

4948

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Diag. Cht. No. 8502-2 & 8556-1

4948

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

State: S.W. Alaska

DESCRIPTIVE REPORT

Topographic } Sheet No. i4 4948
Hydrographic }

LOCALITY

Kodiak Island

Entrance to Uyak Bay

19 29

CHIEF OF PARTY

R. R. Lukens, H and G Eng

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET # 14

Entrance to Uyak Bay

Scale 1:40,000

Str. SURVEYOR

R.R.Lukens, Com'dg.

AUTHORITY.: The work executed on this sheet was done in accordance with instructions dated March 14, 1929.

LIMITS: The work comprises offshore hydrography south from a point one mile off Cape Kuliuk to the entrance of Spiridon Bay, to the entrance of Zachar Bay, to the entrance of Uyak Bay, and west to point ^{2 mi.} northwest of Rocky Point; and connecting with all inshore hydrography in this area.

CONTROL: The control consisted mostly of triangulation stations located in 1908 and 1929. Three signals however were used which were located by plane table traverse between triangulation stations which checked with no appreciable error.

TIDE GAUGE: Tide reducers were obtained from the standard gauge located at Uyak with no adjustment.

SURVEY METHODS: All the sounding was done by the ship. The fathometer was used throughout the work, the red light method being employed. Vertical casts were made for the purpose of checking the fathometer and obtaining bottom specimens. The vertical casts were taken by means of an electric sounding machine, located on the bridge, using a 35 pound lead weight.

DANGERS: The entrance to Uyak Bay was found to be free of dangers.

FATHOMETER REDUCTIONS: Fathometer soundings were reduced for temperature and salinity in accordance with the method outlined in the hydrographic manual. Three sets of serial temperatures were taken during the season. The temperatures taken on July 26 were used for the corrections as these were taken just about the middle of the season and found to be nearly an average of the three sets. The corrected fathometer soundings were entered in the sounding records. For each days work a curve was plotted to determine the correction to be applied to the corrected fathometer sounding to make them agree with the vertical casts taken. These corrections were called the index corrections and applied to every fathometer sounding.

SLOPE CORRECTIONS: No slope corrections have been made. There were no long uniform slopes in this area and it was not considered necessary to make these corrections over up and down bottom or where the slopes are steep, & short.

Approved:


R.R. Lukens
Com'dg Str. Surveyor

Respectively submitted


P.L. Bernstein
Jr. H and G Eng.

Hydrographic Sheet No. 14.

Note by Chief of Party:

Velocity and index corrections were entered in fathoms and tenths. Tide reducers were entered to the nearest half fathoms as,

0 to 1.7 feet	=	0.0	fathoms
1.8 to 4.7 "	=	0.5	"
4.8 to 7.7 "	=	1.0	"
7.8 to 10.7 "	=	1.5	"

Throughout the season, the index correction was high in depths from 15 to 30 fathoms, the fathometer reading from 1 to 3 fathoms less than the wire. In deeper water the fathometer usually agreed closely with the wire measurement. This difference did not seem to be constant from day to day so a separate curve was drawn for each days work.

In several cases doubtful fathometer soundings were recorded. In each case these soundings were investigated by vertical casts and the erroneous soundings were rejected.

In general the soundings seem to cross well, and where examined they agree closely at the junction with the other sheets.

R.R. Lukens.
R.R. Lukens.

LIST OF STATIONS

NAME	HOW LOCATED	
Aux	Triangulation,	1908
Bank	"	1929
Bear Island	"	1908
Ben	Topo. Sheet H	
Bird Rock	Triangulation	1908
Buttress	"	1929
Cape Ugat	"	1908
Cape Uyak	"	1908
Cleft	"	1908
East	"	1929
Fox	"	1929
Green	"	1929
Harvester	"	1908
High	"	1929
Ile	Topo. Sheet H	
Kuliuk	Triangulation	1908
Last	"	1908
Mound	"	1908
Pat	H	1908
Point	"	1929
Red	"	1929
Rocky Point	"	1908
Rus	Topo. Sheet H	
Stan	Triangulation	1908
Square	"	1929
Top	"	1929
West	"	1929

LIST OF STATISTICS

Sheet # 14

Entrance to Uyak Bay

Date	Vol.	Day	Positions	Soundings	Miles
July 13	1	A	50	281	42.3
Aug. 10	1	B	21	75	11.5
Aug. 12	1	C	124	457	83
Aug. 14	1	D	88	319	47
Aug. 15	1	E	82	314	44
Aug. 16	1, 2	F	78	243	36
Aug. 24	2	G	7	27	4
Sept. 4	2	H	11	28	1.8
Totals			<u>461</u>	<u>1744</u>	<u>269.6</u>

