

4645

Form 504  
Ed. June, 1923  
DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY  
R. S. Patton, Dir.

U. S. COAST & GEODETIC SURVEY  
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FEB 25 1932

State: Alaska

Acc. No.

DESCRIPTIVE REPORT

Topographic  
Hydrographic

Sheet No.  
Field # D

4645

LOCALITY

Behm Canal

Walker Cove, Skirt Pt. to

Channel Is.

1931.

CHIEF OF PARTY

E. W. Eickelberg, F. L. Peacock

4645

DESCRIPTIVE REPORT  
TO ACCOMPANY TOPOGRAPHIC SHEET "D"

BEHM CANAL & WALKER COVE

S. E. ALASKA

INSTRUCTIONS:

The dates of the instructions covering the work done on this sheet are March 7th, 1930, and March 24th, 1931.

PURPOSE:

The purpose of this topographic survey was to locate and show the nature of the shore line, islands, rocks, reefs, high and low water lines. Also to locate the topographic signals for use in controlling the hydrography done in this part of Behm Canal and Walker Cove. Also to show by means of form lines, the nature of the topographic relief along the shore lines.

EXTENT:

This sheet includes all of Walker Cove and that part of Behm Canal from a point three miles north-west of the mouth of Walker Cove to a point about six miles south of it.

GENERAL DESCRIPTION:

The shores along this section of Behm Canal are mostly steep and rocky, rising abruptly from the shore line.

The mountains along the eastern shore line are higher than those along the western shore; however, the western shore is more irregular than the eastern shore. The shores are heavily timbered from the shore line to an elevation of 2,000 feet, where the timber begins to thin out.

The eastern shore is penetrated for a distance of about eight miles by Walker Cove, one of the most scenic and picturesque sections in Southeastern Alaska. This cove has an average width of only about a half a mile, but its average depth is over 100 fathoms. Its shore lines are very rocky, steep and precipitous, some sections of it being almost vertical for a height of several hundred feet, and continuing to rise very abruptly to heights of over 4,000 feet on each side of the cove.

These high mountains are composed principally of bare rock, with practically no timber on the precipitous slopes nor above the 2,000 foot contour. The highest mountain peaks in this section are snow capped throughout almost the entire year.

CONTROL:

The control of this section of Behm Canal was based on the second order triangulation scheme executed by Mr. J. M. Smook, Chief of Party, in 1929 throughout Behm Canal, which is based on the North American Datum.

The control in Walker Cove was based on the triangulation scheme executed by Mr. H. C. Warwick, composed of seventeen triangulation station and extending almost two thirds of the way up the cove, quite a difficult project, but accomplished without any mishaps, in spite of the precipitous shore line. This scheme was begun off the second order triangulation scheme of Mr. Smook.

SURVEY METHODS:

The usual plane table survey methods were used. The triangulation stations along the canal were occupied and three or more cuts taken to the topographic signals. Sometimes when the hydrographic party was close behind the topographic party, signals with only two cuts would be transferred to the boat sheet and used, being verified later by additional cuts. The shore line was rodded in from plane table set-ups at or near the topographic signals.

From triangulation station END on up to the head of the cove, a combination traverse and resection method was used. Triangulation station MOST was occupied with the plane table and azimuth cuts were taken to several flags set at suitable plane table set-ups on both shores above the wide bight. These were later occupied and the plane table positions determined by resection on other signals on the opposite shore, whose locations had been previously determined, thereby checking the traverse line.

DECLINATION:

The average variation of three observations in this vicinity as shown by the compass declinometer No. H-12 was about  $31^{\circ} 07'$ . Magnetic observations, with the compass declinometer were taken at triangulation stations CELL, LEDGE, and JEW 2.

FORM LINES:

The form line interval is 100 feet.

The elevations shown on the sheet are referred to the mean high water datum plane.

