

7088

Diag. Cht. No. 8202-3

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey TOPOGRAPHIC

LJ-A-52

Field No. {LJ-B-52} Office No. T-7088

LJ-C-52

LOCALITY

State SOUTHEAST ALASKA

General locality TAKU INLET

Locality TAKU GLACIER

194 52

CHIEF OF PARTY

R. A. Gilmore

LIBRARY & ARCHIVES

DATE DECEMBER 29, 1952

B-1870-1 (1)

8202-3

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. T-7088

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. LJ-A-52

REGISTER NO. T-7088

State SOUTHEAST ALASKA

General locality Taku Inlet
Vicinity of Juneau

Locality Taku Inlet Glacier

Scale 1:10,000 Date of survey June 10-19, 1952

Vessel LESTER JONES

Chief of party Ross A. Gilmore

Surveyed by Ross A. Gilmore and J. T. Jarman

Inked by Bruce E. Greene

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated Project CS-346, 20 March, 1952

Remarks: _____

GPO

*The shoreline shown on this ^{topographic} graphic control survey
has been incorporated in air-photographic survey
T-11097.*

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. LJ-B-52

REGISTER NO.

State SOUTHEAST ALASKA

General locality Vicinity of Juneau

Locality Taku Inlet

Scale 1:10,000 Date of survey June 10-12, 1952

Vessel LESTER JONES

Chief of party Ross A. Gilmore

Surveyed by Ross A. Gilmore

Inked by Bruce E. Greene

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated Project CS-346, 20 March, 1952

Remarks: _____

GPO

applied to T-11098 and T-11097

Magnetic declinations:

Δ OOZE, 1615, 6/11/52 is 30° 31' E
① Stow, 0900, 6/11/52 is 31° 55' E

incorporated in

This graphic control survey has been compared with and a contemporary hydrographic survey H-8032 (1952). No further review by the Hydrographic Surveys Section is necessary at the present time. The graphic control survey is marked for destruction.

I. M. Zeskind
4-15-56

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. LJ-C-52

REGISTER NO.

SOUTHEAST ALASKA

State _____

General locality Vicinity of Juneau

Locality Taku Inlet

Scale 1:10,000 Date of survey June 24-July 9, 1952

Vessel LESTER JONES

Chief of party Ross A. Gilmore

Surveyed by Ross A. Gilmore

Inked by Bruce E. Greene

Heights in feet above _____ to ground to tops of trees

Contour, Approximate contour, Form line interval _____ feet

Instructions dated Project CS-346, 20 March, 1952

Remarks: _____

G P O

Partially Applied to air-photographic survey T-11098 & T-11099

Magnetic declinations:

Δ FLAT, 1515, 7/9/52 = 29°36' E

Δ KEEP, 1450, 6/25/52 = 28°18' E

Δ PIPE, 1020, 6/25/52 = 30°51' E

and incorporated in

This graphic control survey has been compared with contemporary Hydrographic Surveys H-8032 and H-8033 of 1952. No further review by the Hydrographic Surveys Section is necessary at the present time. This graphic control survey is marked for destruction

L. M. Zeckind

4-15-54

DESCRIPTIVE REPORT TO ACCOMPANY
TOPOGRAPHIC SHEETS FIELD NO. LJ-A-52
LJ-B-52 and LJ-C-52
TAKU INLET, S.E. ALASKA
U.S.C. & G.S.S. LESTER JONES
Ross A. Gilmore, Chief of Party

AUTHORITY

These surveys were carried out in accordance with paragraph 11. of INSTRUCTIONS for Project CS-346, dated 20 March 1952.

PURPOSE

The purpose of these surveys was to locate signals for control of hydrography in the project area and to locate shoreline and any other alongshore details not clearly visible or present on the aerial photographs furnished for field inspection.

LOCALITY and LIMITS of SHEETS

The three sheets cover Taku Inlet on both shores from the line JAW POINT - ANNEX CREEK to the line triangulation station MARY 1937 - SWEDE POINT (see Progress Sketch for Project CS-346 attached to this report). Sheet LJ-A-52, the northernmost, takes in the inlet area from the mouth of Taku River to Latitude $52^{\circ} 24'$ N where it joins LJ-B-52. The latter extends from this junction, south, in the narrow part of the inlet, to Latitude $58^{\circ} 20'$ N at Flat Point, where it joins LJ-C-52. Sheet LJ-C-52 extends further south on a skew projection ending in the line JAW POINT - ANNEX CREEK and takes in the entire south shore of the inlet.