C. & G. S. Y
JAN 16 1930
A

Velocity + Index Corrections
Fathometer Soundings

Sheet # 14
1929

Str. Surveyor

R. R. Lukey
Chief of party

SERIAL TEMPERATURES

Shelikof Strait S.W. Alaska

1929

STR. SURVEYOR

R. R. Luken, Comdg.

JUNE 7

JULY 26
Density 1.0230

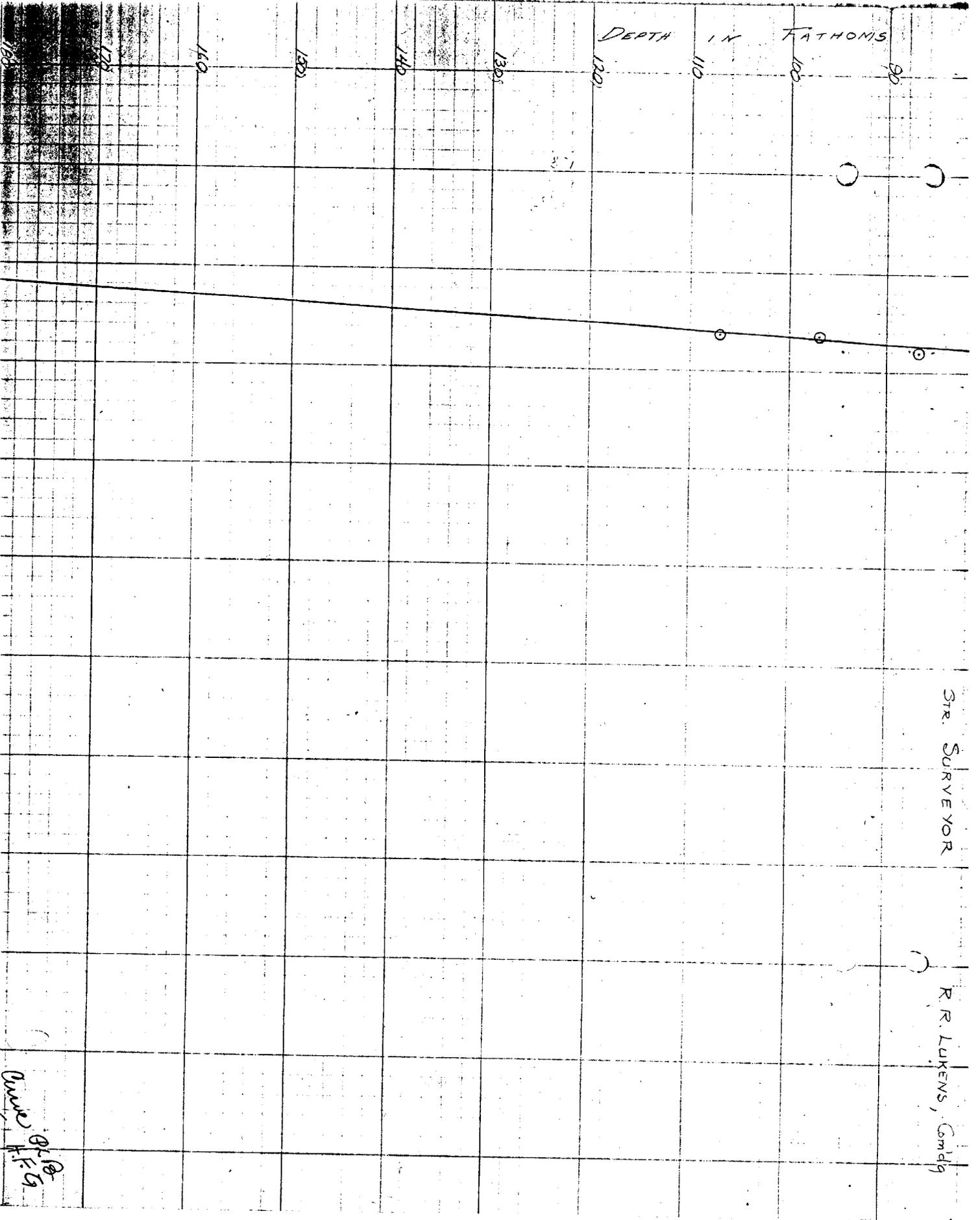
SEPT 16
Surface Temp 11.3°C

Depth in Fms	Temp °F
2	47.0
7	44.0
12	43.0
17	42.5
22	43.0
27	42.0
32	42.0
37	42.0
42	42.0
52	42.0
62	41.5
72	41.0
82	41.0
92	41.0
110	41.0

Depth in Fms	Temp °F
2	53.6
7	53.0
12	48.0
17	47.0
22	45.5
27	45.0
32	45.0
37	44.0
42	44.0
47	43.5
57	43.0
67	42.5
77	42.0
87	42.0
97	41.5
107	41.5

Depth in Fms	Temp °F
5	53.0
10	52.5
15	52.5
20	50.0
25	49.5
30	48.0
35	47.5
40	47.0
45	46.0
50	45.0
55	43.0
60	42.5
65	42.0