During much of the time that the topographic party was engaged on form line topography, so much fog and low lying clouds interfered with the work and obscured the tops of the high mountains that a thorough completion of the work required more valuable time than it justified. Consequently, the form lines shown on the west side of the canal were transferred from an enlargement pantographed from the bro-mide copy of the field sheet of Mr. Sargent, of the U. S. Geological Survey, which sheet was on a 1:80,000 scale, it being enlarged four times. Its form line interval was 200 feet. The form lines, where they didn't check with the elevations determined by the topographic party were shifted sufficiently until they did check. These form lines were given a reconnaissance check from a launch out in the canal, which seemed to check closely. Those form lines visible from the canal are shown in full lines.

Respectfully submitted,

*Chas. M. Thomas*  
Chas. M. Thomas,  
Hydro. & Geod. Engineer,  
U.S.C. & G.S.S. EXPLORER.

Approved and forwarded,

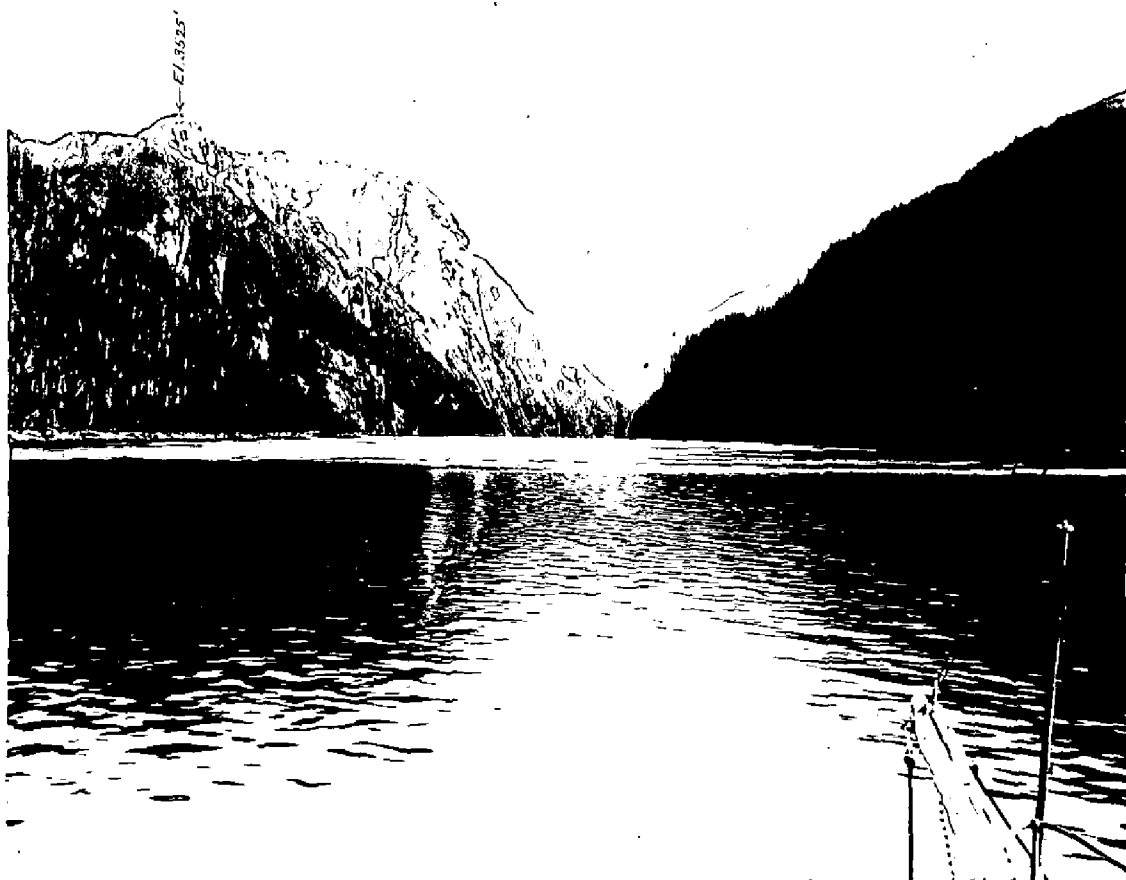
*G. C. Jones*  
G. C. Jones,  
Commanding Officer,  
U.S.C. & G.S.S. EXPLORER.