* In general, sheets LJ-A-52 and LJ-B-52 furnished signals for Hydrographic Sheet No. LJ-1152; and Sheet No. LJ-C-52 for Hydrographic Sheet No. LJ-1252.

↑ H-8032 (1952)
↑ H-8033 (1952)

CONTROL

Sufficient second and third-order triangulation stations were recovered, in addition to recovered marked topographic stations, to adequately control these surveys. No new triangulation was established. Forms 524 have been submitted with the field inspection data for the project for all 1937 recovered and 1952, recoverable topographic stations. Reference should be made to Field Inspection Report, Project CS-346. Forms 526, Recovery Note, Triangulation Station, have also been submitted with the above data.

* Graphic control surveys LJ-B and C-52 have been incorporated in air-photo surveys T-11097, T-11098 and T-11099 and are marked for destruction.

SURVEY METHODS and REMARKS

Standard graphic control methods were used throughout. No traverses were run. Intersections were good at all points. Short sections of shoreline were usually rodded in at planetable set-ups. These will be of use in checking or supplementing the shoreline maps to be compiled from aerial photographs. Field inspection of shoreline and alongshore features was done for the area of these three sheets (see Field Inspection Report, Project CS-346). Considerable extra work was necessary on Sheet LJ-A-52 because the photographs here were out of date with the current location of the face of the glacier which is advancing and pushing enormous amounts of sand and mud ahead of it. The face of the glacier has advanced about a mile since the survey of 1937. Sand and mud now extends out a considerable distance ahead of the northeast corner of the glacier. The basin formed between the glacier and the mouth of Taku River has shrunk to about 1/2 its size in 1937 and has shoaled over 100 feet of its former deepest depth.

There is attached to this report a sketch showing the progressive advance of Taku Glacier from 1929 through 1952. It should be noted that since 1948, the advance has slowed appreciably. Between 1948 and 1952, it appears that no appreciable forward movement of the advanced points of the terminus has occurred and that such forward movement that did occur was in the nature of a filling out process at the margins. Since practically no floating ice was encountered by the LESTER JONES during the 1952 season, it is believed that the glacier is grounded and that the enormous pressures being exerted are causing the startling changes in the depth of the basin and the closing in of the mud and silt ahead of the glacier with the north and east shoreline at the head of the inlet.

The source of Taku Glacier is the Juneau Ice Field which also feeds 5 or 6 other glaciers. It has been a perplexing scientific puzzle that Taku Glacier continues to advance while the other glaciers of the ice field recede.

Due to the unstable nature of the mud and sand in front of the glacier, some shoreline detail had to be obtained by sextant fixes, which were plotted directly on the topographic sheets. Also some of the MLLW line was determined this way in advance of hydrography as an aid to that work. On Sheet LJ-C-52, numerous rocks uncovered at MLLW just south of Flat Point were located by sextant fixes and plotted on the sheet.

Field work was done on these sheets as follows:

Sheet LJ-A-52 - - - June 10-12, 1952, by J. T. Jarman
T-7088 June 18-19, 1952, by Ross A. Gilmore

Sheet LJ-B-52 - - - June 10-12, 1952, by Ross A. Gilmore

Sheet LJ-C-52 - - - June 24-27, 1952, by Ross A. Gilmore
July 9, 1952 by Ross A. Gilmore

GEOGRAPHIC NAMES

This subject has been covered in the Field Inspection Report, Project CS-346.

LANDMARKS FOR CHARTS

This subject has also been covered in the above mentioned report and Form 567 submitted.

COAST PILOT

Coast Pilot information for this area has been submitted under separate cover in COAST PILOT REPORT, SOUTHEASTERN ALASKA, Ship LESTER JONES, SEASON 1952.

COMPARISON WITH PREVIOUS SURVEYS

No comparison with previous surveys was made as copies of such data were not furnished and only short sections of shoreline could be compared at any event. The scale of the existing chart (No.8235) is 1:40,000 and was not considered for comparison purposes. Considerable change will be noted at the head of the inlet but below approximate Latitude 58° 22' it is believed very few shoreline changes exist.



