

H10636

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

Type of Survey ..... Hydrographic  
Field No. .... RA-10-15-95  
Registry No. .... H-10636

### LOCALITY

State ..... Alaska  
General Locality ..... Prince William Sound  
Sublocality ..... Pigot Bay and Vicinity

19 95

CHIEF OF PARTY  
CAPT Dean R. Seidel, NOAA

### LIBRARY & ARCHIVES

DATE ..... APR 3 1997

**HYDROGRAPHIC TITLE SHEET**

H-10636

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

FIELD NO.

RA-10-15-95

State Alaska

General locality Prince William Sound

Locality Pigot Bay and Vicinity

Scale 1:10,000 Date of survey August 26 - October 17, 1995

Instructions dated July 18, 1995, Change #1-8/30/95 Project No. OPR-P125-RA

Vessel NOAA Ship RAINIER, R-4(2124), RA-5(2125), RA-6(2126), RA-9(2129)

Chief of party CAPT Dean R. Seidel, NOAA

Surveyed by LT D.Haines, LT M.Larsen, LTJG D. Baird, ENS S.Smith, ENS E.Christensen  
ENS N.Bennett, ENS J.Becker, ENS J.Crocker, SST J.Fleischmann

Soundings taken by echo sounder, hand lead, pole DSF-6000N, Innerspace 448

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by: G. Kay Automated plot by HP Design Jet 650C

Verification by D. Doles, R. Mayor, J. Stringham

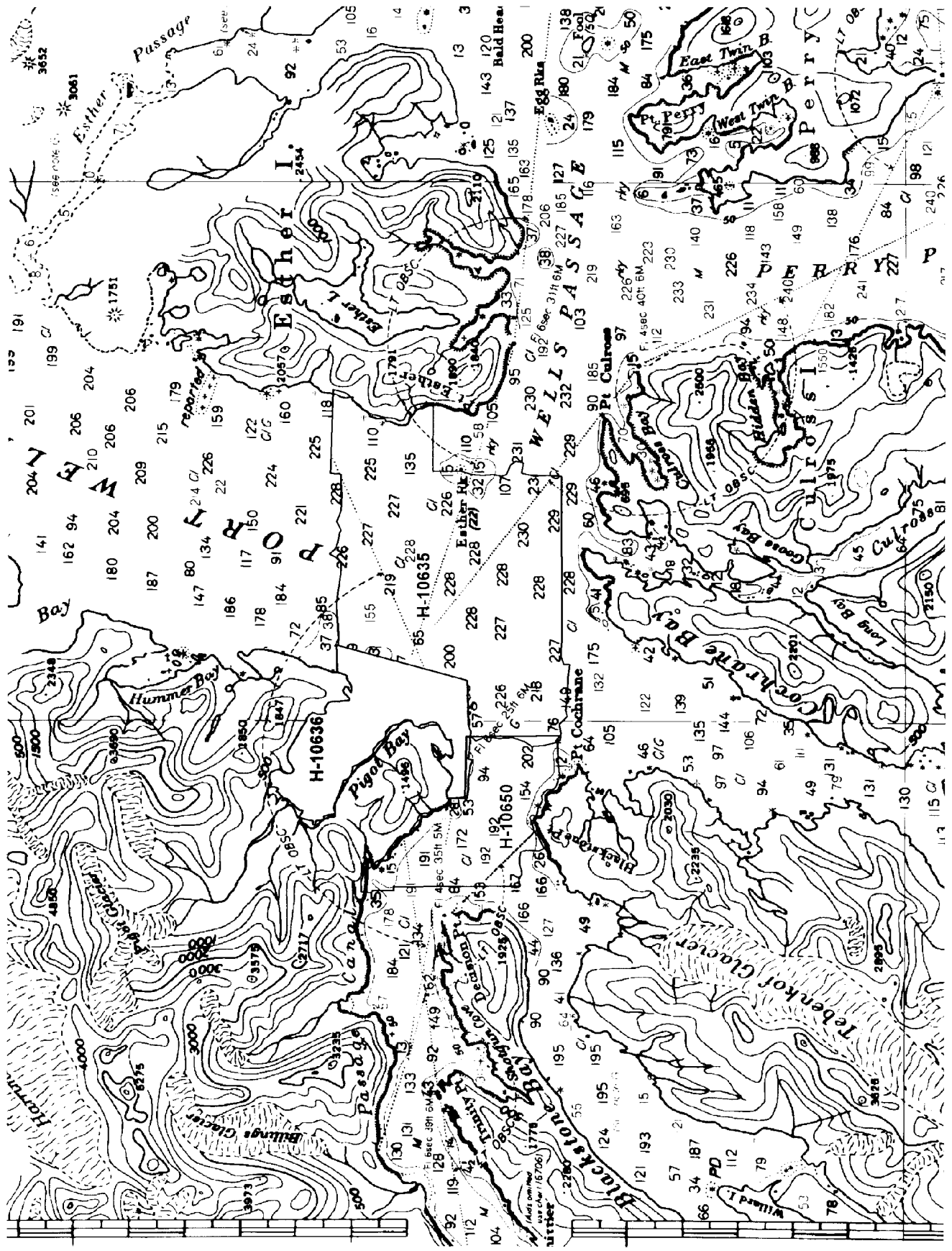
Soundings in ~~fathoms~~ Fathoms ~~feet~~ at ~~MLLW~~ MLLW

**REMARKS:** Time in 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.

All depths listed in this report are referenced to mean lower low water unless otherwise noted.

AWOIS / SURF MCR 3/27/97

SC 4-3-97



# Descriptive Report to Accompany Hydrographic Survey H-10636

Field Number RA-10-15-95  
Scale 1:10,000  
August - October 1995  
NOAA Ship RAINIER  
Chief of Party: Captain Dean R. Seidel, NOAA

## A. PROJECT ✓

This basic hydrographic survey was completed in Northwest Prince William Sound, Alaska, as specified by Project Instructions OPR-P125-RA dated July 18, 1995, and Change Number 1 dated August 30, 1995.

Survey H-10636 corresponds to "sheet AH" as defined in the Project Instructions.

This survey will provide contemporary hydrographic survey data for updating existing nautical charts. Requests for hydrographic surveys and updated charts have been received from the Defense Mapping Agency, the Southwest Alaska Pilot's Association, and private interests such as cruise ship lines and local fishermen.

## B. AREA SURVEYED *See Evaluation Report section B*

The survey area covered is Pigot Bay and vicinity. The survey's eastern limit is bounded by  $148^{\circ} 17.4' W$ , and the western limit bounded by  $148^{\circ} 25.4' W$ . The northern limit is bounded by  $60^{\circ} 51.5' N$ , and the southern limit is  $60^{\circ} 47.8' N$ .

*\* Western limit is defined by the shoreline along the west side of Pigot Bay and extends northwest to longitude  $148^{\circ} 24' W$ .*  
Data acquisition was conducted from August 26, 1995 (DN 238) through October 17, 1995 (DN 290).

