

8900

Diag. Cht. No. 8551-3.

| | |
|---|----------------------|
| FORM C&GS-504 | |
| U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION COAST AND GEODETIC SURVEY | |
| DESCRIPTIVE REPORT | |
| Type of Survey | Hydrographic |
| Field No. | H0-20-1-66 |
| Office No. | H-8900 |
| LOCALITY | |
| State | Alaska |
| General locality | Prince William Sound |
| Locality | Port Valdez |
| 1966 | |
| CHIEF OF PARTY | |
| J. B. Watkins, Jr. | |
| LIBRARY & ARCHIVES | |
| DATE | April 25, 1968 |

HYDROGRAPHIC TITLE SHEET

II-8900

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.

HO-20-1-66

State ALASKA

General locality PRINCE WILLIAM SOUND

Locality PORT VALDEZ

Scale 1:20,000 Date of survey July 11, 1966 - August 5, 1966

Instructions dated 19 JANUARY 1966 Project No. OPR-452

Vessel USC&GSS HODGSON

Chief of party John B. Watkins, Jr., CDR, USESSA

Surveyed by J.B. Watkins, Jr., W.F. Forster II, G.M. Ensign and D.J. Lystrom

Soundings taken by echo sounder, hand lead, pole ECHO SOUNDER and HAND LEAD

Graphic record scaled by SHIP PERSONNEL

Graphic record checked by SHIP PERSONNEL

Protracted by GERBER DIGITAL PLOTTER Automated plot by PACIFIC MARINE CENTER

Soundings penciled by TO BE PLOTTED BY GERBER DIGITAL PLOTTER

Soundings in fathoms ~~feet~~ at ~~MLLW~~ MLLW ~~FATHOMS BELOW~~

REMARKS: SIGNAL OVERLAY AND POSITION OVERLAY VERIFIED BY SHIP PERSONNEL.

FINAL SMOOTH PLOT TO BE VERIFIED BY ^{ATLANTIC} PACIFIC MARINE CENTER PERSONNEL.

The original descriptive report was presumed lost and was replaced by this copy during review

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY

REGISTRY NUMBER: H-8900
FIELD NUMBER: HO-20-1-66

USC&GSS HODGSON

JOHN B. WATKINS, JR.
CHIEF OF PARTY

A. PROJECT

The survey comes under project number OPR-452, Prince William Sound, Alaska dated 19 January 1966. Amendment dated 14 March 1966 also applies.

B. AREA SURVEYED

The survey included all of Port Valdez and Valdez Narrows as far south as $61^{\circ} 03.85' N$. The geographic limits of the 1:20,000 Scale survey, including Shoup Bay, are $146^{\circ} 14.85' W$ to $146^{\circ} 41.6' W$ and $61^{\circ} 03.85' N$ to $61^{\circ} 03.35' N$. The eastern end of the bay is predominately a shallow mud flat area formed by several rivers and streams that flow into the bay. The rest of the area is characterized by very steep rocky bottom relief along the shoreline.

Control was established from the 13th to the 26th of June 1966. Hydrography was started on 11 July 1966 and completed on 5 August 1966.

A 1:5,000 Scale survey, ~~HO-5-1-66~~, within the limits of $146^{\circ} 15.4' W$ to $146^{\circ} 22.0' W$, $61^{\circ} 05.15' N$ to $61^{\circ} 06.4' N$ was made of the new port area. Two tagline surveys were conducted, one off the Alaska Steam Dock and one off the Standard Oil Dock.

This survey ^{covers} ~~duplicates~~ and extends ^{area of the} the reconnaissance surveys conducted by the SURVEYOR in 1964.

Prior surveys in the area are as follows:

| | |
|-----------------|-------------------|
| 2627 | 17 September 1902 |
| 2554 | 26 September 1901 |
| 2628 | 1902 |

C. SOUNDING VESSEL

The survey was conducted from three vessels; the USC&GSS HODGSON, designated by red upper case letters; Launch 1192, designated by violet lower case letters; and the Motor Whaleboat, designated by green lower case letters.