Ross A. Gilmore,
Commander, C&GS
Comdg., Ship LESTER JONES

SEASON'S PROGRESS SKETCH

COMBINED OPERATIONS

S. E. ALASKA, TAKU INLET

SCALE 1:40,000

PROJECT CS-346

DATES: MAY, JUNE, JULY 1952

USCGC SHIP LESTER JONES

ROSS A. GILMORE, CHIEF OF PARTY

LEGEND

CURRENT STATION
MAGNETIC STATION
TIDE GAGE

TRIANGULATION:

RECOVERED STATIONS
NEW STATIONS

TOPOGRAPHIC STATIONS:

RECOVERED
NEW

AIR PHOTO IDENTIFICATION

TRIANGULATION STATIONS
TOPOGRAPHIC STATIONS



TOPOGRAPHY:

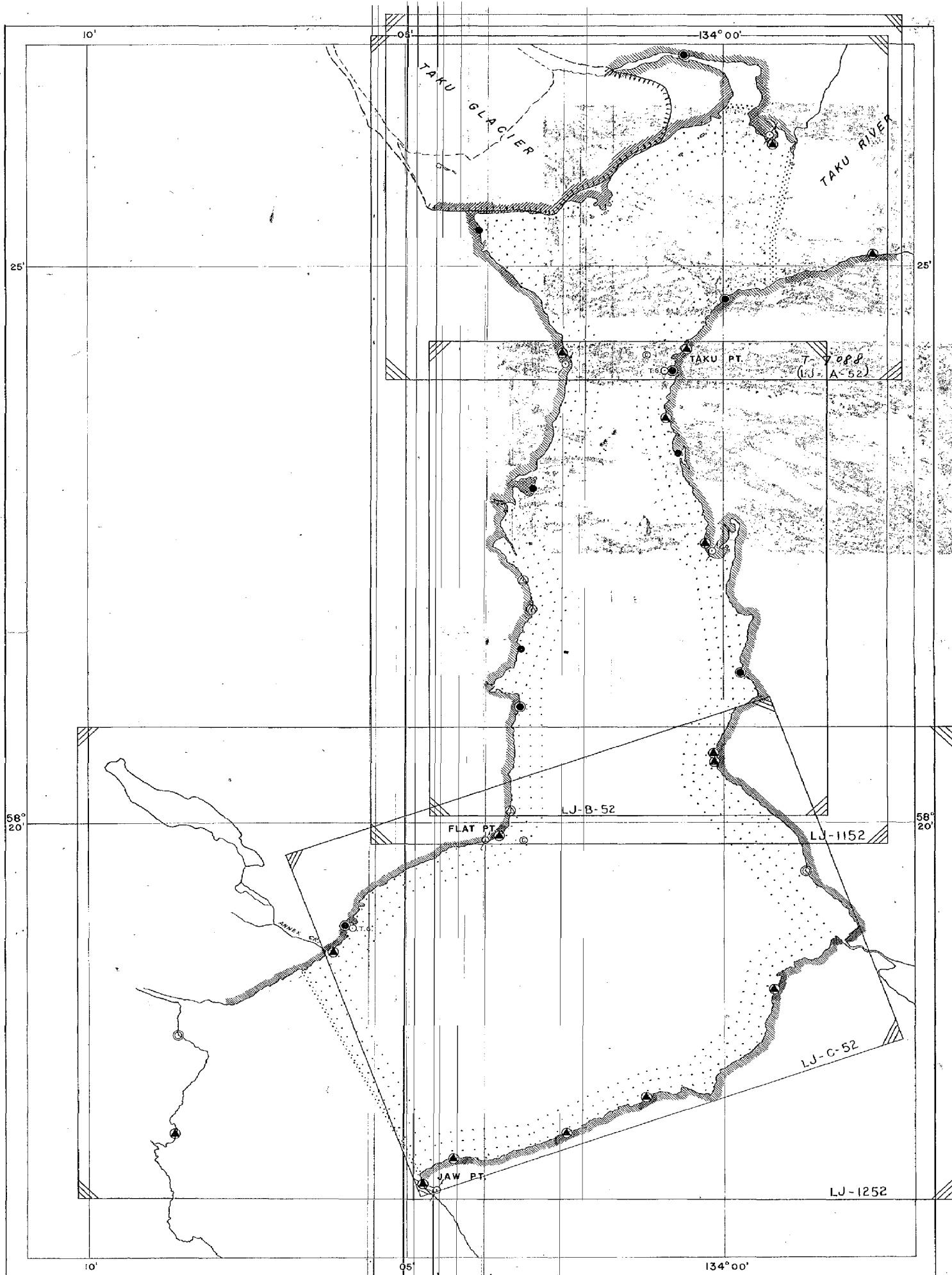
PLANETABLE
FIELD INSPECTION

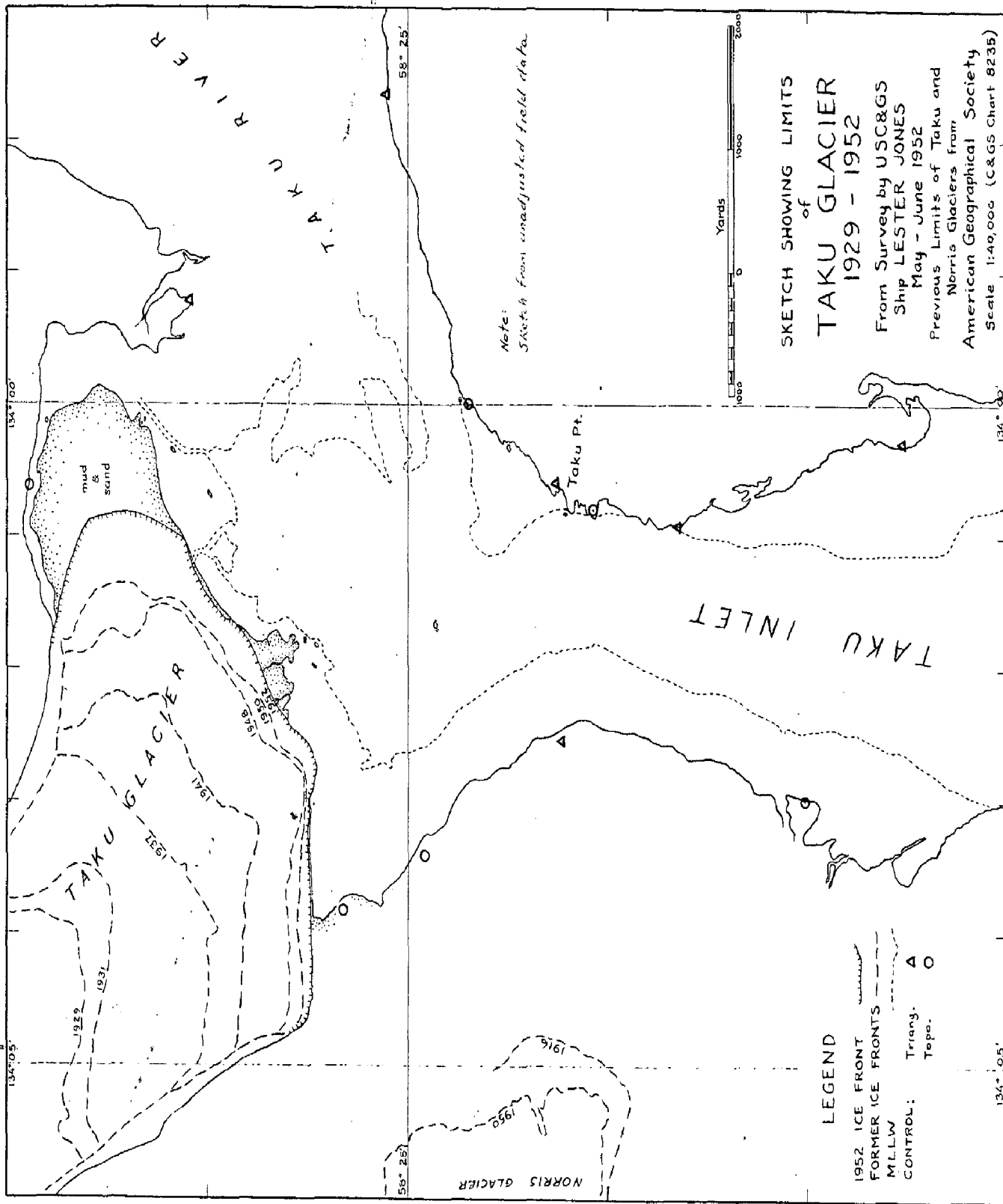


HYDROGRAPHY:

AREAS SURVEYED







NAUTICAL CHARTS BRANCH

SURVEY NO. T-7088

Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

GEOGRAPHIC NAMES

Survey No. T-7088

Name on Survey	<div>On Chart No.</div> <div>On previous survey No.</div> <div>On U. S. quadrangle Maps</div> <div>From local information</div> <div>On local Maps</div> <div>P. O. Guide or Map</div> <div>Rand McNally Atlas</div> <div>U. S. Light List</div>
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14.

7088

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

224
JAN 5-1953

POST-OFFICE ADDRESS: 705 Federal Office Bldg., Seattle 4, Washington

70 TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

30 December 1952

To: The Director
U.S. Coast & Geodetic Survey
Washington, D.C.