## C. SURVEY VESSELS ✓

Data were acquired by RAINIER and four survey vessels as noted below:

Vessel	EDP #	Operation
RAINIER	2120	Sound Velocity Cast
RA-4	2124	Hydrography Shoreline Verification
RA-5	2125	Hydrography Shoreline Verification Bottom Samples
RA-6	2126	Hydrography

Vessel	EDP #	Operation
RA-9	2129	Shoreline Verification

**D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓**

**HDAPS**

Data were acquired and processed using HDAPS Programs. A complete listing is included in Appendix VI. \*

**HYPACK ✓**

Data acquired on DN 277 were collected using HYPACK (DOS), v. 5.2, with the following program updates:

Program Name	Version	Date Installed
HYSPEED	3/24/95	4/1/95
IOTEST	3/17/95	4/1/95

Processing was conducted using the HDAPS HP system. HYPACK (DOS) files were translated to a PC\_DAS format using a Power Basic program CONV\_HYP.EXE (11/11/95) provided by N/CS32 and modified by RAINIER personnel. The files were then loaded into HDAPS and processed in the same manner as PC\_DAS data.

In addition GPSINIT.BAT (5/19/94), was used to initialize the Ashtech GPS receiver.

**Problems ✓**

None

**VELOCITY ✓**

Velocity corrections were determined using:

Program Name	Version	Date Installed
VELOCITY	2.11	3/5/95

*\* Filed with the survey records.*

### E. SONAR EQUIPMENT ✓

Sonar equipment was not used on H-10636.

### F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. Serial numbers are included on the headers of the daily Raw Master Printouts.\* No problems which effect survey data were encountered. All DSF-6000N soundings were acquired using the High + Low, high frequency digitized setting.

An INNERSPACE 448, Serial Number 300, is a single frequency (208 kHz) thermal paper trace echo sounder, was used on vessel 2129.

### G. CORRECTIONS TO ECHO SOUNDINGS ✓

Correctors for the velocity of sound through water were determined from the casts listed below.

Velocity Table #	Cast #	DN	Cast Position	Deepest Depth (m)	Applicable DN
1	1	239	60° 45' 42" N 148° 09' 48" W	600	238-244
3	2	253	60° 47' 12" N 148° 13' 42" W	535	248-258
7	4	278	60° 48' 06" N 148° 16' 57" W	525	276-286
9	5	296	60° 40' 50" N 148° 03' 02" W	571	290-306

*outside of survey limit*

*" " " "*  
*" " " "*  
*" " " "*

The sound velocity casts were acquired with SBE SEACAT Profiler (S/N 811), calibrated 03/31/95. Velocity correctors were computed using the PC program VELOCITY in accordance with Hydrographic Survey Guideline (HSG) No. 69.

A printout of the Sound Velocity Corrector Table used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections". *Filed with the survey records.*

**Static Draft** ✓

A transducer depth was determined using FPM Fig 2.2 for 2124-2126 and 2129 in the spring of 1995. These values were entered into the offset tables\* for each survey platform.

**Settlement and Squat** ✓

Correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.3, and are included with project data for OPR-P125-RA. The data for 2124-2126 and 2129 were collected in Shilshole Bay, Washington in the Spring of 1995.

**Offset Tables** ✓

Offset tables contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 4-9 correspond to the number of the vessel. The offset tables were compiled with new measurements in the spring of 1995 and are contained in the "Separates to be Included with Survey Data". \*

**Heave** ✓

The launches and skiffs are not equipped with heave, roll and pitch (HRP) sensors.

**Bar Check and Lead Lines** ✓

Bar check lines were calibrated by RAINIER personnel during the winter inport 1994-1995. Calibration forms are included with project data for OPR-P125-RA. Bar checks were performed weekly and served as a functional check of the DSF-6000N.

**Tide Correctors** ✓

Predicted tides for the project were provided on diskette by N/OES334 through N/CS31 for the Cordova, Alaska reference station (945-4050). Tidal correctors as provided in the project instructions for H-10636 are:

Time Correction	Height Correction
0 hr 0 min	X0.96

HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report. \*

Valdez, AK (945-4240) was used as the primary control station for datum determination at all subordinate stations.

*\* Filed with the survey records.*

RAINIER personnel installed an 8200 digital gage at Perry Island, South Bay (945-4721), and Cochrane Bay (945-4851) on August 22, 1995. The Perry Island staff was connected to five bench marks during the opening levels run on August 22, 1995, and during closing levels conducted on October 31, 1995. The tide gage ran without problems during data acquisition.

The Cochrane Bay staff was connected to five bench marks during the opening levels run on August 24, 1995, and closing levels run on October 17 and 19, 1995. The regulator was replaced at the Cochrane Bay tide gage on October 12, 1995 due to a dropping delivery pressure. In addition, higher than usual staff-to-gage differences were noticed on October 17, 1995, when closing levels were conducted. The gage was replaced on October 19, 1995, but staff-to-gage differences remained unstable. Upon removing the gage on October 21, it was observed that the orifice had been disturbed and the orifice tubing damaged. A graph of the tide data shows a normal pattern until October 15, when it is believed the orifice tubing was vandalized.

The station description, field tide record, preliminary field tide note and data (Appendix V) have been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded to N/OES23 in accordance with FPM 4.2.3.\* *Approved Tide Note dated April 18, 1986 is attached.*

#### H. CONTROL STATIONS *SEE Evaluation Report, section H*

A listing of the geodetic stations used to control this survey is <sup>*attached to*</sup> ~~included in Appendix III~~ of this report. The horizontal datum for this project is NAD83.

DGPS stations were installed on existing stations PORT and CAB. Station PORT is located on Esther Rock and station CAB is located on a prominent point west of Pigot Point Light. These stations were recovered in accordance with methods stated in Section 5.2.4 of the FPM. In addition, Coast Guard differential GPS beacon stations at Cape Hinchinbrook and Potato Point were used according to specifications listed in Section 6.2 of the Project Instructions.

For further information see the "Fall 1995 Horizontal Control Report" that will be submitted at the end of the project.

#### I. HYDROGRAPHIC POSITION CONTROL *SEE Evaluation Report, section I*

##### Method of Position Control

All soundings and features were positioned using differential GPS. Serial numbers for Ashtech GPS equipment are annotated on the data printouts.\*



## Ashtech GPS ✓

VHF differential shore stations were established at stations CAB and PORT. The difference between the computed location and the published positions at station CAB and PORT were recorded by the MONITOR 3.0 program on a PC.

Data from a 24-hour period were recorded and examined for signs of multi-path signal reflection, which was not evident at any station. Scatterplot results are included in the "Project related data for OPR-P125-RA".

## Calibrations & Systems Check Methods ✓

System checks were performed in accordance with Section 3.4.4 of the FPM. Two observations of position were made from two independent DGPS base stations. The results were transferred to forms which are included in the project data for OPR-P125-RA.