D. SOUNDING EQUIPMENT

Raytheon 723 echo sounding equipment was used on all of the vessels. ✓
The serial numbers are as follows:

| | |
|--------|-----|
| Ship | 554 |
| Launch | 534 |
| MWB | 146 |

The echo sounder corrections for the ship were determined from serial ✓
temperature, salinity and B.T. observations. The corrections for the
launch were determined from temperature-salinity observations plus bar
check information.

E. SMOOTH SHEET

The signal and position overlays were plotted on the Gerber Digital ✓
Plotter at Pacific Marine Center and verified by ship personnel. The
sounding overlay and final smooth sheet will be plotted and verified
by personnel at Pacific Marine Center. *and Atlantic Marine Center*

F. CONTROL

Visual control was used in all aspects of the survey. The visual control, ✓
excluding Shoup Bay, was either first order triangulation stations estab-
lished in the area prior to the survey or they were signals established
at the time of the survey by third order triangulation methods.

The control used in Shoup Bay was established by photographic identification ✓
on photographs number W2696 and W2697, 27 July 1954. These signals were
transferred from the photographs to manuscript number T-12655 and then to
the boat sheet.

G. SHORELINE

Boat sheet shoreline was transferred from incomplete manuscript number ✓
T-12655 and T-12656. Smooth sheet shoreline will come from advanced
manuscripts provided by the Washington Office.

Extremely steep relief along some of the beach made it impossible to ✓
get the low water line in many areas.

H. CROSSLINES

Eight to ten percent of the survey was run as crosslines. Crossings ✓
were good where the bottom was regular. Along the south shore of Port
Valdez and in the narrows the bottom was very irregular and relief
very steep. The crossings in these areas occasionally did not agree
very well.

I. JUNCTIONS

Junction is made with contemporary survey H-3899 (HO-5-1-66). This junction is adequate and complete. ✓

J. COMPARISON WITH PRIOR SURVEYS

Comparison of the survey with past surveys of the area is not very enlightening because of the age of the prior surveys. ✓

Presurvey review item number one, a sounding of 1 3/4 fathom at 61° 05.37' N, 146° 24.90' W, was not located. A rock that bares six feet at high water was located 1/10 mile east at 61° 05.38' N, 146° 24.68' W. Several fixes were taken at various positions around the rock and soundings taken. These fixes were recorded in ship's volumes 20-1-66 labelled "Bottom Samples and Presurvey Review Items". It is recommended that these fixes be used to locate the rock and shoal area. ✓

Presurvey review item number two, high water rock symbols charted at 61° 08.0' N, 146° 26.9' W and 61° 08.1' N, 146° 25.3' W, was verified. Many medium-sized rocks were scattered in the two areas. These rocks are on a very shallow beach. At high water the areas are foul but at low tide these rocks are 75 feet from the waterline; fixes were taken on several of the larger rocks. These are recorded in ship's volume HO-20-1-66, "Bottom Samples and Presurvey Review Items". It is recommended that the symbols be retained on the charts. ✓

Presurvey review item number three included four old pier locations. All that was left of the piers indicated were pilings. The north-eastermost pier has been completely destroyed and replaced with the new city dock. Fixes were taken on the prominent pilings. These are recorded in ship's volume HO-20-1-66 "Bottom Samples and Presurvey Review Items". It is recommended that these piers be shown as ruins. ✓

Presurvey review item number four, submerged sewer and pipeline ruins, were located as shown. It is recommended that the symbols remain on the chart. ✓

Presurvey review item number five involves the moving of the city dock at Valdez. The move has been made. Tagline surveys and a 1:2,500 Scale blowup of the new area were made. It was recommended that an insert of the new dock area be made. ✓

K. COMPARISON WITH THE CHART

A comparison of the survey with Chart 8519 (May 17, 1965), the largest scale chart of the area, indicates that the area has risen anywhere from three to nine feet. ✓

The reported depth of the small boat basin at the new town site given on the chart is correct. ✓

I. JUNCTIONS

Junction is made with contemporary survey H-8899 (HO-5-1-66). This junction is adequate and complete. ✓