LIST OF STATISTICS

Number of Statute miles of high water line..... 44.6  
Number of Statute miles of low water line..... 3.0  
Number of elevations determined.....143

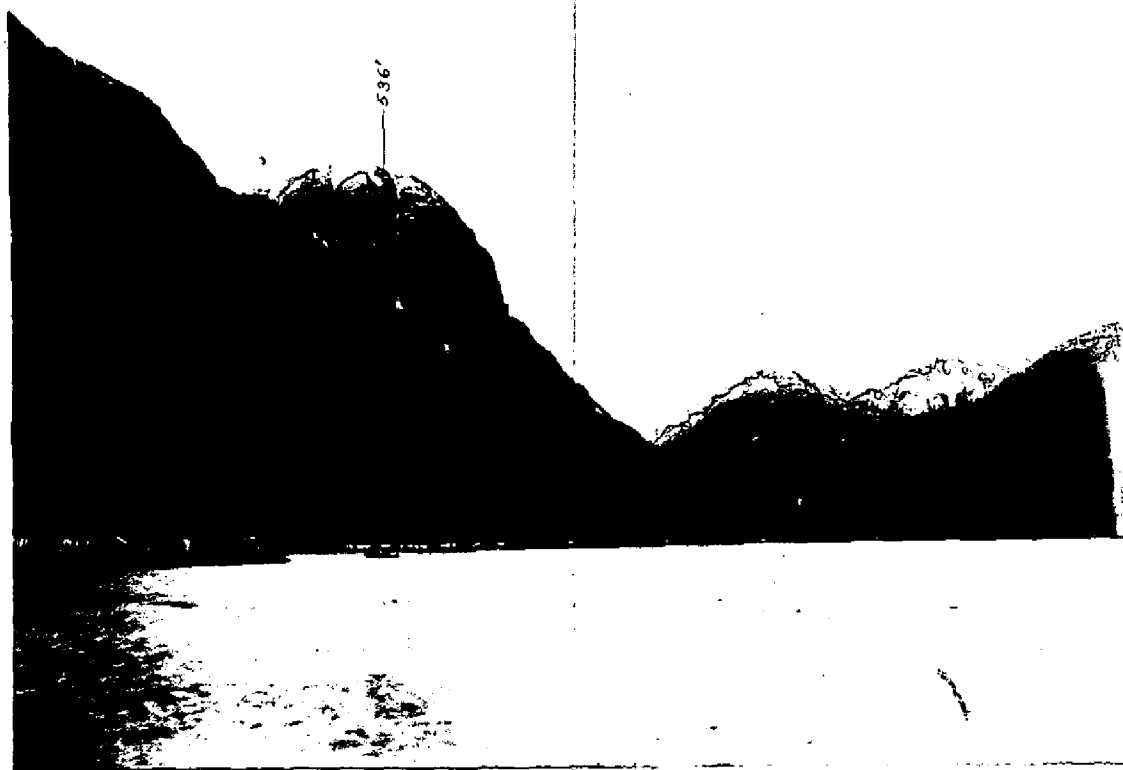
ACCOMPANYING PHOTOGRAPHS

| Picture<br>Number | Camera located in<br>Approximate |                  | Camera pointed<br>Approximately |
|-------------------|----------------------------------|------------------|---------------------------------|
|                   | LATITUDE                         | LONGITUDE        |                                 |
| 1.                | 55° 42' 1100 m.                  | 130° 53' 1000 m. | 67° true.                       |
| 2.                | 55° 42' 1730 m.                  | 130° 52' 850 m.  | 63° true.                       |
|                   | <u>At Δ BOT, 1931</u>            |                  |                                 |
| 3.                | 55° 42' 1195 m.                  | 130° 52' 580 m.  | 37° true.                       |
| 4.                | 55° 43' 750 m.                   | 130° 50' 650 m.  | 51° true.                       |
|                   | <u>At Δ FIN, 1931</u>            |                  |                                 |
| 5.                | 55° 43' 210 m.                   | 130° 47' 652 m.  | 305 $\frac{1}{2}$ ° true.       |
| 6.                | 55° 43' 1550 m.                  | 130° 45' 500 m.  | 130° true.                      |
| 7.                | 55° 45' 940 m.                   | 130° 42' 460 m.  | 160 $\frac{1}{4}$ ° true.       |
|                   |                                  |                  |                                 |