An abstract of the system checks is included in the "Separates to be Included with Survey Data, III. Horizontal Position Control and Corrections to Position Data".\*

## Problems ✓

None

## J. SHORELINE *SEE Evaluation Report, section J.*

Shoreline map DM-10062 was supplied by N/CS341 in Mylar and Standard Digital Data Exchange Format (SDDEF). The digital files were projected using OPR-P125 geodetic parameters using program Shore Version 2.0, provided by N/CS32, and stored in HYPACK (\*.DIG) format.

## Method of Shoreline Verification

Shoreline verification was conducted near predicted lower low water in accordance with FPM 7.1. Shoreline verification was accomplished by assigning sequential reference numbers and taking detached positions (DPs).

Shoreline and DM features verified via visual inspection were assigned sequential reference numbers, described, and recorded in the field using reference forms and corresponding 1:10,000 photocopies of the DM. Reference numbers, descriptions, and heights corrected to MLLW using predicted tides are recorded on the reference form. Corresponding notes were annotated on the photocopies of the DM when deemed necessary. The annotated photocopies of the DM and the reference forms are included with the survey data.

DP's taken during shoreline verification were recorded on the DP forms.\* These indicate significant DM features and features not found on the DM. Where possible, positions of some DM features were verified during inshore mainscheme hydrography and annotated on the master printouts.\*

Detailed 1:10,000 "Bottom Sample and Detached Position Plots" are provided showing all reference numbers, Detached Positions and notes relating to each feature. The information from these plots was transferred to a final field plot where possible.

Verified DM features were retained and shown in black. Changes to the shoreline features were shown in red, and new features are depicted in black. Field cartographic codes were assigned using the HDAPS DP editor. Heights are recorded in meters and are corrected to predicted MLLW. Heights on the smooth sheet are shown in feet and corrected for actual tides.

*@ There are no shoreline changes on this survey.*

#### Changes and New Features

There were several changes and some new features found during shoreline verification. DM rocks were often identified as high points of ledges or reefs. *New revisions and features offshore of the mean high water line have been shown on the smooth sheet as warranted.*

#### Disprovals ✓

There was one DM feature that was investigated and disproved during the survey.

A DM rock at position 60/50/42.48 N, 148/20/00.32 W, was investigated by visual search (Position #6040, DN 238, VN 2125). The depth at the charted position was approximately 5 m, search time was 10 min, search radius was 100 m, and water visibility was 5 m. No evidence of the rock was found. The DM rock position was a shoal section of a gradually sloping sandy shoreline, requiring the DP to be offset approximately 40 m. The hydrographer recommends removing the feature from DM and chart area as depicted by hydrography. *CONCUR*

#### Charted Features ✓

Charted rock positions were verified as charted, or depicted as high points or extensions of DM ledges or reefs, with the following exceptions:

A charted rock at position 60/48/26 N, 148/20/10 W, was not found. The item was investigated (Position #3206, DN 239, VN 2124) by visual search. The depth at the charted position was approximately 6.5m, search time was 15 min, search radius was 30m, and water visibility was 10m. The hydrographer recommends deleting the rock symbol from the chart. *CONCUR*  
*There is a ledge on the smooth sheet, chart area as shown on smooth sheet.*

A charted rock at position 60/48/36 N, 148/20/03 W, was not found. The item was investigated (Position #3207, DN 239, VN 2124) by visual search. The depth at the charted position was approximately 7.5m, search time was 15 min, search radius was 30m, and water visibility was 10m. The hydrographer recommends deleting the rock symbol from the chart. *CONCUR*  
*This rock is likely part of the ledge which is shown on the smooth sheet. Chart area as shown on the smooth sheet.*

\* Filed with the survey records.

## Problems ✓

A portion of Pigot Bay west of 148/23/30 W, did not have photogrammetric coverage. This shoreline was defined using vessel 2129 and collecting DP's during high water on DN 277 and high water shoreline drawn in. Because the DP's extended west of the original survey limits, a small sheet was plotted to depict this shoreline. *This data was plotted on the smooth sheet as dashed red shoreline.*

A digital rock at 60/50/09 N, 148/18/20 W was not addressed during the survey. The rock did not appear on the mylar copy of the DM and was not searched for when shoreline verification was conducted. The hydrographer believes the rock was above the low water line and therefore, did not receive a detached position during shoreline. Recommend retaining the DM rock at the position on the DM. *cancel*

In addition, two charted rocks (at 60/50/36 N, 148/23/42 W) and (60/51/06 N, 148/21/24 W) were inadvertently not addressed during this survey. The hydrographer recommends retaining the rock symbols at the positions on the chart. *The rock comes from an unknown source? (see discussion below)*

## K. CROSSLINES ✓

Crosslines agree within 1-2 meters in deep water with mainscheme hydrography except in areas of complex bathymetry. Total mileage was 8.0 nautical miles or 8% of total mainscheme hydrography. *The rock comes from an unknown source. The compiler should investigate the source and if valid retain as charted. The rock charted at Lat 60/50/39N Long 148/23/45E plots 100 meters east of an extensive ledge on the present survey and is likely the same feature. Delete rock and chart ledge.*

## L. JUNCTIONS *see Evaluation Report, section L.*

This survey junctions with surveys H-10443 (1992, 1:20,000) at the northeast limit, H-10635 (1995, 1:10,000) at the eastern limit and, H-10650 (1995, 1:10,000) at the southwest limit. Soundings were found to be in general agreement. Final comparison will be made at the Pacific Hydrographic Branch (PHB).

## M. COMPARISON WITH PRIOR SURVEYS *see Evaluation Report, section M.*

Three prior surveys were compared: H-7187 (1947, 1:10,000), H-7618 (1947-1948, 1:20,000), and H-6981 (1948, 1:10,000). Soundings were found to be in general agreement. During preliminary comparisons with prior surveys, four soundings were found to be shallower than this survey.

USGS analyses of the aftermath of the 1964 Good Friday Earthquake indicate widespread *do not cancel* subsidence in the area covered by this survey. This could account for the shallower depths found in the prior surveys.