J. COMPARISON WITH PRIOR SURVEYS

Comparison of the survey with past surveys of the area is not very enlightening because of the age of the prior surveys. ✓

Presurvey review item number one, a sounding of 1 3/4 fathom at 61° 05.37' N, 146° 24.90' W, was not located. A rock that bares six feet at high water was located 1/10 mile east at 61° 05.38' N, 146° 24.68' W. Several fixes were taken at various positions around the rock and soundings taken. These fixes were recorded in ship's volumes 20-1-66 labelled "Bottom Samples and Presurvey Review Items". It is recommended that these fixes be used to locate the rock and shoal area. ✓ *present depths adequate*

Presurvey review item number two, high water rock symbols charted at 61° 08.0' N, 146° 26.9' W and 61° 08.1' N, 146° 25.3' W, was verified. Many medium-sized rocks were scattered in the two areas. These rocks are on a very shallow beach. At high water the areas are foul but at low tide these rocks are 75 feet from the waterline; fixes were taken on several of the larger rocks. These are recorded in ship's volume HO-20-1-66, "Bottom Samples and Presurvey Review Items". It is recommended that the symbols be retained on the charts. ✓ *Chart in accordance with present survey information.*

Presurvey review item number three included four old pier locations. All that was left of the piers indicated were pilings. The north-eastermost pier has been completely destroyed and replaced with the new city dock. Fixes were taken on the prominent pilings. These are recorded in ship's volume HO-20-1-66 "Bottom Samples and Presurvey Review Items". It is recommended that these piers be shown as ruins. ✓

Presurvey review item number four, submerged sewer and pipeline ruins, were located as shown. It is recommended that the symbols remain on the chart. ✓

Presurvey review item number five involves the moving of the city dock at Valdez. The move has been made. Tagline surveys and a 1:2,500 Scale blowup of the new area were made. It was recommended that an insert of the new dock area be made. ✓

K. COMPARISON WITH THE CHART

A comparison of the survey with Chart 8519 (May 17, 1965), the largest scale chart of the area, indicates that the area has risen anywhere from three to nine feet. ✓

The reported depth of the small boat basin at the new town site given on the chart is correct. ✓ *Subsidence indicated in Report on Earthquake*

Two shoal areas were found in the vicinity of the new city dock area. One shoal, whose offshore point is 200 feet west and 60 feet south of the southwest corner of the Alaska Steam Dock, was reported to the Coast Guard. A least sounding of 2.8 fathoms was found at 61° 07' 27.5" N and 146° 21' 43.5" W. This area was developed by tagline and on the 1:2,500 blowup of the area. The entrance to the small boat basin is shoal. A line extended across the face of the Standard Oil Dock to the south crosses a 1.8 fathom shoal area.

L. ADEQUACY OF THE SURVEY

The survey is complete and adequate to supersede prior survey for charting.

M. AIDS TO NAVIGATION

A danger range has been established at the corner of the Alaska Steam Dock. It was established by the Coast Guard to keep ships off the shoal explained in paragraph "K". A fix on the ranges was taken and recorded in ship's hydro volume HO-5-1-66, Launch 1192, Volume V.

Two Alaska Ferries put into Valdez. One ties up at the Standard Oil Pier and the other uses the pier in the small boat basin.

N. MISCELLANEOUS

Heavy currents of undetermined variable set and drift were encountered during the work at the extreme east end of the bay. This is in the area where the Lowe and Robe Rivers enter the bay. Sizeable waves develop at the east end of the bay during the afternoons due to a west wind. These waves sometimes caused trouble when running hydro.

O. STATISTICS

The statistics for the survey are as follows:

| HO-20-1-66 | SHIP HODGSON | LAUNCH 1192 | MWB #1 |
|-----------------------------|-----------------|----------------|-----------|
| Positions | 470 | 915 | |
| Miles of Sounding Line | 143.8 | 89.3 | Not |
| Square Miles of Hydrography | 26.0 | 12.0 | |
| Bottom Samples | 25 | 3 | Used |
| Oceanographic Stations | 2 | | |

P. RECOMMENDATIONS

None.