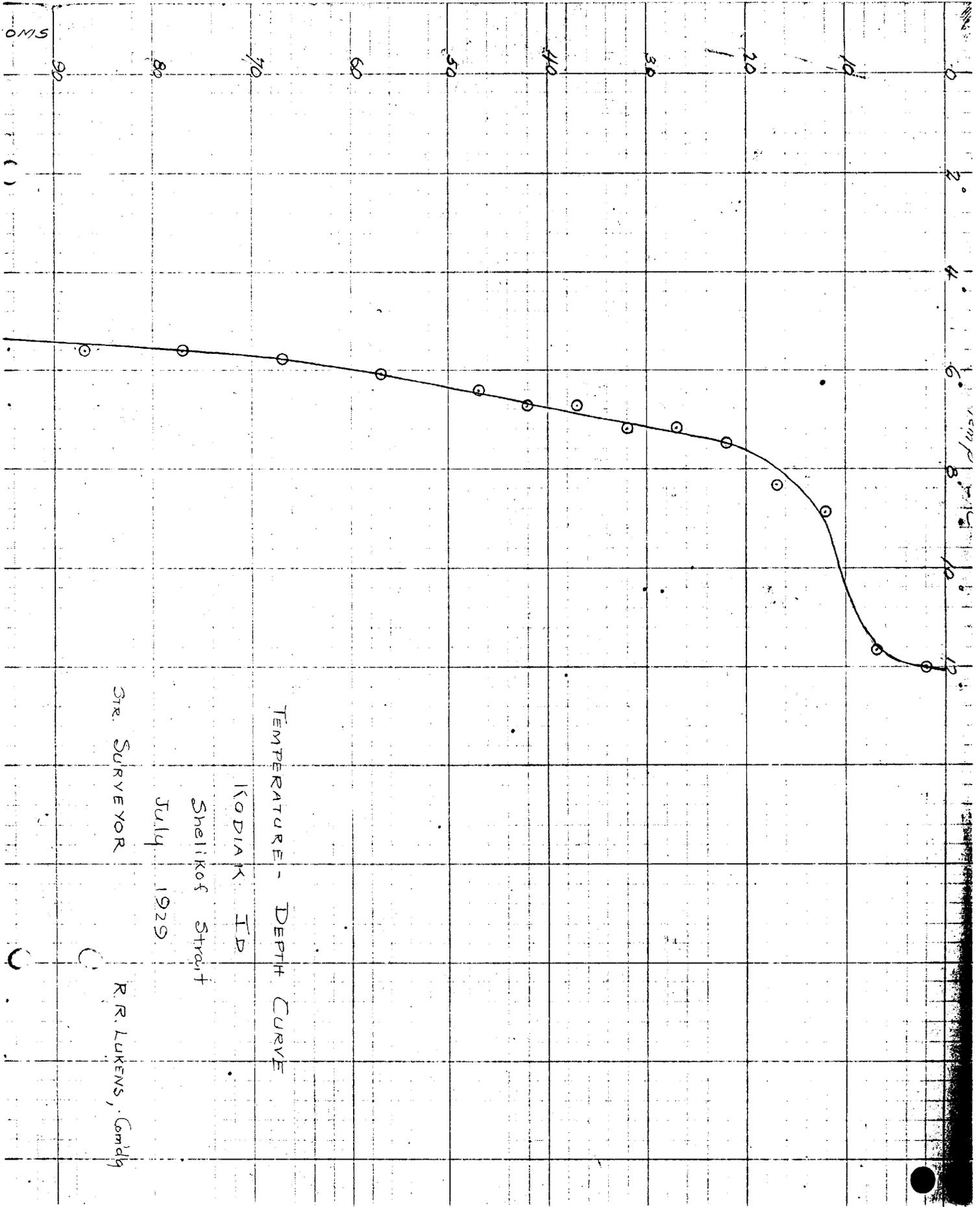
DEPTH IN FATHOMS



SIR. SURVEYOR

R. R. LUKENS, Comdr

Comdr R. R. Lukens



TEMPERATURE - DEPTH CURVE