*NOTE: This hydrographer's comment is not substantiated. The Coast Pilot indicates that this area has been uplifted 4-32 feet throughout Prince William Sound.*

Prior survey H-7187 shows a 5.1 fm (9.4<sup>3</sup> m) sounding at 60/49/59<sup>✓</sup> N 148/18/16<sup>✓</sup> W; the least depth in the area from this survey was 6.7<sup>3</sup> fm (11.0<sup>3</sup> m). The area around the feature was developed with 10 meter line spacing. The hydrographer recommends charting this feature with soundings from this survey. *Do not CONCUR*

Prior survey H-7187 shows a 12.0<sup>✓</sup> fm (21.9<sup>✓</sup> m) sounding at 60/50/20<sup>✓</sup> N 148/21/50<sup>✓</sup> W; the least depth in the area from this survey was 13.1<sup>0</sup> fm (24.0<sup>0</sup> m). The area was developed using 25 meter line spacing. The hydrographer recommends charting this feature with soundings from this survey. *Do not CONCUR*

Prior survey H-7187 shows a 13.0<sup>✓</sup> fm (23.8<sup>✓</sup> m) sounding at 60/50/39<sup>✓</sup> N 148/22/45<sup>✓</sup> W; the least depth in the area from this survey was 13.8<sup>✓</sup> fm (25.2<sup>✓</sup> m). The area was developed using 25 meter line spacing. The hydrographer recommends charting this feature with soundings from this survey. *Do not CONCUR*

Prior survey H-6981 shows a 20.0<sup>✓</sup> fm (36.6<sup>✓</sup> m) sounding at 60/48/05<sup>✓</sup> N 148/22/22<sup>✓</sup> W; the least depth in the area from this survey was 22.5<sup>0</sup> fm (41.0<sup>0</sup> m). The area was developed using 50 meter line spacing. The hydrographer recommends charting this feature with soundings from this survey. *CONCUR*

Final comparisons will be done at the Pacific Hydrographic Branch (PHB).

## N. ITEM INVESTIGATIONS

There were five AWOIS items assigned to this survey.

**AWOIS Item #51962** *recommendation on next page 11.*  
**1. Area of Investigation**

*State:* Alaska  
*Locality:* Prince William Sound  
*Reported Latitude:* 60/51/19.40 N<sup>✓</sup>  
*Reported Longitude:* 148/22/01.50 W<sup>✓</sup>  
*Datum:* NAD 83  
*Depth:* N/A  
*Feature:* Aircraft wreckage

### 2. Description of Source Item

Photography (T-9132/70) from 1947-1948 shows aircraft wreckage at the above position.

### 3. Survey Requirements

Verify or disprove. The required techniques to be used were visual search, bottom drag, or salvage documentation.

### 4. Method of Investigation

DN 243: A visual search was done in a 50-meter radius with a search time of 10 minutes. Water depth was 0-2 meters, and the water visibility was 1-2 meters.

DN 285: A visual search was done in a 50-meter radius with a search time of 3 minutes. Water depth was 0-2 meters, and the water visibility was 1-2 meters.

### 5. Results of Investigation

*used on Awois #51963*

~~Date: DN 243  
Time (UTC): 1939  
Feature: Disproval  
Position Number: 3393 ✓  
Latitude: 60/51/15.62 N  
Longitude: 148/22/07.13 W~~

Date: DN 285  
Time (UTC): 2304<sup>15</sup>  
Feature: Disproval  
Position Number: 3845 ✓  
Latitude: 60/51/19.41 N ✓  
Longitude: 148/22/00.84 W

No evidence of the aircraft wreckage was found.

### 6. Comparison with Prior Surveys

The aircraft wreckage does not appear on prior surveys.

### 7. Comparison with the Chart and Charting Recommendations

*Aircraft Not*  
The wreck is charted on NOS chart 16705, 15th Edition, September 1, 1990 1:80,000 (NAD83).

This item did not warrant a Danger to Navigation.

## Recommendation (#51962)

The hydrographer recommends deleting the wreck symbol at charted location 60/51/20 N, 148/22/05 W. *DO NOT CONCERN. THE AIRCRAFT WRECK IS NOT CHARTED. CHART DIED AS SHOWN ON A SMOOTH SHEET. AWOIS 51963 IS A CHARTED WRECK.*

AWOIS Item #51963 ✓ *RECOMMENDATION ON NEXT PAGE.*

### 1. Area of Investigation

*State:* Alaska  
*Locality:* Prince William Sound  
*Reported Latitude:* 60/51/21.40 N ✓  
*Reported Longitude:* 148/22/03.00 W ✓  
*Datum:* NAD 83  
*Depth:* N/A  
*Feature:* Aircraft wreckage

### 2. Description of Source Item

Photography (T-9132/70) from 1947-1948 shows a visible wreck at the above position.

### 3. Survey Requirements

Verify or disprove. The required techniques to be used were visual search, bottom drag, or salvage documentation.

### 4. Method of Investigation

DN 243: A visual search was done in a 50-meter radius with a search time of 10 minutes. Water depth was 0-2 meters, and the water visibility was 1-2 meters.

DN 285: A visual search was done in a 50-meter radius with a search time of 2 minutes. Water depth was 0-2 meters, and the water visibility was 1-2 meters.

### 5. Results of Investigation

*Date:* DN 243  
*Time (UTC):* 193919  
*Feature:* Disproval  
*Position Number:* 3393  
*Latitude:* 60/51/15.62 N ✓  
*Longitude:* 148/22/07.13 W

*Date:* DN 285  
*Time (UTC):* 2306  
*Feature:* Disproval  
*Position Number:* 3846  
*Latitude:* 60/51/21.58 N  
*Longitude:* 148/22/02.83 W

No evidence of the wreck was found.

## 6. Comparison with Prior Surveys

The wreck does not appear on prior surveys.

## 7. Comparison with the Chart and Charting Recommendations

The wreck is charted on NOS chart 16705, 15th Edition, September 1, 1990 1:80,000 (NAD83).

This item did not warrant a Danger to Navigation.

### Recommendation (51963)

The hydrographer recommends deleting the wreck symbol at charted location 60/51/20<sup>1.40</sup> N, 148/22/05<sup>✓</sup> W. *CONCUR*

AWOIS Item #51964 ✓

*Recommendation on next page.*

### 1. Area of Investigation

*State:* Alaska  
*Locality:* Prince William Sound  
*Reported Latitude:* 60/50/40.00 N ✓  
*Reported Longitude:* 148/23/17.00 W ✓  
*Datum:* NAD 83  
*Depth:* N/A  
*Feature:* Mooring buoy

### 2. Description of Source Item

BP66039 (USC&GS, 1964) shows an unregistered mooring buoy at the above location.

### 3. Survey Requirements

Verify or disprove. The required techniques to be used were visual search or salvage documentation.

#### 4. Method of Investigation (#51964)

DN 243: A visual search was done in a 100-meter radius with a search time of 10 minutes. Water depth was 5 meters, and the water visibility was 5 meters.

DN 285: A visual search was done in a 100-meter radius with a search time of 1 minute. Water depth was 5 meters, and the water visibility was 5 meters.

#### 5. Results of Investigation

Date: DN 243  
Time (UTC): 195501  
Feature: Disproval  
Position Number: 3394  
Latitude: 60/50/39.72 N ✓  
Longitude: 148/23/15.90 W ✓

Date: DN 285  
Time (UTC): 224729  
Feature: Disproval  
Position Number: 3842  
Latitude: 60/50/39.81 N ✓  
Longitude: 148/23/17.59 W ✓

No evidence of the mooring buoy was found.

#### 6. Comparison with Prior Surveys

The mooring buoy does not appear on prior surveys.