Q. REFERENCES TO REPORTS

Corrections to Echo Soundings, 1966, Valdez Arm (to be forwarded).

References forwarded separately:

TITLE AND DATE FORWARDED

Coast Pilot, 1966: October, 1966

Valdez Arm Marigrams Tide Station Report and Level Records: June 14, 1966

Report on Shoal Investigation, Valdez Arm: June 18, 1966

Chart Letter, Valdez: July 26, 1966

Report on Shoreline Mapping, Valdez: July 26, 1966

Special Report: Field Identification of Photographs, Valdez: September 27, 1966

Tagline Surveys of Standard Oil Pier and New Valdez City Dock: January 9, 1967

Records forwarded with sheet:

Triangulation Data

Tidal Data

Sounding Volumes

Fathograms

Corrections to Echo Soundings, Valdez

Respectfully submitted,

Alexander Hogue, Jr.
ENS, USESSA

TIDE NOTE

PROJECT OPR-452

SHEET H-8900

HO-20-1-66

The standard tide gage at Valdez, Alaska was used for the reduction of soundings on all work on this sheet. The hourly heights were scaled by shipboard personnel prior to submission to the Washington Office by the Valdez tide observer.

MLLW on the 1966 Valdez staff was provided by the Washington Office and is equal to 9.0 feet.

Latitude: 61° 07' 29.5"
Longitude: 146° 21' 34.0"

TIDE NOTE FOR HYDROGRAPHIC SHEET

May 16, 1967

~~Nautical Chart Division~~ Pacific Marine Center

Plane of reference approved ~~in~~
~~volume of soundings for~~

HYDROGRAPHIC SHEET 8900

Locality: Valdez, Alaska

Chief of Party: J. B. Watkins, 1966

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681):

Valdez, Alaska

Height of Mean High Water above Plane of Reference is as follows:

10.9 feet

Remarks

J. M. Sumors

Chief, Tides and Currents Branch

APPROVAL SHEET

PROJECT OPR-452
SHEET H-8900

PORT VALDEZ
ALASKA

The field work on this survey was done under the direct supervision of the Commanding Officer. The boat sheet was given a daily examination to check adequacy and accuracy of the hydrography. The survey is considered complete and adequate and no additional field work is deemed necessary.

John B. Watkins, Jr.
CDR, USN

LIST OF SIGNALS

H-8900
HO-20-1-66

| <u>NAME</u> | <u>NUMBER</u> | <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>SOURCE</u> |
|-------------|---------------|-----------------|------------------|-------------------------------------|
| BIT | 001 | 61041243 N | 146390417 W | BITE, 1901 |
| BOW | 002 | 61070554 | 146371192 | ELBOW, 1965 |
| BRA | 003 | 61044479 | 146401643 | ZEBRA, 1947 |
| BUN | 005 | 61045364 | 146395464 | BUNCH, 1901 |
| BAG, | 006 | 61074027 | 146173882 | BAG, 1966 |
| DOL | 007 | 61064704 | 146160952 | DOL, 1966 |
| DON | 008 | 61081247 | 146353628 | T-12655 |
| EVE | 009 | 61045903 | 146342795 | Hydro, Vol I, p.68 |
| HEL | 010 | 61074155 | 146224360 | HELD, 1901 |
| HID | 011 | 61075724 | 146352084 | T-12655 |
| HUT | 012 | 61032462 | 146414039 | HUT 3, RM 1, 1965 |
| LAN | 013 | 61061260 | 146385347 | Hydro, Vol I, p.37 |
| LAS | 014 | 61072749 | 146344575 | T-12655 |
| PEL | 015 | 61050716 | 146362703 | PELLEN, 1947 |
| LIT | 016 | 61072360 | 146210624 | VALDEZ E. BREAK* WATER LT., 1966 |
| LOG | 017 | 61073792 | 146360207 | T-12655 |
| MAS | 019 | 61045102 | 146373062 | Hydro, Vol. I, p.68 |
| MAX | 020 | 61045050 | 146282315 | Hydro, Vol. I, p.3 |
| MET | 021 | 61075654 | 146340948 | T-12655 |
| MID | 022 | 61045385 | 146390332 | MIDDLE ROCK LT., 1947, 1965 |
| NAN | 023 | 61072729 | 146190258 | NAN, 1966 |