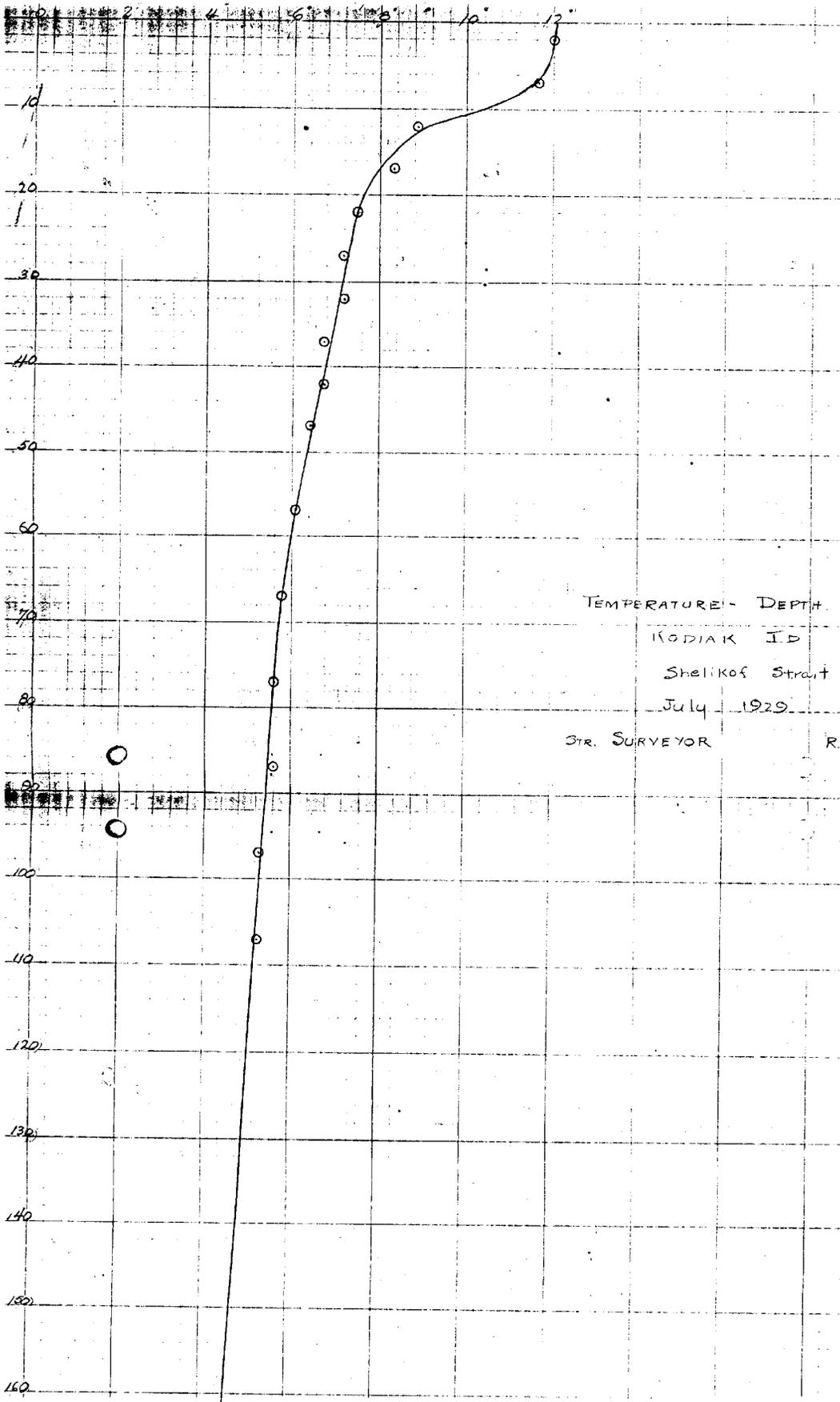
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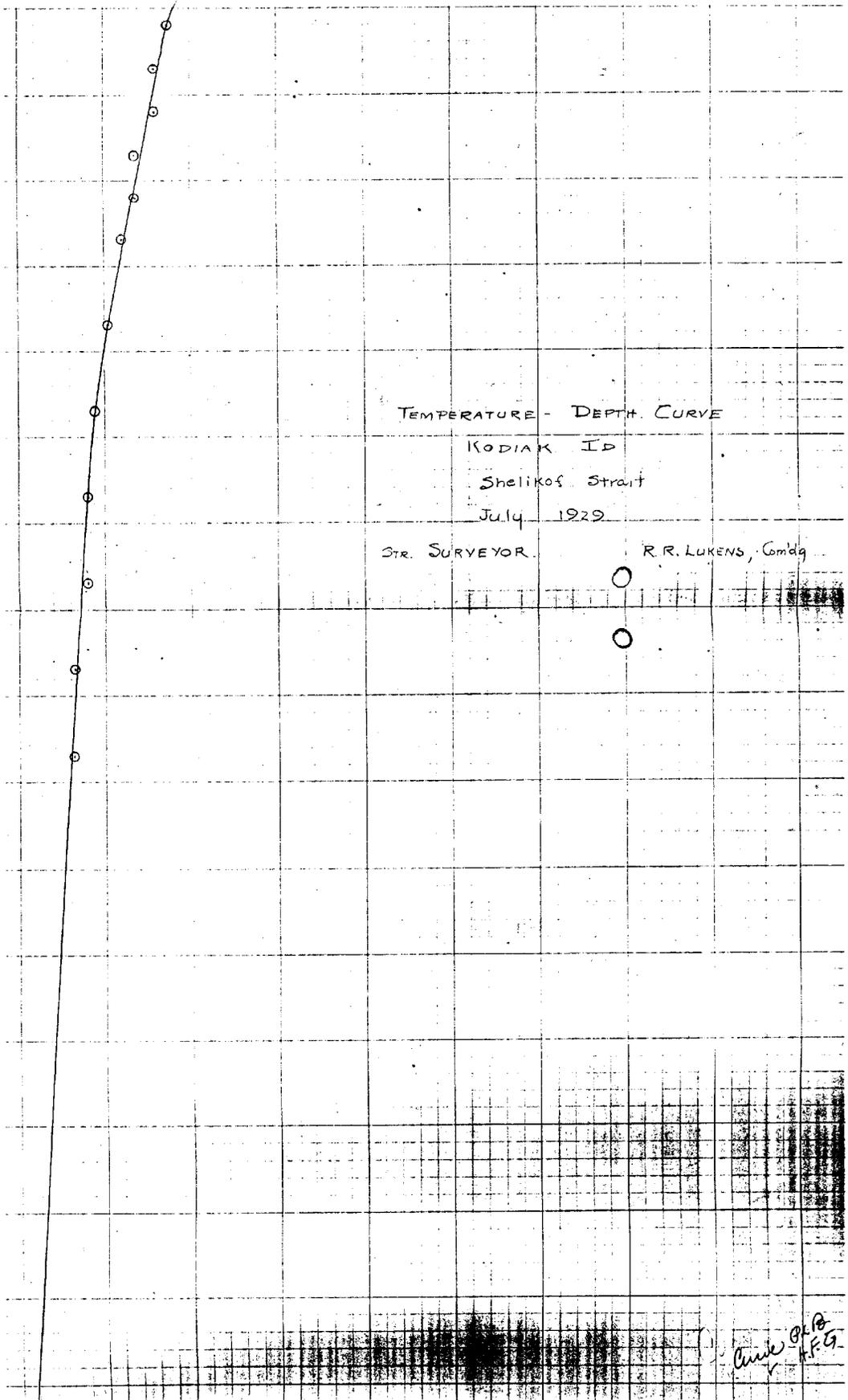
Shelikof Strait