#### 7. Comparison with the Chart and Charting Recommendations

The buoy is charted on NOS chart 16705, 15th Edition, September 1, 1990 1:80,000 (NAD83).

This item did not warrant a Danger to Navigation.

#### Recommendation (#51964)

The hydrographer recommends deleting the mooring buoy symbol at charted location 60/50/40 N, 148/23/17 W.

CONCUR



**AWOIS Item #51965**  
**1. Area of Investigation**

*recommendation on next page.*

*State:* Alaska  
*Locality:* Prince William Sound  
*Reported Latitude:* 60/50/33.40 N ✓  
*Reported Longitude:* 148/23/15.50 W ✓  
*Datum:* NAD 83  
*Depth:* N/A  
*Feature:* Mooring buoy

**2. Description of Source Item**

BP66039 (USC&GS, 1964) shows an unregistered mooring buoy at the above position.

**3. Survey Requirements**

Verify or disprove. The required techniques to be used were visual search or salvage documentation.

**4. Method of Investigation**

DN 243: A visual search was done in a 100-meter radius with a search time of 10 minutes. Water depth was 5 meters, and the water visibility was 5 meters.

DN 285: A visual search was done in a 100-meter radius with a search time of 1 minute. Water depth was 5 meters, and the water visibility was 5 meters.

**5. Results of Investigation**

*Date:* DN 243  
*Time (UTC):* ~~2000~~ 195921  
*Feature:* Disproval  
*Position Number:* 3395  
*Latitude:* 60/50/33.29 N ✓  
*Longitude:* 148/23/13.83 W

*Date:* DN 285  
*Time (UTC):* ~~2249~~ 224845  
*Feature:* Disproval  
*Position Number:* 38413  
*Latitude:* 60/50/33.37 N ✓  
*Longitude:* 148/23/16.85 W

No evidence of the mooring buoy was found.

## 6. Comparison with Prior Surveys

The mooring buoy does not appear on prior surveys.

## 7. Comparison with the Chart and Charting Recommendations

The buoy is charted on NOS chart 16705, 15th Edition, September 1, 1990 1:80,000 (NAD83).

This item did not warrant a Danger to Navigation.

### Recommendation (#51965)

The hydrographer recommends deleting the mooring buoy symbol at charted location 60/50/33<sup>30</sup> N, 148/23/15<sup>30</sup> W. *CONCUR*

### AWIOS Item #51966

#### 1. Area of Investigation *recommendation next page*

*State:* Alaska  
*Locality:* Prince William Sound  
*Reported Latitude:* 60/50/31.00 N ✓  
*Reported Longitude:* 148/23/41.50 W ✓  
*Datum:* NAD 83  
*Depth:* N/A  
*Feature:* Mooring buoy

#### 2. Description of Source Item

The item was reported in LNM 40/86 at the above location in 1986.

#### 3. Survey Requirements

Verify or disprove. The required techniques to be used were visual search or salvage documentation.

#### 4. Method of Investigation

DN 243: A visual search was done in a 100-meter radius with a search time of 10 minutes. Water depth was 5 meters, and the water visibility was 5 meters.

DN 285: A visual search was done in a 100-meter radius with a search time of 1 minute. Water depth was 5 meters, and the water visibility was 5 meters.

## 5. Results of Investigation

Date: DN 243  
Time (UTC): 2005~~03~~  
Feature: Disproval  
Position Number: 3396 ✓  
Latitude: 60/50/30.43 N ✓  
Longitude: 148/23/40.47 W ✓

Date: DN 285  
Time (UTC): ~~2252~~ 225159  
Feature: Disproval  
Position Number: 384~~7~~4  
Latitude: 60/50/31.02 N  
Longitude: 148/23/41.23 W

No evidence of the mooring buoy was found.

## 6. Comparison with Prior Surveys

The mooring buoy does not appear on prior surveys.

## 7. Comparison with the Chart and Charting Recommendations

The buoy is charted on NOS chart 16705, 15th Edition, September 1, 1990 1:80,000 (NAD83).

This item did not warrant a Danger to Navigation.

**Recommendation** (#51966)

The hydrographer recommends deleting the mooring buoy symbol at charted location 60/50/3~~0~~<sup>1.00</sup> N, 148/23/1~~6~~<sup>41.50</sup> W. *CONCUR*

## O. COMPARISON WITH THE CHART

This survey was compared to NOS chart 16705, 15th Edition, September 1, 1990 1:80,000, (NAD83). Charted soundings were found to be within one fathom with the following exception:

A charted 1 3/4 fm (3.2 m) shoal at 60/49/55 N 148/19/10 W was not found. The least depth in the area from this survey was 3 1/2 fm (6.5 m). The area was developed using 50 meter line spacing. ~~The charted position does not agree with the prior survey H-7187.~~ The hydrographer recommends retaining the 1 3/4 fm shoal in accordance with prior survey H-7187.

Non-sounding shoreline features are discussed in Section J, Shoreline. Final comparisons to be made at the Pacific Hydrographic Branch (PHB).

*@ This 1 3/4 sounding was brought forward from H-7187, onto survey H-10636*  
**Dangers to Navigation**

No dangers to navigation were submitted for this survey.

**P. ADEQUACY OF SURVEY** *SEE Evaluation Report, section P.*

Survey H-10636 is complete and adequate to supersede charted depths and features in their common areas. *Several shoal depths originating from prior surveys have been brought forward to the present survey.*

**Q. AIDS TO NAVIGATION** *See Eval Rpt, Section Q.*

One Aid to Navigation exists within the survey area, Point Pigot Light (LL 25875). This mark was positioned using static GPS positioning techniques. The position compares well to the position published in the light list. In addition, light characteristics and arc of visibility are as published in the light list. A summary is provided in Appendix VI. \*

**R. STATISTICS**

*@ Latitude: 60/48/02.928N  
Longitude: 148/21/25.483W*

NM Hydrography	102.5
Velocity Casts	4
Detached Positions	68
Selected Soundings	802
Bottom Samples	20
Tide Stations	2
NM <sup>2</sup> Hydrography	5.8

**S. MISCELLANEOUS**

Bottom samples were collected in accordance with Project Instructions.

Tidal current predictions for Wells Passage, north of Point Culross are available. The maximum average ebb and flood are 0.3 knots. The hydrographer did not notice any unusual tidal currents within the area surveyed.

*\* Filled with the survey records.*

No unusual magnetic variations were noted.