| | | | | |
|-----|-----|----------|-----------|---|
| NOB | 024 | 61081826 | 146345666 | T-12655 |
| NOR | 025 | 61072350 | 146164598 | VALDEZ NORTH BASE RM 1, 1901, 1941, 1965 |
| PIT | 027 | 61070112 | 146345130 | PIT, 1966 |
| POT | 028 | 61074891 | 146341590 | T-12655 |
| POW | 029 | 61050345 | 146181034 | POWER, 1941 RM 1 |
| QUE | 031 | 61083102 | 146345346 | T-12655 |
| RAN | 032 | 61072580 | 146301114 | RANGE 2, RM 2, 1964 |
| ROC | 034 | 61073349 | 146181109 | ROC, 1966 |
| RUH | 035 | 61080456 | 146255511 | Hydro, Vol. I, p. 3 |
| SAT | 036 | 61072782 | 146322672 | Hydro, Vol., I, p. 3 |
| SAW | 037 | 61052669 | 146242910 | SAW, 1901 |
| VIS | 039 | 61050198 | 146313996 | VISIT, 1947 |
| STA | 040 | 61064930 | 146155461 | VALDEZ BPR ASPHALT PLANT STACK, 1959, 1966 |
| TAN | 041 | 61071331 | 146150697 | VALDEZ WATER TANK, 1964 |
| TIC | 043 | 61062298 | 146152000 | TIC, 1966 |
| XMA | 044 | 61045490 | 146372252 | XMAS, 1947 |
| CON | 045 | 61034902 | 146393609 | ENTRANCE POINT BEACON, 1947 |

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. 8900

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

| RECORD DESCRIPTION | | AMOUNT | RECORD DESCRIPTION | | AMOUNT | |
|------------------------|---------------|----------------------|--------------------|------------|---------------|----------------------------|
| SMOOTH SHEET | | 1 | BOAT SHEETS | | 1 | |
| DESCRIPTIVE REPORT | | 1 | OVERLAYS | | | |
| DESCRIPTION | DEPTH RECORDS | HORIZ. CONT. RECORDS | PRINTOUTS | TAPE ROLLS | PUNCHED CARDS | ABSTRACTS/SOURCE DOCUMENTS |
| ENVELOPES | | | | | | |
| CAHIERS | 1 | | | | | 1 |
| VOLUMES | 6 | | | | | |
| BOXES | | | | | | |
| T-SHEET PRINTS (List) | | | | | | |
| SPECIAL REPORTS (List) | | | | | | |

OFFICE PROCESSING ACTIVITIES

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

| PROCESSING ACTIVITY | AMOUNTS | | | |
|--|------------------|--------------|-------------|--------|
| | PRE-VERIFICATION | VERIFICATION | REVIEW | TOTALS |
| POSITIONS ON SHEET | | | | 1385 |
| POSITIONS CHECKED | | | | |
| POSITIONS REVISED | | | | |
| DEPTH SOUNDINGS REVISED | | | | |
| DEPTH SOUNDINGS ERRONEOUSLY SPACED | | | | |
| SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED | | | | |
| | TIME (MANHOURS) | | | |
| TOPOGRAPHIC DETAILS | | | | |
| JUNCTIONS | | | | |
| VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS | | | | |
| SPECIAL ADJUSTMENTS | | | | |
| ALL OTHER WORK | | | | |
| TOTALS | | | 108.96 | |
| PRE-VERIFICATION BY | BEGINNING DATE | | ENDING DATE | |
| VERIFICATION BY | BEGINNING DATE | | ENDING DATE | |
| REVIEW BY | BEGINNING DATE | | ENDING DATE | |
| | | | 5-8-69 | |

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY
MARINE CHART DIVISION
HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8900

