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ICE-GOUGE DATA, BEAUFORT SEA, ALASKA, 1972 -1980

by

Douglas M. Rearic, Peter W. Barnes, and Erk Reimnitz

OPEN-FILE REPORT

81-950

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.

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INTRODUCTION

The interaction of sea ice with the sea floor is an important factor affecting geologic processes on high latitude shelves. One of the most obvious forms of this interaction is the formation of furrow-like gouges on the sea floor. These gouges are caused by wind- and current-driven ice masses that rake the seabed with their keels. Since the advent of side-scanning sonar about 1970, the morphology and character of these seabed features have been under study. Ice gouges have been reported from the Bering Sea (Thor and Nelson, 1980); from the Chukchi Sea (Rex, 1955; Toimil, 1978); from the Beaufort Sea off Alaska (Brooks, 1974; Carsola, 1954; Reimnitz et al., 1972); from the Beaufort Sea off Canada (Kindle, 1924; Lewis, 1978; Pelletier and Shearer, 1972; Wahlgren, 1979); from the east coast of Canada (Harris, 1974); from the northeast Atlantic (Belderson et al., 1973); and from the Great Lakes (Berkson and Clay, 1973).

We have been collecting ice-gouge data in the form of sonographs and fathograms since 1972, and since 1975 precision bathymetry and navigation have been used as an aid to our studies. Our initial efforts summarized distribution and character of ice gouges (Reimnitz et al., 1973; Reimnitz and Barnes, 1974). Subsequently, we have focused on describing processes and rates of processes (Barnes et al., 1978; Barnes and Reimnitz, 1979; Reimnitz et al., 1977). In this report we outline the field and office techniques, the terminology, and the results of an effort to enumerate ice gouge characteristics from existing sonographic and bathymetric records to form a

comprehensive set of data on ice-gouge characteristics on the Alaskan Beaufort Sea shelf.

Over 2000 kilometers of trackline data collected in the Beaufort Sea between 1972 and 1980 have been analyzed for ice-gouge characteristics (Barnes et al., 1973; Barnes et al., 1980; Kempema et al., 1981; Maurer et al., 1978; Reimnitz et al., 1979a, 1979b). These tracklines were selected in order to obtain nearly continuous detailed ice-gouge data coverage from Smith Bay to Camden Bay, Alaska (Fig. 1). Three major environments were covered by these records: Harrison Bay, the semi-protected lagoons and sounds, and the offshore shelf areas. The division of data into 1-km segments allowed a detailed analysis of ice gouging in sub-environments such as shoals as well a gross characterization of shelf gouging. In the course of the project other seabed features such as strudel scours (Reimnitz et al., 1974), tick marks (Reimnitz et al., 1973), and sediment waves and ripples were recorded and measured where possible.

The comprehensive study of ice gouge characteristics has only recently been attempted and the terminology for these features has not been standardized. In this report the term ice gouge is synonymous with ice score (Kovacs, 1972), ice scour (Lewis, 1978; Pelletier and Sherarer, 1972), ice scour track (Wahlgren, 1979), and ice plow mark (Belderson and Wilson, 1973). The terminology we use here follows the usage of Barnes et al., (1978), Reimnitz and Barnes (1974), and Toimil (1978), and is diagramed in figure 2. A detailed discussion of the range of modifiers for terminology to cover a range of ice-gouge forms is given in Wahlgren (1979).

As we are primarily interested in the effect gouging has on the seabed rather than in the tools that caused the gouging, we consider each seabed incision as a separate gouge even when several parallel gouges may have been

Figure 2 . Diagram of the typical gouge measurements made from side scan sonar and fathometer records.

caused by the same ice movement event or even by the multiple tools of a single ice keel. This, along with the fact that we counted gouges in the area covered by our sonographs rather than only those crossed over by the ship, makes our density values generally higher and unfortunately incomparable to Canadian data (Lewis, 1978; Wahlgren, 1979) or Bering Sea data (Thor and Nelson, 1980).

Methods of Data Collection

The records used in this project were collected from on board the U.S.G.S. R/V Karluk and R/V Loon and the U.S.C.G. icebreaker Glacier. Bathymetry data collected in 1972 and 1973 were recorded by either a fathometer or a high-resolution seismic system. On the best of these fathograms we could resolve depth changes as small as 30 - 40 centimeters. Bathymetry records collected between 1975 and 1980 were obtained with a Raytheon RTT-1000 dry paper recording fathometer using a 200 kHz transducer for bottom profiling and a 7 kHz transducer for subbottom observations to 10 m below the sea floor (Fig. 3).. Under ideal conditions this system can resolve features as small as 15 cm. Sonar coverage was accomplished using a model 259-3 EG & G Side-scan sonar recorder and a model 272 EG & G sonar fish using a 105 kHz pulse (Fig. 4). The availability and quality of the sonographs were major determinants in trackline selection.