**T. RECOMMENDATIONS** *SEE Evaluation Report, section T.*


None

**U. REFERRAL TO REPORTS** ✓


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

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>	
Fall 1995 Horizontal Control Report for OPR-P125-RA.	November, 1995	N/CS34	✓
Fall 1995 Coast Pilot Report for OPR-P125-RA.	November, 1995	N/CS26	✓
Project related data for OPR-P125-RA.	Incremental	N/CS34	✓
Secchi Disk Observations for OPR-P125-RA	November, 1995	N/CS31	✓

Respectfully Submitted,

  
Eric J. Christensen  
Ensign, NOAA

Approved and Forwarded,

  
Dean R. Seidel  
Captain, NOAA  
Commanding Officer

CONTROL STATIONS as of 25 Oct 1995 ✓

No	Type	Latitude	Longitude	H	Cart	Freq	Vel	Code	MM/DD/YY	Station Name
100	F	060:14:18.000	146:38:48.000	0	250	0.0	0.0		08/22/95	CAPE HINCHINSBROOK(BEACON)
<del>101</del>	<del>F</del>	<del>061:03:24.000</del>	<del>146:41:48.000</del>	<del>0</del>	<del>250</del>	<del>0.0</del>	<del>0.0</del>		<del>08/22/95</del>	<del>POTATO PT(BEACON)</del>
102	F	060:48:12.825	148:23:12.976	19	250	0.0	0.0		08/22/95	CAB 1914 (GPS STATION)
<del>103</del>	<del>F</del>	<del>060:48:05.091</del>	<del>148:10:45.240</del>	<del>17</del>	<del>250</del>	<del>0.0</del>	<del>0.0</del>		<del>08/22/95</del>	<del>PORT 1914 (GPS STATION)</del>

NOAA FORM 76-40  
(8-74)

Replaces C&GS Form 567

TO BE CHARTED  
 TO BE REVISED  
 TO BE DELETED

REPORTING UNIT  
*(Field Party, Ship or Office)*

NOAA Ship RAINIER

STATE  
Alaska

LOCALITY  
Pigot Bay and Vicinity

DATE  
11/3/95

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

**NONFLOATING AIDS OR LANDMARKS FOR CHARTS**

**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)*

*The following objects*

OPR PROJECT NO.  
OPR-P125-RA

HAVE  HAVE NOT

JOB NUMBER

H-10636

DATUM

NAD83

*been inspected from seaward to determine their value as landmarks.*

**DESCRIPTION**

*(Record reason for deletion of landmark or aid to navigation.*

*Show triangulation station names, where applicable, in parentheses)*

CHARTING NAME  
L.L. NO.  
25875  
POINT PIGOT LIGHT  
(CAB)

**POSITION**

LATITUDE  
° ' " D.M. Meters  
60 48 2.928 90.63

LONGITUDE  
° ' " D.P. Meters  
148 21 25.483 385.43

**METHOD AND DATE OF LOCATION**

*(See instructions on reverse side)*

**FIELD**

**OFFICE**

F - 7 - L

**CHARTS  
AFFECTED**

16700  
16705

RESPONSIBLE PERSONNEL		ORIGINATOR	
TYPE OF ACTION	NAME		
OBJECTS INSPECTED FROM SEAWARD	CAPT D. R. Seidel	<input type="checkbox"/> PHOTO FIELD PARTY	
		<input checked="" type="checkbox"/> HYDROGRAPHIC PARTY	
		<input type="checkbox"/> GEODETIC PARTY	
		<input type="checkbox"/> OTHER	
POSITIONS DETERMINED AND/OR VERIFIED		FIELD ACTIVITY REPRESENTATIVE	
	CAPT D. R. Seidel	OFFICE ACTIVITY REPRESENTATIVE	
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW		<input type="checkbox"/> REVIEWER	
		<input type="checkbox"/> QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE	
<b>INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'</b> (Consult Photogrammetric Instructions No. 64)			
OFFICE		FIELD (Cont.)	
<b>1. OFFICE IDENTIFIED AND LOCATED OBJECTS</b> Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E (C) 6042 8 - 12 - 75		<b>B. Photogrammetric field positions** require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object.</b> EXAMPLE: P - 8 - V 8 - 12 - 75 74L (C) 2982	
<b>FIELD</b> <b>1. NEW POSITION DETERMINED OR VERIFIED</b> Enter the applicable data by symbols as follows: F - Field                   P - Photogrammetric L - Located               Vis - Visually V - Verified 1 - Triangulation           5 - Field identified   9 - DGPS 2 - Traverse               6 - Theodolite 3 - Intersection           7 - GPS 4 - Resection              8 - Sextant		<b>II. TRIANGULATION STATION RECOVERED</b> When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8 - 12 - 75	
<b>A. Field positions* require entry of method of location and date of field work.</b> EXAMPLE: F - 2 - 6 - L 8 - 12 - 75		<b>III. POSITION VERIFIED VISUALLY ON PHOTOGRAPH</b> Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8 - 12 - 75	
*FIELD POSITIONS are determined by field observations based		**PHOTOGRAMMETRIC FIELD POSITIONS are	

NOAA FORM 76-40 (8-74)

SUPERSEDES NOAA FORM 76-40 (2-71) WHICH IS OBSOLETE, AND EXISTING STOCK SHOULD BE DESTROYED UPON RECEIPT OF REVISION.

☆ U. S. GPO : 1975-O-565-080/1155



## Section Q: Descriptive Report Insert

Name of Aid: Point Pigot Light  
Light List #: LL25875

Method of Positioning      Static GPS:       DGPS:       Other: \_\_\_\_\_

### Positioning Information

	<u>Latitude (N)</u>	<u>Longitude (W)</u>
Charted Pos.	60/48/03 N	148/21/24 W
Survey Pos.	60/48/03 N	148/21/25 W ✓

	<u>Easting</u>	<u>Northing</u>
Charted Pos.	26448.7	52286
Survey Pos.	26418.4	52286.3

Difference between Charted and Surveyed Position:      Distance: 30 meters  
Bearing: 91 deg T

### Characteristics

Do characteristics match Light List?      Yes       No   
If no, what are the characteristics? \_\_\_\_\_

Does the aid adequately serve its apparent purpose?      Yes       No   
If no, why not? \_\_\_\_\_

New/Uncharted Aids      N/A      (if information is known or easily obtained)

Date Est:

Maintained By: USCG      Private?      Yes       No

Is aid seasonally maintained?      Yes       No

Frequency of Maintenance:      Annual

Apparent Purpose:      Aid to Navigation

Other Information:

APPROVAL SHEET

for

H-10636  
RA-10-15-95

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

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



Dean R. Seidel  
Captain, NOAA  
Commanding Officer



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
Office of Ocean and Earth Sciences  
Silver Spring, Maryland 20910

ORIGINAL

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE:** April 18, 1996

**HYDROGRAPHIC SECTION:** Pacific

**HYDROGRAPHIC PROJECT:** OPR-P125-RA

**HYDROGRAPHIC SHEET:** H-10636

**LOCALITY:** Pigot Bay and Vicinity, Prince William Sound, Alaska

**TIME PERIOD:** August 26 - October 17, 1995

**TIDE STATION USED:** 945-4721 Perry Island (South Bay), Ak.  
Lat. 60° 40.8'N Lon. 147° 55.5'W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** -1.42 ft.

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 10.9 ft.

**REMARKS:** RECOMMENDED ZONING

Times are direct, and apply a X1.02 range ratio to heights using Perry Island, Ak. (945-4721).