FIELD NO. HO-20-1-66

Alaska -- Prince William Sound -- Port Valdez

SURVEYED: July 11, 1966, through August 5, 1966

SCALE: 1:20,000

PROJECT NO.: OPR-452

SOUNDINGS: DE-723 Fathometer
Handlead

CONTROL: Sextant angles
on shore signals

| | |
|----------------------------|------------------------|
| Chief of Party..... | J. B. Watkins, Jr. |
| Surveyed by..... | J. B. Watkins, Jr. |
| | W. F. Foster II |
| | G. M. Ensign |
| | D. J. Lystrom |
| Protracted by..... | Gerber Digital Plotter |
| Soundings Plotted by..... | Gerber Digital Plotter |
| Verified and Inked by..... | W. W. Feazel (AMC) |
| Reviewed by..... | G. K. Myers |
| | Date: May 8, 1969 |
| Inspected by..... | R. H. Carstens |

1. Description of the Area

This survey covers Port Valdez and Valdez Narrows which is the northeastward limit of the main northern arm of Prince William Sound. The immediate vicinity of the old and new towns of Valdez is covered by H-8899 (1966), a 1:5,000 survey.

Valdez Narrows is about 8/10 mile wide, with deep water and steep shores. Middle Rock, a pinnacle, is located in the middle of the north end of the Narrows.

Port Valdez is a deep, narrow basin having sharp gradients along shore and the general characteristics of a glacial fiord. Most of the area is covered by depths greater than 125 fathoms. A few small bays indent the

shoreline and some creeks enter the bay. Shoaling at the mouth of these creeks has resulted from the deposition of sediments.

In the northwestern extremity of the survey, Shoup Bay is neatly closed by a sandspit. The greater portion of this small bay is characterized by a deep flat basin and steep slopes inshore.

Many rocks uncover close inshore. Gray mud is the predominant bottom characteristic offshore.

The Alaskan Earthquake of March 27, 1964, caused a subsidence of about $3\frac{1}{2}$ feet in this area according to the report, Vol. III, Prince William Sound, Alaska, Earthquake of 1964 and Aftershocks. The effect of the subsidence has been altered, however, particularly in the upper end of Port Valdez by the slumping of inshore sediments and their redistribution in deeper water.

2. Control and Shoreline

The origin of control is adequately covered in Part "F" of the Descriptive Report.

The shoreline originates with advanced photogrammetric manuscript surveys T-12655 (1964-66) and T-12656 (1964-66).

3. Hydrography

A. Depths at crossings are in good agreement.

B. Sections of the depth curves could not be adequately drawn in some western and southern portions of Port Valdez. Some inshore depth curves were not adequately delineated in areas of steep slopes where spacing of sounding lines which ran parallel to the shoreline for considerable distances was excessive. In the immediate vicinity of lat. $61^{\circ}04.85'$, long. $146^{\circ}40.00'$ the bottom configuration was not adequately delineated. Development was also sparse or lacking in several indentations along the southern shore.

The development of the bottom configuration and investigation of shoals and usual deeps as required by the Project Instructions are considered adequate except as noted above.

4. Condition of the Survey

The plotting, sounding records, and the Descriptive Report (copy) are adequate and conform to the requirements of the Hydrographic Manual, supplemented by the Instruction Manual for Automated Hydrographic Surveys except for the following:

- A. In a few cases, positions were not obtained at the time of change in course of the survey vessel, as required by Sections 5-16 and 5-54 respectively in the Hydrographic Manual. These errors were particularly noticed when sounding lines jogged left or right of the original course.
- B. Faulty entries of phase in the field records required rescanning of some fathograms by the reviewer.
- C. Descriptions of field investigation items as required by the Pre-Survey Review in some instances were misleading.
- D. Erroneous logging of raw data from the sounding volumes occurred and subsequently resulted in displaced portions of depth curves. These discrepancies were corrected during review.

5. Junctions

The junction with H-8899 (1966) on the northeast at Valdez will be discussed in the review of that survey. No contemporary survey junctions with the present survey on the southwest. However, present survey depths are in general harmony with charted depths in this area.