Subject: Photographs, Taku Inlet

There are enclosed several photographs taken on 3 July 1952, by officers of the Bureau of Public Roads, Juneau, Alaska, while they were being extended the facilities of the Ship LESTER JONES in Taku Inlet, Alaska.

It is requested that these photographs be attached to the DESCRIPTIVE REPORT for the topographic sheets for Project CS-346, Taku Inlet.

The negatives to the above photographs are in the possession of Mr. H. A. Stoddart, Division Engineer, Bureau of Public Roads, Juneau, Alaska.

Ross A. Gilmore
Ross A. Gilmore,
Commander, C&GS

705 Federal Office Bldg., Seattle 4, Washington

30 December 1952

Mr. William G. Field, Jr.
American Geographical Society
New York, N.Y.

Dear Sir:

I have been delaying writing you regarding our activities in Taku Inlet this past season until I received copies of enclosed photographs. These photographs were taken on 3 July 1952 by officers of the Bureau of Public Roads in cooperation with our field work. I have sent you the ones from those forwarded to me which I thought would be the most interesting and informative. You will note that there are several photographs of Hole-in-the-Wall Glacier and Twin Glaciers which I thought you would like.

I am also enclosing a sketch showing the various known positions of Taku Glacier. This is a relatively rough sketch devised under field conditions and should not be used except for the purpose intended, simply to show the relative position of the face of the glacier at the dates shown. The 1937 position was taken from Chart 8235 and the 1952 position was reduced from the topographic survey made this past season. All of the other positions are from the sketch that you sent to me on 20 June 1952.

Using your 1948 position of the face of Taku Glacier, it should be noted that the advance has slowed appreciably. Between 1948 and 1952, it appears that no appreciable forward movement of the advanced points of the terminus has occurred and that such forward movement that did occur was in the nature of a filling out process at the margins. Since practically no floating ice was encountered by the Ship LESTER JONES during the 1952 season, it is believed that the glacier is grounded and that the enormous pressures being exerted are causing the startling changes in the depth of the basin and the closing in of the mud and silt

ahead of the glacier with the north and east shoreline at the head of the inlet. Sand and mud now extends out a considerable distance ahead of the northeast corner of the glacier and the basin between the glacier and the mouth of Taku River has shrunk to about 1/2 its size in 1937 and has shoaled over 100 feet of its former deepest depth.

The topographic field data for the work in Taku Inlet has been forwarded to the Washington Office and any further information can be obtained from that source. Also, if desired, more accurate and larger scale positions of the glacier can be obtained from the original field surveys made in 1937 and 1952.

Sincerely,

Ross A. Gilmore,
Commander, C&GS

C. C. Dir., Wash. D. C.

DIVISION OF CHARTS
REVIEW SECTION - NAUTICAL CHART BRANCH
REVIEW OF TOPOGRAPHIC SURVEY

REGISTRY NO. T-7088

FIELD NO. LJ-A-52

Southeast Alaska, Taku Inlet, Taku Glacier

Instructions dated - 20 March 1952

Surveyed - June 1952

Scale 1:10,000

Topographic Survey

Aluminum Mounted

Chief of Party - R. A. Gilmore
Surveyed by - R. A. Gilmore, J. T. Jarman
Inked by - B. E. Greene
Reviewed by - I. M. Zeskind 5-4-54
Inspected by - R. H. Carstens

1. This topographic survey provides the signal control for H-8032 (1932) north of lat. $58^{\circ}24'$. It also shows the terminus of Taku Glacier and sections of shoreline on the east side of Taku Inlet. The shoreline shown on this topographic survey has been incorporated in air-photographic survey T-11097 which has been applied to H-8032.
2. A comparison between the present survey and H-8032 reveals no discrepancies in shoreline or low-water detail.
3. The shoreline shown on the present survey has been applied to Chart 8235 (latest print date 11-9-53), except in several places where the differences in shoreline were minor.
4. The present survey shows magnetic variations of $24^{\circ}29'$ E, at Δ OOZE in lat. $58^{\circ}24.23'$, long. $134^{\circ}02.55'$, and $31^{\circ}02'$ E, at Δ MARY in lat. $58^{\circ}25.63'$, long. $133^{\circ}57.60'$. The charted value of the magnetic variation is $31^{\circ}00'$ E, in 1951. The value of the magnetic variation at Δ OOZE is probably faulty on this survey inasmuch as a value here of $30^{\circ}31'$ E, closely checking the values at other stations in this area was determined on the adjacent graphic control sheet. (Values listed on the title sheet attached to Descriptive Report.)

I. M. Zeskind
5-4-54

Inspected by: R. H. Carstens