**Notes:** Times are tabulated in Greenwich Mean Time.

*William M. Helms*  
CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO. 16705, 16700 B ON PREVIOUS SURVEY NO. C ON U.S. QUADRANGLE MAPS D FROM LOCAL INFORMATION E ON LOCAL MAPS F P.O. GUIDE OR MAP G RAND McNALLY ATLAS H U.S. LIGHT LIST K										
	ALASKA (title)	X		X							
ENTRY COVE	X		X								2
PASSAGE CANAL	X		X								3
PIGOT BAY	X		X								4
PIGOT, POINT	X		X								5
PORT WELLS (bay)	X		X								6
PRINCE WILLIAM SOUND	X		X								7
(title)											8
SLOPE POINT	X		X								9
ZIEGLER COVE	X		X								10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved  
*Chris C. Long*  
 Chief Geographer  
 MAR 29 1996

NOAA FORM 77-27(H) (9-83)		U.S. DEPARTMENT OF COMMERCE		REGISTRY NUMBER		
<b>HYDROGRAPHIC SURVEY STATISTICS</b>				H-10636		
RECORDS ACCOMPANYING SURVEY: To be completed when survey is processed.						
RECORD DESCRIPTION		AMOUNT		RECORD DESCRIPTION		
SMOOTH SHEET		1		SMOOTH OVERLAYS: POS., ARC, EXCESS		
DESCRIPTIVE REPORT		1		FIELD SHEETS AND OTHER OVERLAYS		
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS	
ACCORDION FILES	2					
ENVELOPES						
VOLUMES						
CAHIERS						
BOXES						
SHORELINE DATA						
SHORELINE MAPS (List):		DM-10062				
PHOTOBATHYMETRIC MAPS (List):		NA				
NOTES TO THE HYDROGRAPHER (List):		NA				
SPECIAL REPORTS (List):		NA				
NAUTICAL CHARTS (List):		16705, 15th Ed., 9/1/90 scale 1:80,000 (NAP83)				
OFFICE PROCESSING ACTIVITIES <i>The following statistics will be submitted with the cartographer's report on the survey</i>						
PROCESSING ACTIVITY				AMOUNTS		
				VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET						
POSITIONS REVISED						
SOUNDINGS REVISED						
CONTROL STATIONS REVISED						
				TIME-HOURS		
				VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION						
VERIFICATION OF CONTROL						
VERIFICATION OF POSITIONS						
VERIFICATION OF SOUNDINGS						
VERIFICATION OF JUNCTIONS						
APPLICATION OF PHOTOBATHYMETRY						
SHORELINE APPLICATION/VERIFICATION						
COMPILATION OF SMOOTH SHEET				130		130
COMPARISON WITH PRIOR SURVEYS AND CHARTS						
EVALUATION OF SIDE SCAN SONAR RECORDS						
EVALUATION OF WIRE DRAGS AND SWEEPS						
EVALUATION REPORT					24	24
GEOGRAPHIC NAMES						
OTHER*						
*USE OTHER SIDE OF FORM FOR REMARKS				130	24	154
Pre-processing Examination by				Beginning Date	Ending Date	
Verification of Field Data by D. Doles, R. Mayor, J. Stringham				Time (Hours) 107	Ending Date 5/31/96	
Verification Check by B.A. Olmstead				Time (Hours) 8	Ending Date 7/31/96	
Evaluation and Analysis by G.E. Kay				Time (Hours) 24	Ending Date 6/27/96	
Inspection by B.A. Olmstead				Time (Hours) 8	Ending Date 7/31/96	

**EVALUATION REPORT  
H-10636**

**A. PROJECT**

Project information is discussed in the hydrographer's report.

**B. AREA SURVEYED**

H-106~~53~~<sup>36</sup> is a basic survey conducted in Pigot Bay, and the western portion of Port Wells, near Passage Canal in northwest Prince William Sound. The surveyed area is bounded by latitude 60/51/30N to the north and by latitude 60/47/48N to the south. The eastern limit is longitude 148/17/24W and the western limit is either the shoreline of Pigot Bay or longitude 148/23/00W. The shoreline is wooded and extends down to the rocky shore. The near shore area is characterized by extensive ledges and isolated reefs. The bottom is rocky and exceedingly broken that consists mainly of mud. Depths range from the zero curve to 228 fathoms.

**C. SURVEY VESSELS**

Survey vessel information is found in the hydrographer's report.

**D. AUTOMATED DATA ACQUISITION AND PROCESSING**

Survey data were processed using the same Hydrographic Data Acquisition/Processing System (HDAPS) software used by the hydrographer, the Hydrographic Processing System (HPS) and AutoCad, Version 12.0.

At the time of the survey certification the format for transmission of digital data had not been formally approved. In the interim, digital data for this survey exists in the standard HPS format which is a database format using the .dbf extension. In addition, the sounding plot was created with .dbf (extension) and enhanced using the AutoCad system, are filed both in the AutoCad drawing format, .dwg (extension); and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these files will be retained at PHB until data transfer protocols are developed and improved.

The drawing files necessarily contain information which is not part of the HPS data set such as geographic names text, line-type data, and minor symbolization. In addition, those soundings deleted from the drawing for clarity purposes, remain unrevised in the HPS digital files to preserve the integrity of the original hydrographic data set. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guideline No. 75.

The field sheet parameters have been revised to center the hydrographer on the office plot. The data is plotted using a Modified Transverse Mercator projection and are depicted on a single sheet.

#### **E. SONAR EQUIPMENT**

Side scan sonar was not used on survey H-10636.

#### **F. SOUNDING EQUIPMENT**

Sounding equipment is discussed in the hydrographer's report.

#### **G. CORRECTIONS TO SOUNDINGS**

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for actual tides, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with NOS specifications. Actual tide reductions are derived from the Perry Island (South Bay), Alaska gage, (945-4721).

#### **H. CONTROL STATIONS**

Control stations are discussed in the hydrographer's report and separates. A list of control stations used on survey H-10636 is attached to this report.

The positions of horizontal control stations used during hydrographic operations are published and field values based on NAD 83. The geographic positions of all survey data are based on NAD 83. The smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with the NGS program NADCON.

Data based on NAD 27 may be referenced to this survey by applying the following corrections:

Latitude: -2.142 seconds (-66.312 meters)  
Longitude: 7.502 seconds (113.370 meters)

The year of establishment of the control stations originates with the above mentioned horizontal control report and the hydrographer's signal list.

#### **I. HYDROGRAPHIC POSITION CONTROL**

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. Several positions exceeded the limits in terms of horizontal dilution of precision (HDOP). These positions are isolated and occur randomly throughout the survey area. A review of the data, however,, indicates that none of these fixes are used to position dangers to navigation. The features or soundings located by these fixes are consistent with the surrounding information. These fixes are considered acceptable. Additional information

concerning calibrations and system checks can be found in the hydrographer's report and in the separates related to Horizontal Position Control and Corrections to Position Data.