July 1929

Sr. SURVEYOR

R.R. LUKENS, Comdr





TEMPERATURE - DEPTH CURVE

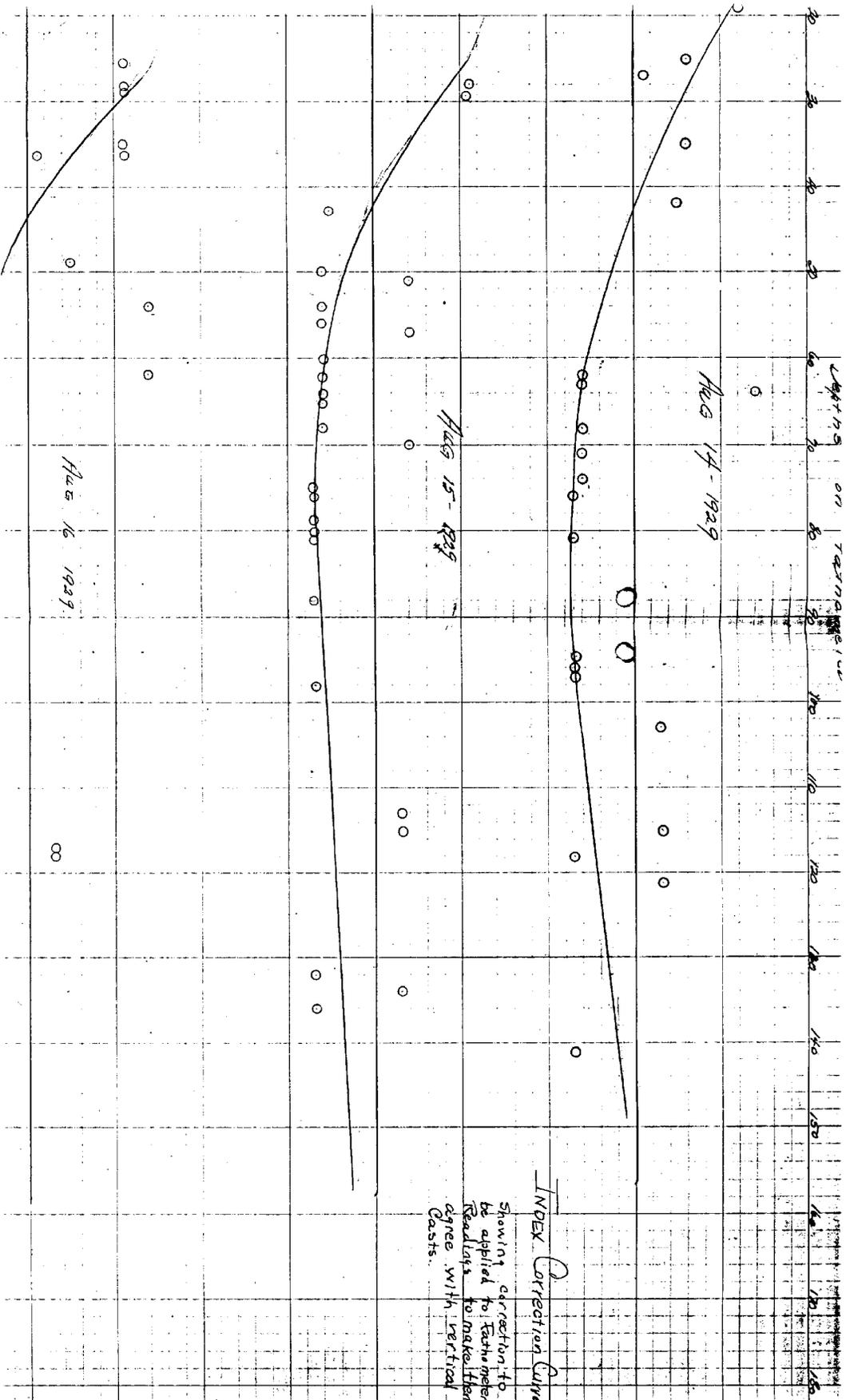
KODIAK ID
Shelikof Strait
July 1929

STR. SURVEYOR. R. R. LUKENS, Comdg

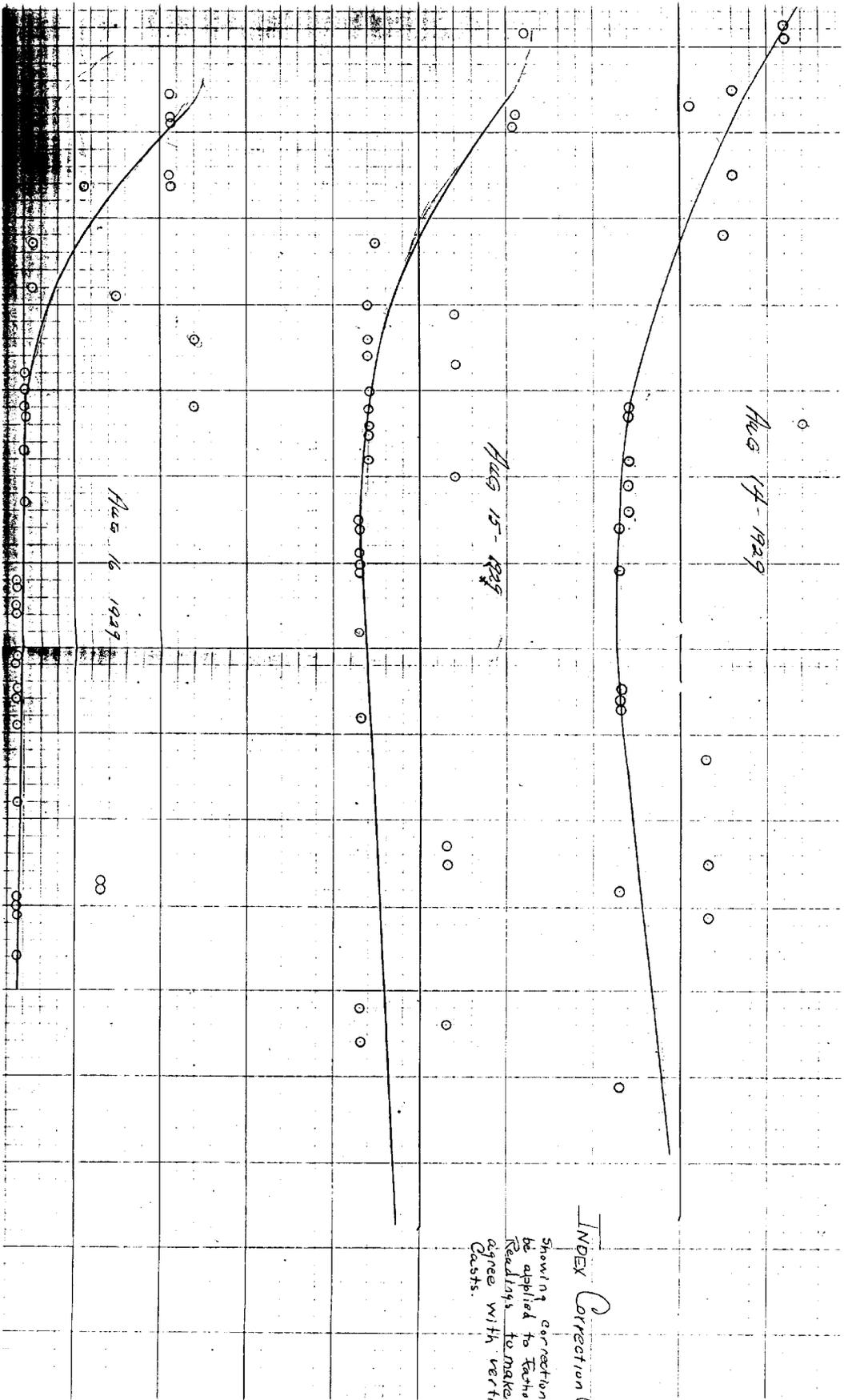
Amie
K.F.G.