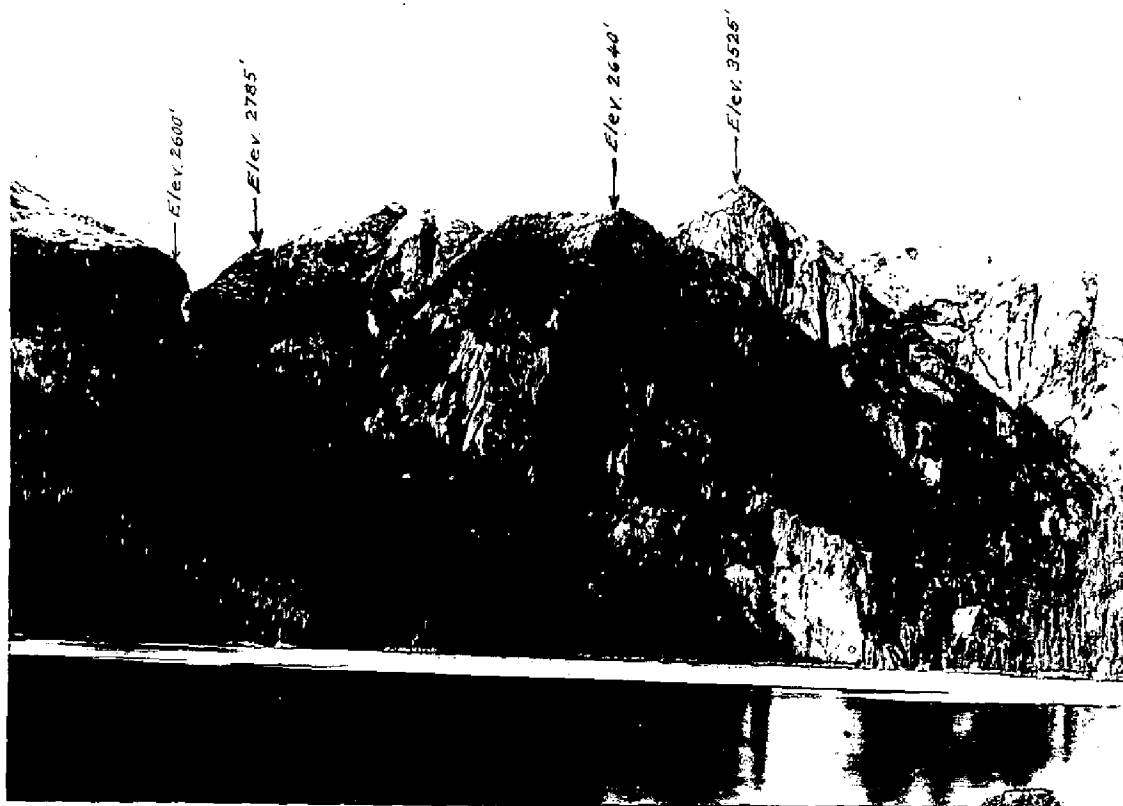
No. 1

Depth 33 fms 67°7



No. 2

Depth 22 fms 63°T

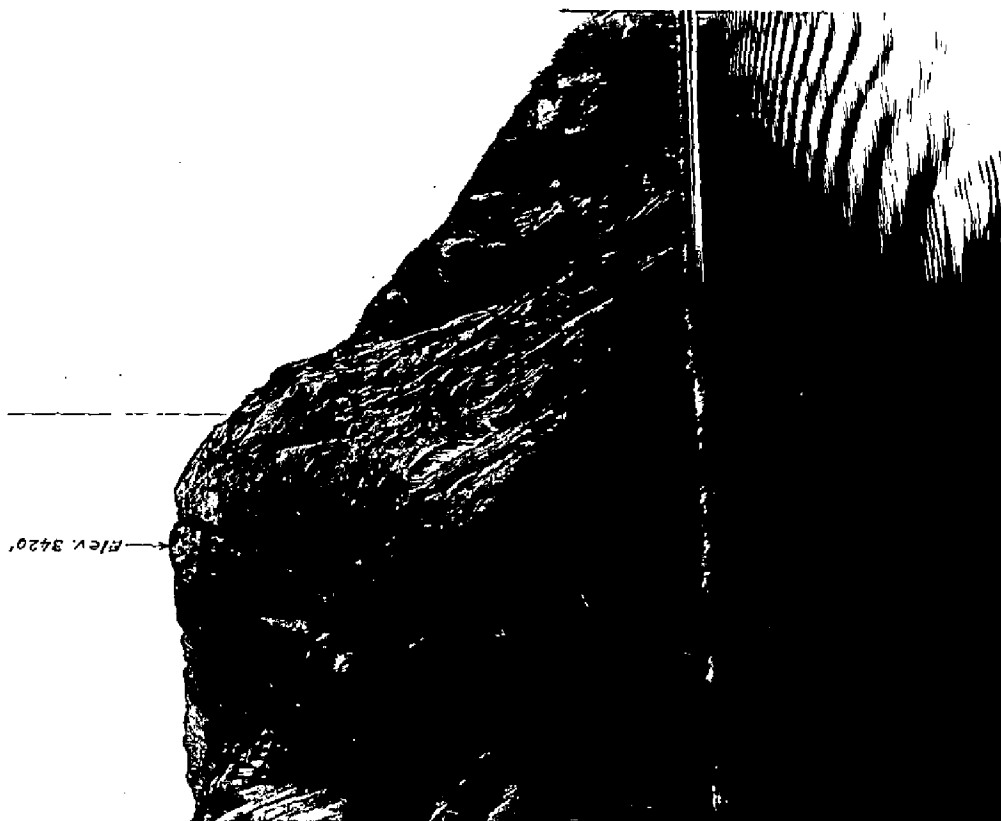


No. 3

57° T

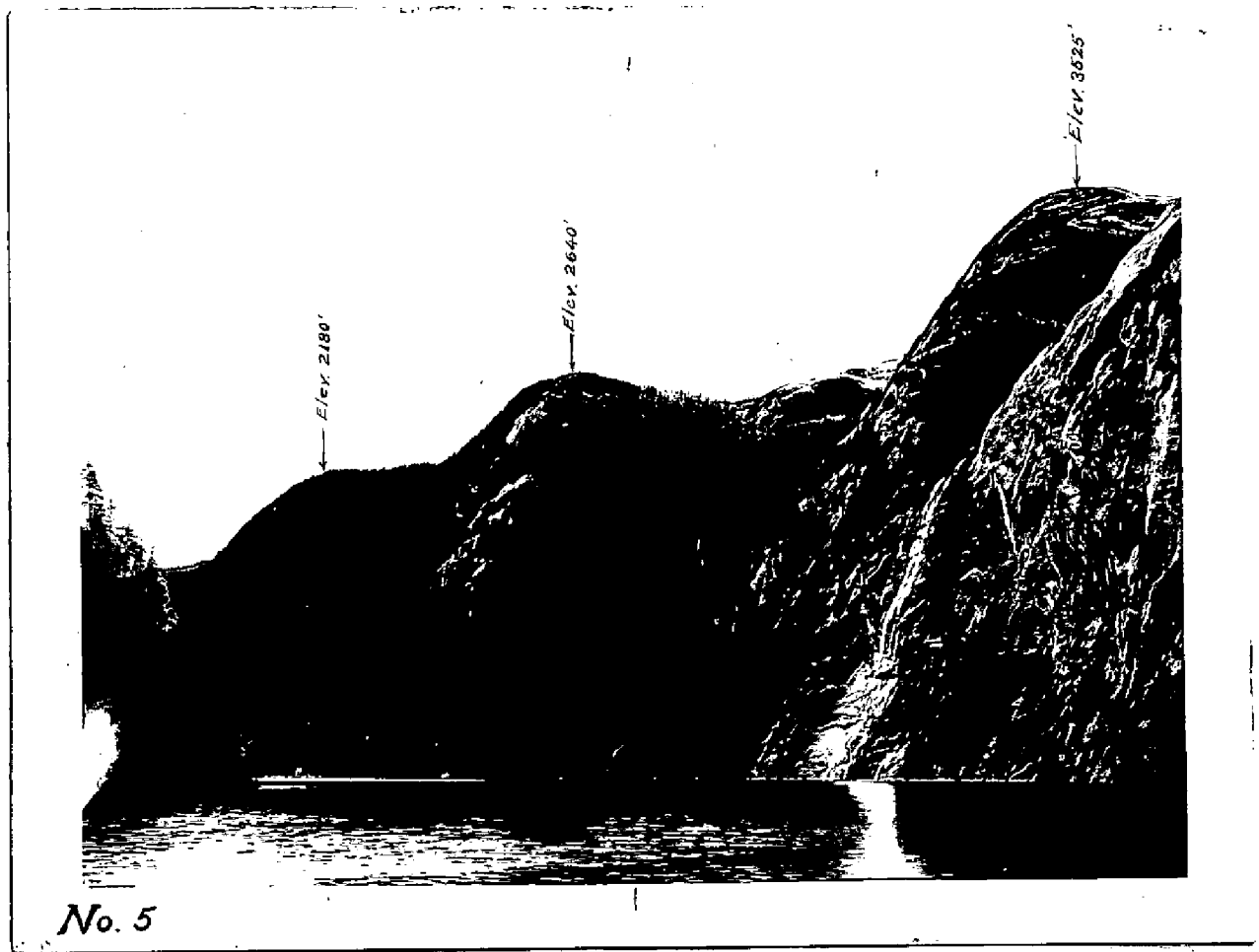
IAA 9799 Photo by Weidlich

51° T



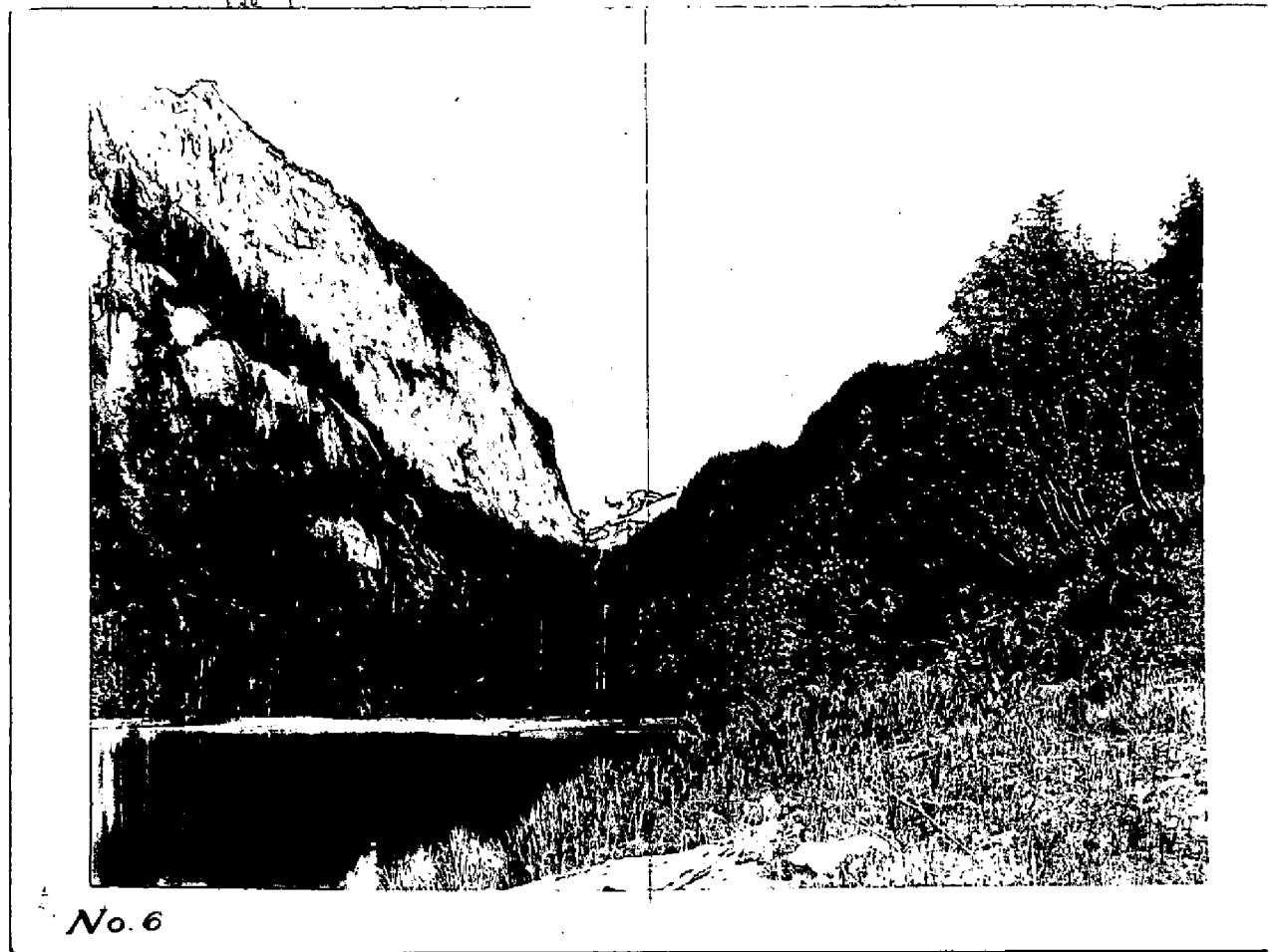
No. 4





305° T

130° T





No. 7

100° T

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4645

TOPOGRAPHIC TITLE SHEET

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

Field No. " D "

REGISTER NO. 4645

State ALASKA

General locality ~~SOUTHEASTERN ALASKA~~ BEHM CANAL

Locality ~~BEHM CANAL & WALKER COVE~~ SKIRI PT. ID. CHANNEL IS.

Scale 1:20,000 Date of survey July & August, 1931

Vessel U.S.C. & G.S.S. EXPLORER

Chief of Party E. W. Eickelberg & Fred. L. Peacock

Surveyed by Chas. M. Thomas

Inked by Chas. M. Thomas

Heights in feet above M.H.W. to ground ~~to tops of trees~~

~~Contours, Approximate contours~~ Form line interval 100 feet

Instructions dated March 7th, 1930 & March 24th, 1931

Remarks: Work was done from chartered launch

"Elsinore". Form lines from Launch No. 67.