#### **J. SHORELINE**

The following registered shoreline map compiled on NAD 83 applies to this survey.

<u>Map Number</u>	<u>Photo Date</u>	<u>Scale</u>
DM-10062	June 1989	1:20,000

Shoreline from DM-10062 was supplied in a "Standard Digital Data Exchange Format". The digitized shoreline was merged with the survey file during office ACAD processing. Alongshore and offshore features shown on the shoreline manuscript were verified and or revised as warranted during survey operations. However, one rock at latitude 60/50/09N, longitude 148/18/20W, mentioned in the hydrographer's report, Section J (Shoreline, page 8) was not verified and is shown on the smooth sheet.

There was a lack of photogrammetric shoreline at the head of Pigot Bay. This deficiency has been addressed in Section J (Shoreline, page 8).

#### **K. CROSSLINES**

Crosslines are discussed in the hydrographer's report.

#### **L. JUNCTIONS**

Survey H-10636 junctions with the following surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10443	1994	1:10,000	Northeast
H-10635	1995	1:10,000	East
H-10650	1995	1:10,000	South and West

The junctions with surveys H-10635 and H-10650 are complete. There is good agreement between depths curves and soundings within the common areas. Survey H-10443 junctions to the northeast and is plotted in meters and decimeters. This survey was previously processed and forwarded for charting. A comparison was made using a copy. Soundings are in good agreement within the common area.



**M. COMPARISON WITH PRIOR SURVEYS**

Survey H-10636 was compared with the following prior surveys.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>
H-6981	(1948)	1:10,000
H-7187	(1947)	1:10,000
H-7618	(1947-48)	1:20,000

Survey H-6981 covers the southern portion of the present survey centered near Point Pigot and Entry Bay. Soundings from this prior survey compare well with the present survey. However, two shoaler soundings originating from the prior survey and not adequately investigated have been carried forward on to the present survey.

Survey H-7187 covers the entire area of the present survey. In depths deeper than 50-fathoms present survey soundings are between 2-3 fathoms shoaler. However, in depths less than 50-fathoms present survey soundings are deeper. This is evident along the shoreline west of longitude 148/20/00W. Here, the present survey soundings extend inshore farther producing deeps between 2-5 fathoms deeper along the shoreline. The head of the bay contains sand and mud flats that extend in farther inshore than the previous survey work. There are several soundings from this prior survey that were not adequately investigated and have been transferred onto the present survey:

Survey H-7618 covers the eastern limits of the present survey. Soundings are in agreement. A 42-fathom shoal was not located by the present survey and has been transferred onto the present survey, see below.

Differences with the prior surveys are attributed to more modern data acquisition systems and the 1964 Good Friday Earthquake.

<u>Depth Fathoms</u>	<u>Prior Survey</u>	<u>Latitude North</u>	<u>Longitude West</u>
<del>20.0</del>	<del>H-6981</del>	<del>60/48/05</del>	<del>148/22/27</del>
7.7	H-6981	60/48/07	148/22/00
13.0	H-7187	60/50/42	148/22/42
12.0	H-7187	60/50/21	148/21/49
1.8	H-7187	60/49/55	148/19/13
5.4	H-7187	60/50/01.5	148/18/12
42.0	H-7618	60/48/42.5	148/18/34

*See page 9 of hydrographer's report. Item is not charted.*

Except for prior survey least depths listed above the present survey is adequate to supersede the prior surveys within the area of common coverage.

## N. ITEM INVESTIGATIONS

There were five items for investigation assigned to survey H-10636. The items are numbered 51962, 51963, 51964, 51965 and 51966. These items are adequately described in the hydrographers report, section N.

## O. COMPARISON WITH CHART

Survey H-10636 was compared with the following chart.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
16705	15th	September 1, 1990	1:80,000	NAD 83

### a. Hydrography

Charted data originates from the previously discussed prior surveys and shoreline source documents and requires no further discussion.

Survey H-10636 is adequate to supersede the charted data within the common area.

### b. Dangers to Navigation

There are no dangers to navigation. No additional dangers to navigation were discovered during office processing.

## P. ADEQUACY OF SURVEY

Hydrography contained on survey H-10636 is adequate to:

- a. delineate the bottom configuration, determine least depths, and draw the required 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.

With the exception of the following, 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, April 1994 Edition.

Numerous prior survey shoal depths were not adequately investigated. The investigation warranted should be sufficient to either prove or disprove these shoals. However, an adequate investigation was not performed allowing these soundings to be questioned. The hydrographer should have developed a

pattern of reduced hydrographic sounding lines centered around these shoals. The hydrographer ran 50-meter or 25-meter line spacing development on these shoals. These investigations were neither adequate enough to disprove nor comprehensive enough to disprove the soundings itemized in section M of this report. A shoal investigation is required as listed in the following references; Hydrographic Manual sections 1.4.3. (Development of Shoals and other Hazards), and 4.5.9. (Shoals and Dangers) and the Field Procedures Manual section 7.2.3. (Least Depth Determination Using Echo Sounders).

#### **Q. AIDS TO NAVIGATION**

There is one aid to navigation located within the survey area. The fix aid is Point Pigot Light (Light List number 25875). There are no floating aids.

There are no features of landmark value located within the area of this survey.

#### **R. STATISTICS**

Statistics are itemized in the hydrographer's report.

#### **S. MISCELLANEOUS**

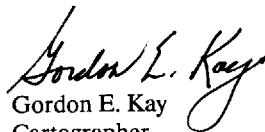
Miscellaneous items are discussed in the hydrograper's report. There were no additional miscellaneous items noted during office processing.

#### **T. RECOMMENDATIONS**

This is a good hydrographic survey. Additional work is recommended, on a low priority basis to resolve the least depths tabulated in section M of this report.

#### **U. REFERRAL TO REPORTS**

Referral to reports is discussed in the hydrographer's report.

  
Gordon E. Kay  
Cartographer

APPROVAL SHEET  
H-10636

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Bruce A. Olmstead Date: 8/7/96  
Bruce A. Olmstead  
Senior Cartographer, Cartographic Section  
Pacific Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Kathy Timmons Date: 8/7/96  
Kathy Timmons  
Commander, NOAA  
Chief, Pacific Hydrographic Branch

\*\*\*\*\*

Final Approval

Approved:

Andrew A. Armstrong III Date: Apr 4, 1997  
Andrew A. Armstrong III  
Captain, NOAA  
Chief, Hydrographic Surveys Division

MARINE CHART BRANCH  
**RECORD OF APPLICATION TO CHARTS**

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-10636

**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
16705	12/20/96	[Signature]	Full Part Before After Marine Center Approval Signed Via <i>Full application of</i>
			Drawing No. <i>swdgs. &amp; features from smooth sheet.</i>
			Full Part Before After Marine Center Approval Signed Via
			Drawing No.
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SUPERSEDES C&GS FORM 8052 WHICH MAY BE USED