids to navigation adequately serve the purpose intended.

8. COMPLIANCE WITH PROJECT INSTRUCTIONS

H-10029 adequately complies with the project instructions as amended and noted in section 1 of this report.

9. ADDITIONAL FIELD WORK

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

Respectfully submitted,

Karol M. Scott

Karol M. Scott
Cartographer
April 12, 1984

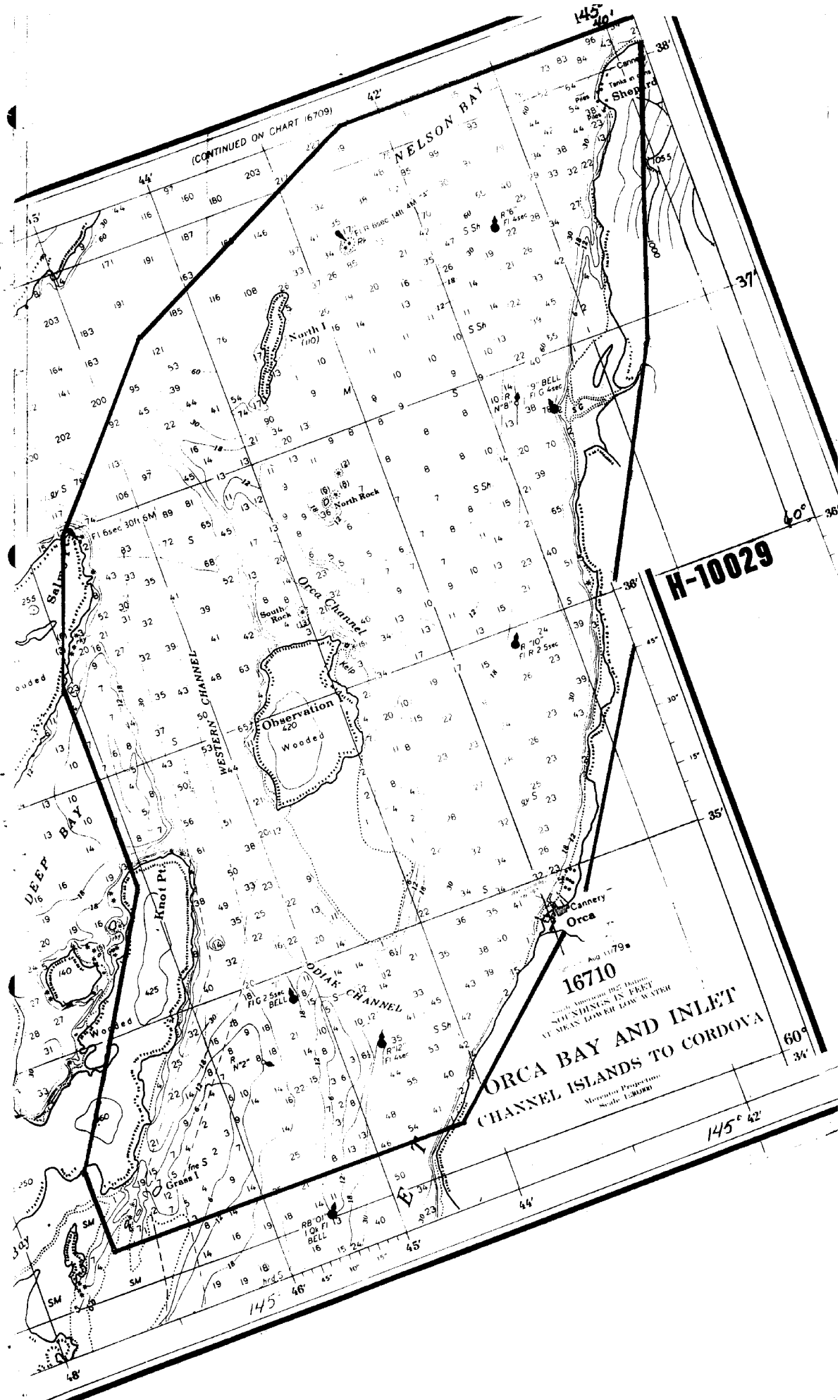
The 5 - fath.
depth noted on
pg. 2 of this
Evaluation
Report should
be adequately
developed on
a future
survey.

John
10/2/84

This survey has been verified and evaluated. I have examined the survey and it meets Charting and Geodetic Services survey standards and requirements for use in nautical charting except as noted in the Evaluation Report. The survey is recommended for approval.

J. S. Green

James S. Green
Supervisory Cartographer



(CONTINUED ON CHART 16709)

NELSON BAY

H-10029

16710
SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER
ORCA BAY AND INLET
CHANNEL ISLANDS TO CORDOVA

Meridian Projection
Scale 1:200,000

ATTACHMENT TO DESCRIPTIVE REPORT FOR H-10029

I have reviewed the smooth sheet, accompanying data, and reports of this hydrographic survey. Except as noted in the Evaluation Report, the hydrographic survey meets or exceeds Charting and Geodetic Services (C&GS) standards, complies with instructions, and is accurately and completely represented by the smooth sheet and digital data file for use in nautical charting.

D. W. Yeager 5/15/84
Chief, Nautical Chart Branch (Date)

CLEARANCE:

N/MOP2:LWMordock

SIGNATURE AND DATE:

Lumpkin Mordock 5/21/84

After review of the smooth sheet and accompanying reports, I hereby certify this survey is accurate, complete, and meets appropriate standards with only the exceptions as noted above. The above recommendations are forwarded with my concurrence.

Charles K. Townsend 5/24/84
Director, Pacific Marine Center (Date)



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

DEC 12 1989

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

FROM: Lieutenant Commander *Maureen R. Kenny*, NOAA
Chief, Operations Section
Hydrographic Surveys Branch

SUBJECT: Addendum to Evaluation Report for
Survey H-10029 (1982)

An inconsistency was noted between the descriptive report and smooth sheet of the present survey. The smooth sheet shows a submerged rock covered 6 feet at MLLW, and the descriptive report states that the rock is awash 6 feet at MLLW in latitude 60°36'51.29"N, longitude 145°45'31.03"W. After a review of the records, a determination was made that the descriptive report is incorrect. It has been revised.

cc:
N/CG245 - Chelgren-Koterba



Hydrographic Index No. 113E



MARINE CHART BRANCH

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10029

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.

[illegible]