	FATHOMETER	FACTORS					
Shell Kot	Strait, S.W. Alaska	July	1929	Salinity 30.5	Mean Velocity 800		
	STR. SURVEYOR			R. R. Luens	Comdg		
Depth in Fathoms	Temp °C	Mean Temp	Factor	Corr. in Fathoms			
2	12.0						
7	11.7	10.9	+0.018	+0.2			
12	9.1	10.2	+0.016	+0.3			
17	8.0		+0.015	+0.3			
22	7.5	9.7					
27	7.3	9.3	+0.013	+0.4			
32	7.1	9.0	+0.012	+0.4			
37	6.9	8.7	+0.012	+0.4			
42	6.7	8.5	+0.012	+0.5			
47	6.5	8.3	+0.011	+0.5			
52	6.3	8.1	+0.011	+0.6			
57	6.1	7.9	+0.010	+0.6			
62	5.9	7.8	+0.010	+0.6			
67	5.8	7.6	+0.009	+0.6			
72	5.7	7.5	+0.009	+0.6			
77	5.6	7.4	+0.009	+0.7			
82	5.5	7.3	+0.008	+0.7			
87	5.5	7.2	+0.008	+0.7			
92	5.4	7.1	+0.008	+0.7			
97	5.3	7.0	+0.008	+0.7			
102	5.3	6.9	+0.007	+0.7			
120	5.0	6.6	+0.006	+0.7			
140	4.8	6.4	+0.005	+0.8			
160	4.6	6.1	+0.005	+0.8			
180	4.3	6.0	+0.005	+0.9			

Fathometer set for velocity
of 800 fm. pr. sec.



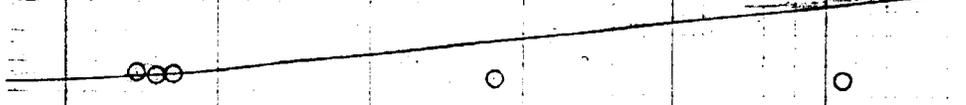
INDEX *Correction Curve*
 Showing correction to
 be applied to Tammometer
 readings to make them
 agree with vertical
 casts.



fathometer

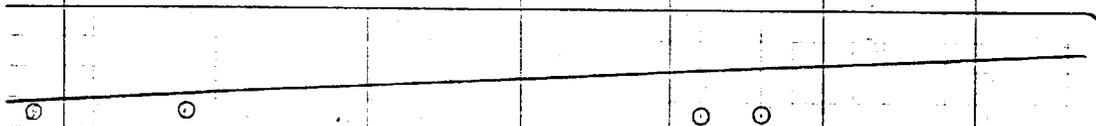
90 100 110 120 130 140 150 160 170 180

7



INDEX Correction Curves

Showing correction to be applied to Fathometer Readings to make them agree with vertical Casts.

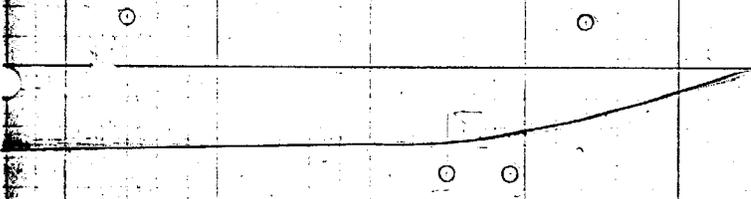


29



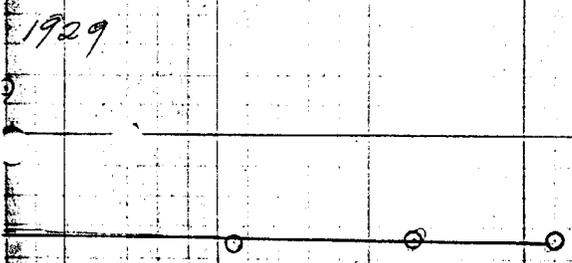
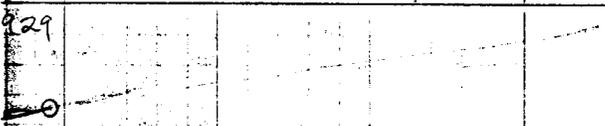
7

in Fathoms
90 100 110 120 130 140 150 160 170 180



INDEX CORRECTION CURVES

Showing Corrections to be applied to Fathometer Readings to make them agree with vertical casts