6. Comparison With Prior Surveys

| | | |
|--------|--------|----------|
| H-2554 | (1901) | 1:20,000 |
| H-2627 | (1902) | 1:20,000 |

The prior surveys cover the entire area of the present survey. In general, a comparison of present and prior depths indicate some change, particularly at the ends of Port Valdez and in Shoup Bay.

In the western portion of the survey, present depths are as much as 4 to 10 fathoms shoaler than prior depths, possibly because of the accumulation of sediments from melting glaciers and shifting of material as a result of the earthquake. Marked changes are noted in the shoreline at the east side of the entrance to Shoup Bay where a portion of the spit has slumped into deeper water.

Conversely in the eastern portion of the survey, present depths are as much as 10 to 15 fathoms deeper than prior depths. A portion of the alluvial flats near Valdez has disappeared into deep water. Deepening in the eastern portion is noted even in the deeper areas of depths over 100 fathoms. A contributing factor must have been bottom currents caused by the tsunami.

In the vicinity of the entrance to Port Valdez and in several inadequately sounded inshore areas, soundings from the prior surveys have been adjusted by the earthquake subsidence value of $3\frac{1}{2}$ feet and carried forward to supplement present depths.

With these additions the present survey is adequate to supersede the prior surveys in the common area.

7. Comparison With Chart 8519 (latest print date 03/11/68)

A. Hydrography

Most of the charted hydrography originates with the previously discussed surveys supplemented by prior information furnished by 1964 earthquake investigative surveys and partial application of depths from the boat sheet of the present survey.

The pier ruins charted in lat. $61^{\circ}05.28'$, long. $146^{\circ}17.98'$ and lat. $61^{\circ}05.2'$, long. $146^{\circ}21.0'$, from Bp-70279 were previously charted as piers from chart letters 257(1915) and 470(1912) respectively. These ruins were ^{not} disproved by the present survey and should be retained on the chart.

The $1\text{-}3/4$ fathom sounding charted in lat. $61^{\circ}05.37'$, long. $146^{\circ}24.90'$ from H-2554 (1901) is considered to be slightly displaced and is superseded by comparable depths on the present survey.

5.

The pier ruins charted in lat. $61^{\circ}07.3'$, long. $146^{\circ}33.7'$ as a pier first reported in CL-257 (1915) and revised in accordance with a recommendation in the present survey descriptive report are in a changeable area and are considered no longer to exist.

B. Aids to Navigation

The aids to navigation located on the present survey are in substantial agreement with the chart and adequately mark the features intended.

The present survey is adequate to supersede the charted hydrography within the common area.


8. Compliance With Instructions

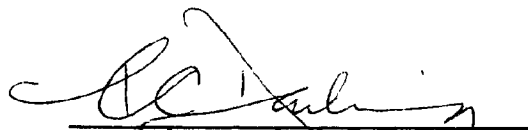
The present survey adequately complies with Project Instructions except that all numbered items from the pre-survey review were not adequately investigated.

9. Additional Field Work

This survey is considered to be a very good basic survey and no additional field work is recommended.

Examined and Approved:


Chief
Marine Chart Division


Associate Director
Office of Hydrography
and Oceanography

Reg. No. H-8900

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQ'D _____ INITIALS _____

REMARKS:

Soundings carried forward from H-2627 (1902) and H-2554 (1901) must be digitized at time of update to reflect the final results of H-8900.

3/17/70

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8900

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 |
|-------|----------|------------------|---|
| 8519 | 12-9-70 | E. Frey | Full Part Before After Verification Review Inspection Signed Via Drawing No. Revised soundings & depth curves. Revised shoreline ^{generally all over} generally all over (Shoup Bay & Vakkz Narrows) |
| 8551 | 3-29-71 | Charles J. Forba | Full Part Before After Verification Review Inspection Signed Via Drawing No. Revised soundings, curves, and shoreline thru 8519. |
| 16707 | 11/28/77 | Naitok | Full Part Before After Verification Review Inspection Signed Via Drawing No. 1 Appld |
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Camp Office

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Hydro Support Proj. 21423 (4) H-8900 T-12655



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