Data collection was subject to many types of problems both internal and external. The variation in data sources from year to year controlled the overall resolution. The variation in quality of records depended on two major factors: enviromental factors affecting the bathymetric and sonographic records, and ship and system operational variabilities. Many of the factors influencing the quality of sonographs in general have been presented by

Figure 3. Fathogram of an ice gouged seafloor from which the measurements of gouge depth, ridge height, water depth, and subbottom depth were made. Water depth is 36 meters.

Figure 4. Sonograph of an ice gouged seafloor from which the measurements of gouge density, gouge orientation, and gouge width were made. Water depth is 20 meters.

Belderson et al. (1972). Ice influenced the record quality in two unique ways: (1) floating or grounded ice acts as a strong reflector, printing a strong signal on the sonograph and often blocking the view of the seabed beyond the ice, (2) on many track lines the presence of ice required the helmsman to steer left and right of the track to avoid the ice, thereby causing the side-scan sonar sensors to veer back and forth resulting in an unreal sinuosity to linear features on the sonographs. Additional factors influencing the sonographic records are depth of tow-fish (insufficient tow depth decreases resolution of small features such as gouges) and system-tuning variability from operator to operator and from year to year. Because side-scan sonar records represent the acoustic reflection properties of the sea floor, it is possible that some gouges, infilled by fine sediments, may be visible because of textural differences between the gouge fill material and the surrounding sea floor sediments. This problem, however, was not encountered except with gouges observed in the deeper offshore areas (usually greater than 50-m depth). Again, due to the reflection process of sonar, the orientation of gouges relative to the trackline had an effect on the clarity and resolvability of gouges (Fig. 5).

Typical factors affecting the quality of bathymetric records are sea state and water depth (decreasing signal strength and increasing sound cone coverage combine to decrease record quality and resolution).

Navigational accuracy varied greatly within the data set. Techniques ranged from dead reckoning to radar to precision range-range techniques on the innermost shelf. An evaluation of the error has not been made on a line-to-line basis but in general the records obtained closer to shore and more recently are more accurate. We estimate, at worst, location errors on the order of 1 kilometer, and, at best, errors of only a few meters.

Figure 5. Effects of a one meter swell and change in gouge orientation (due to a 90 degree course change at the 300 meter mark) on the side scan sonar quality.

Methods of Data Analysis

At the beginning of this project we decided to collect as much data at one time as was possible from our records. After the selection of suitable tracklines, navigation records were used to divide tracklines into 1-km segments (Fig. 6). Using time ticks keyed to navigation, the same 1-km segments were marked on the sonographs and fathograms (Rearic and Barnes, 1980). A data sheet was used to tabulate gouge characteristics in each segment (Fig. 7). The major ice gouge characteristics of interest are shown in figure 2. In order to minimize the admittedly subjective factor in the observation and measurement of gouge characteristics, the analysis was performed by one individual (D. R.). Observations and counts from early in the study were repeated in an effort to keep the observations consistent. The following are the data gathered, the units, and the source of information:

1. Segment identification (km) (navigation)
2. Distance from the coast (km) (navigation)
3. Average orientation ($^{\circ}$ T) (sonographs)
4. Orientation variability (sonographs)
5. Observed number of gouges per segment (sonographs)
6. Correction factor and gouge density
7. Gouge depth (m) (fathograms)
8. Maximum gouge depth (m) (fathograms)
9. Maximum ridge height (m) (fathograms)
10. Maximum gouge width (m) (sonographs)
11. Multiple gouge incisions (sonographs)
12. Depth to the first reflector (m) (fathograms)
13. Other measurements and remarks

Figure 6. Location map of the ten navigation plates which were developed to correlate sonar and bathymetric records to the trackline navigation at one kilometer intervals. The navigation plates are included with the data set.

Figure 7. Ice gauge data sheet developed for the recording of ice gauge measurements. See text for an explanation of the column headings.

Explanation of Data Categories

1. Segments (Km) (navigation).-- The segments of each trackline are 1 km long. Segment designation letters are references to points spaced 1 km apart with point A being the position of the start of the trackline. Point B is then plotted 1 km along the trackline from point A. The measurements of Start Time, Start Depth, Distance From the Coast, and Depth to the First Reflector refer to the first point of the segment designation letters in that 1-km segment. All other measurements pertain to data acquired between the segment points. In segments where less than 1 km of sonar record was available (due to machine malfunction, paper roll change, etc.), the number of observed gouges counted was adjusted to a 1-km estimate by simple proportion. Line numbers are keyed to year of record, then to trackline within that year (e.g. 7-39 = trackline No. 39 in 1977).