UNIVERSITY OF CALIFORNIA

60 70 80 90 100 110 120 130 140 150 160 170 180

July 3 - 1929

○ ○ ○

○ ○

○

○ Aug 10 - 1929

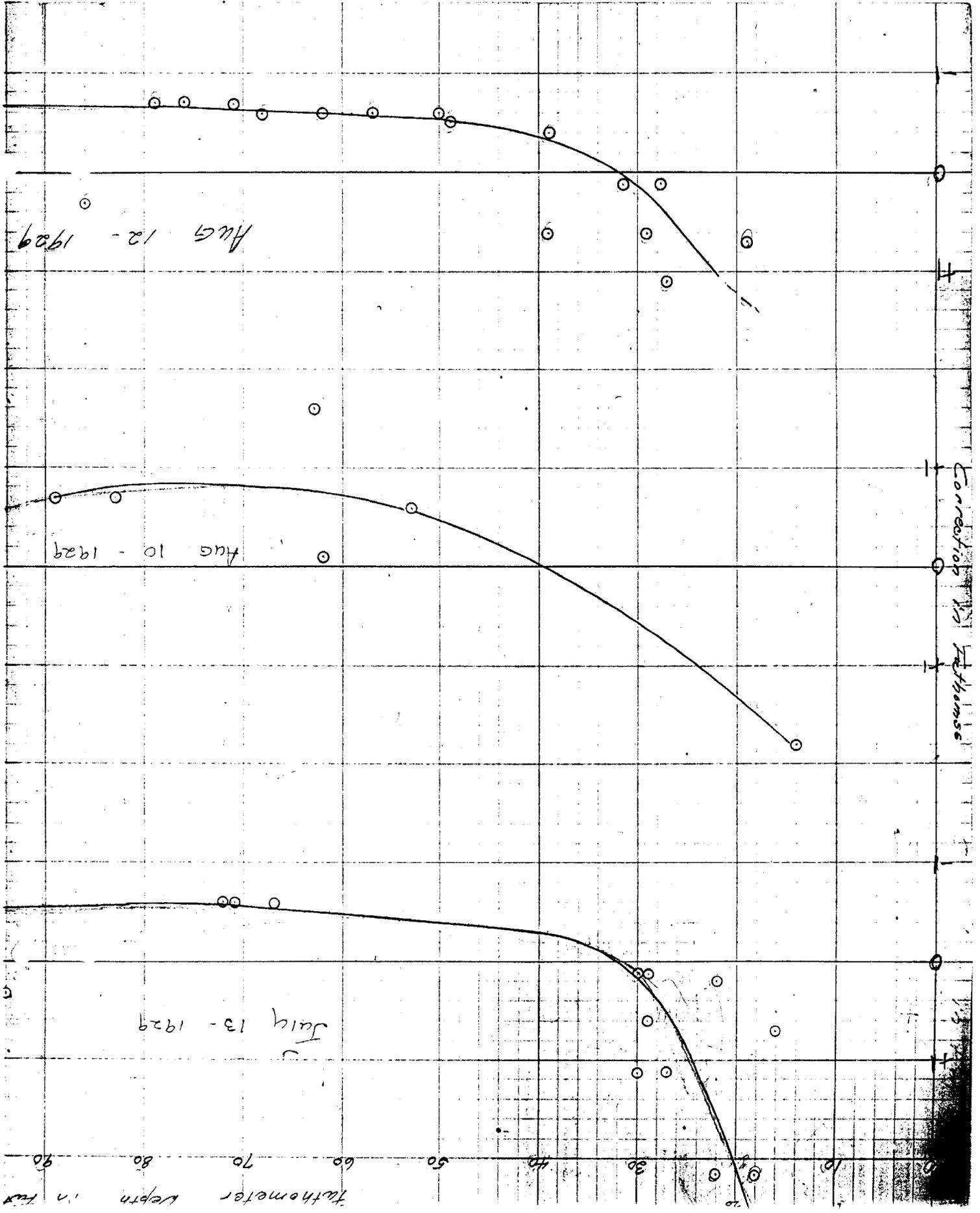
○ ○

○

Aug 12 - 1929

INDEX CORRECTION CURVES

Showing Corrections to be applied to Fathometer Readings to make them agree with vertical casts



30 40 50 60 70 80 90 100 110 120 130 140 150

Fathometers

200

300

400

500

600

700

800

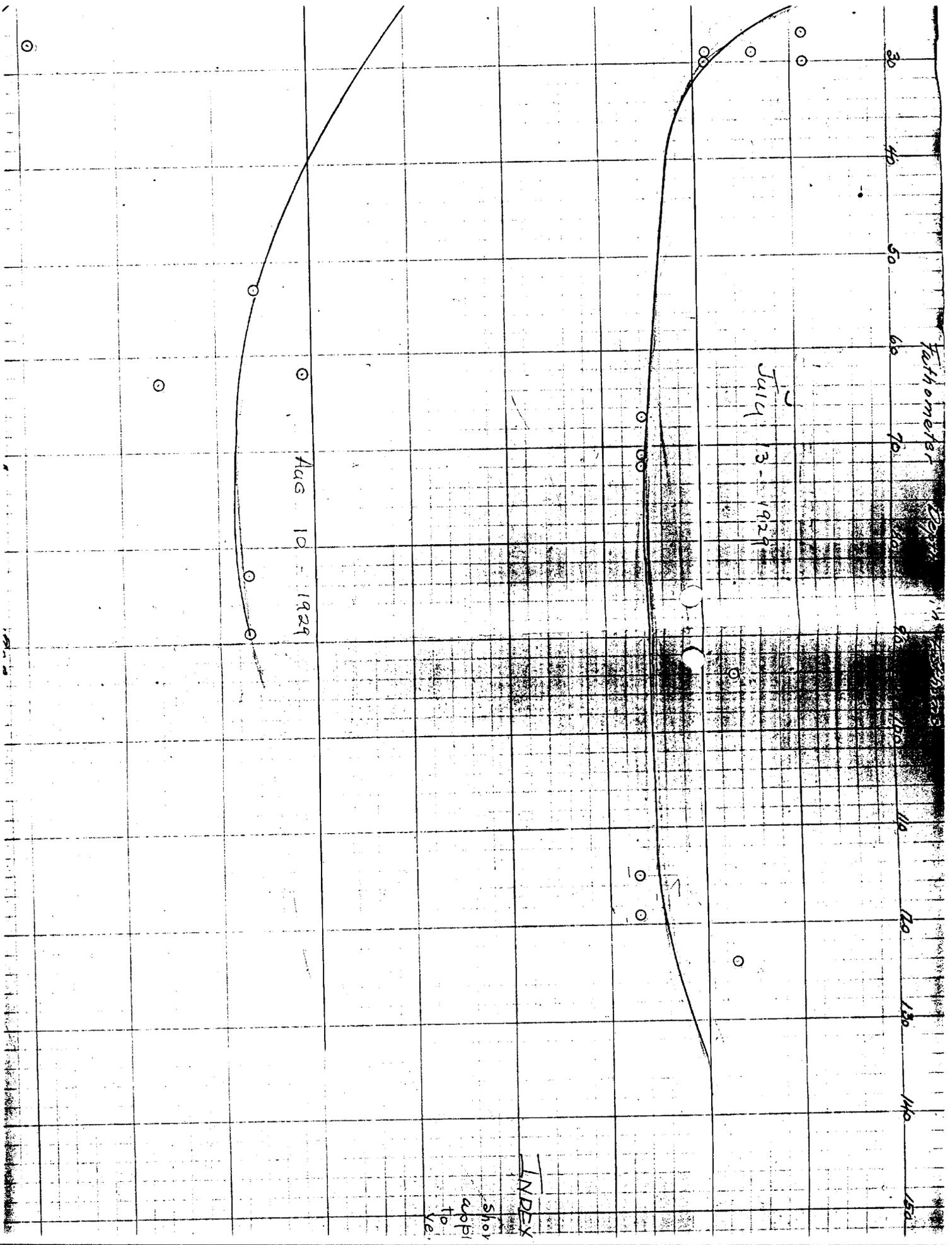
900

July 13 - 1929

Aug 10 - 1929

INDEX

Shot
to
app
ve.



Section of Field Records.

ecm

January 27, 1930.

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 4948

Locality: Shelikof Strait, Alaska.

Chief of Party: R. E. Lukens, in 1929
Plane of reference is mean lower low water, reading
2.4 ft. on tide staff at Uyak
ft. below B. M.

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

Paul C. ...

Chief, Division of Tides and Currents.

DEPARTMENT OF COMMERCE

AND REFER TO No. 11-DRM

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

March 21, 1930.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4948

Entrance to Uyak Bay, Alaska

Surveyed in 1929

Instructions dated March 14, 1929 (SURVEYOR)

Fathometer Soundings

Chief of Party, R. R. Lukens

Surveyed by R. R. L.

Protracted and soundings plotted by P. L. Bernstein

Verified and inked by J. T. Walker

1. The records conform to the requirements of the Hydrographic Manual.
2. The plan and extent of development are in accordance with the specific instructions.
3. The usual depth curves can be completely drawn.
4. No difficulty was experienced with the work by the office cartographer, the field plotting being very satisfactory.
5. The junctions with H. 4933, H. 4938, H. 4941 and H. 4949 are satisfactory. The junctions with the remaining contemporary surveys will be taken up when those sheets are reviewed.
6. No additional work is recommended for this area. There are one or two places where there is an indication of possible shoaler water, but these are in substantial depths in a mud bottom and from the character of the area on the remainder of the sheet there seems to be little likelihood of any dangerous shoals existing here.
7. Attention is called to the fact that the fathometer soundings on this sheet have been corrected not only for temperature and salinity, but also for an index correction obtained by comparing corrected fathometer soundings with simultaneous vertical casts. In all such cases of simultaneous readings the vertical cast is indicated on the sheet in pencil. An inspection of the sheet will show an almost uncanny agreement between the two methods. This,

however, the writer believes, should not be considered as a measure of the accuracy of the fathometer soundings, for what was virtually done was to make the fathometer soundings agree with the vertical depths by applying the index correction. However, it should be noted that even without applying an index correction, satisfactory results would be obtained, since the maximum index correction is only 1.4 fathoms (isolated cases) with the average correction considerably less. Perhaps a more correct measure of the accuracy of the fathometer work would be to compare the soundings as corrected for temperature and salinity with the vertical casts.

The writer contemplates a special study of the advisability of omitting all corrections for temperature and salinity and applying one correction for everything based on comparative readings. Other phases of the treatment of fathometer soundings will also be considered and the results will be embodied either in a separate report or will be attached to the Descriptive Report of this sheet.

8. Reviewed by A. L. Shalowitz, March 1930.

Approved:



Chief, Section of Field Records (Charts)



Chief, Section of Field Work (H. & T.)

Section of Field Records

Report on Sheet No. 4948
Chief of Party R.R. Luken
Protracted by P.L. Bernstein
Verified and Labeled by J.W. Walker

Surveyed in 1929
Surveyed by R.R. Luken
Soundings plotted by
P.L. Bernstein.

The sounding records were neat and complete.
The protracting was accurately done. One hundred and thirty one positions were checked and three of these were found wrong.

The soundings were nearly all plotted according to time. Twenty four soundings were revised.

There were no dangerous shoals or channels to develop.

The sheet was clean and the work was legible.

The drafting conformed to General Instructions for field work.

at numerous positions both fathometers and vertical cast soundings were taken. at these positions the fathometer sounding was inked in at the position and the vertical cast sounding was penciled in nearby, followed by the abbreviation "VC" for vertical cast, and the whole inclosed in parenthesis. In one or two instances as at 103c no fathometer reading was obtained and at these positions the VC sounding was inked in at the position and (VC) written in pencil immediately after it. Otherwise all the inked soundings are by the fathometer method.

Respectfully submitted
J.W. Walker
2/26/30

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4948

HYDROGRAPHIC TITLE SHEET

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. 14

REGISTER NO. 4948

State S.W. ALASKA

General locality Kodiak Island - Shelikof Strait

Locality Entrance to Uyak Bay

Scale 1:40,000 Date of survey July ¹³-Sept. ⁴, 1929

Vessel Str. Surveyor

Chief of Party R.R. Lukens

Surveyed by R.R. Lukens

Protracted by P.L. Bernstein

Soundings penciled by P.L. Bernstein

Soundings in fathoms -feet-

Plane of reference M.L.L.W. at Uyak

Subdivision of wire dragged areas by

Inked by J. Walker

Verified by "

Instructions dated March 14, 1929

Remarks:

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO NO. 11-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

March 21, 1930.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4948

Entrance to Uyak Bay, Alaska

Surveyed in 1929

Instructions dated March 14, 1929 (SURVILYOR)

Fathometer Soundings

Chief of Party, R. R. Lukens

Surveyed by R. R. L.

Protracted and soundings plotted by P. L. Bernstein

Verified and inked by J. T. Walker

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Approved:

Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. & T.)