2. Distance from The Coast (km) (navigation).-- The measurement was taken normal to the coast or a barrier island. No measurements were taken on tracklines (or portions of them) run in areas between the coast and barrier islands. These areas included Simpson Lagoon, Steffanson Sound, Leffingwell Lagoon, and Harrison Bay (Fig. 1).

3. Average Orientations ($^{\circ}$ T) (sonographs).-- The average orientation was measured to the nearest five degrees relative to the trackline by constructed templates (Fig. 2). Using the ship's course, these relative orientations were converted to true orientations between $0 - 360^{\circ}$ T. As the sense of ice motion is generally unknown, the orientations are not vectors. They can be represented as either bidirectional or unidirectional, as can the

strike of a bed. That is, a gouge with a "measured" orientation of $270^{\circ}T$ is equivalent to an orientation of $090^{\circ}T$ or is oriented $270^{\circ}-090^{\circ}$. Both a dominant and subordinate orientation was measured when more than one trend was distinguishable.

4. Orientation variability (sonographs).- Low, medium, and high variability of gouge orientation (L, M, H) has been estimated using the following criteria:

- L - The dominant orientation is virtually the only orientation. Subordinate orientations may be observed rarely or not at all.
- M - The dominant and subordinate orientations are approximately evenly distributed in the segment.
- H - The dominant and subordinate orientations exist but are not exclusive and may be only a best estimate of many orientations.

5. Observed Number of Gouges (sonographs).- The number of individual gouge lineations identified from the sonar records was recorded for each segment.

6. Correction Factor and Gouge Density.- In order to determine the gouge density normal to the trackline, a correction factor has been applied to the observed number of gouges (Barnes et al., 1978; Reimnitz and Barnes, 1974).

$$N = \frac{1}{1 \sin \theta + R \cos \theta} (N_{obs})$$

where: N = corrected number of gouges in counting interval (gouge density)

N_{obs} = number of observed gouges in the segment

R = recorded width of sonograph, in meters

(both sides of record i.e. 125-m scale = 250-m record width)

1 = length of segment, in meters

θ = dominant trend angle of gouges relative to ship's track

(90° = perpendicular to track)

The normalizing of the gouges in each segment allows us to compare segments on an equal basis and also to evaluate a number per unit area value for that segment. The normalizing assumes all gouges are parallel and infinitely long. Other investigators have counted only those gouges crossed over by the ship (Lewis, 1978). We count all gouges on a sonograph segment, yet gouge length is often short and orientation varies. Therefore, the estimates of density we obtain from this technique may be high.

7. Gouge Depth (fathograms). - The depth of penetration ("Gouge Incision Depth," Barnes et al., 1978) of ice keels into the seabed (see Fig. 2) was measured along the trackline from fathograms and enumerated in 20-cm increments for each segment. The maximum incision depth was also recorded. In many cases the resolution of the fathograms was not good enough to accomplish this enumeration. In areas of considerable seafloor relief due to the abundance of ice gouge ridges and troughs, it was often necessary to subjectively estimate the level of the undisturbed sea floor (Fig. 3). Gouges less than 20 cm in depth or those that were observed on the sonar but not on the fathogram were placed in a category of No Measurement Possible (NMP).

8. Maximum Gouge Depth (m) (fathogram). - The maximum gouge incision depth was recorded for each segment.

9. Maximum Ridge Height (m). - A measurement was made of the highest ridge in each segment from the fathograms. The measurement was made from the adjacent seafloor depth to the highest point of the ridge (Fig. 2). Summing the

maximum ridge height and maximum gouge depth in each segment gives the maximum seabed relief from ice gouging in each segment.

10. Maximum Gouge Incision Width (m) (sonographs).- A measurement of the maximum width of a single gouge in each segment was made from the sonographs (Fig. 2). The template used for orientation corrections was scaled in meters for 10° incremental orientations to allow distance measurements at all orientations. The gouge incision was measured from inside the bounding ridges at seafloor depth, as opposed to a disruption width (Barnes et al., 1978) which would include the width of the bounding ridges. As with orientation, width measurements are distorted by horizontal exaggeration on most records and are corrected for the sonograph distortions.

11. Multiple Gouge Incisions (sonographs).- (1) The number of multiple incision gouges (Fig. 2) in each segment was noted along with (2) the maximum number of incisions formed by any one event. (3) The maximum disruption width (Fig. 2) for the widest multiple gouge was measured across the gouge from the furthest edge of the disrupted sediments outside the bounding ridges. (4) The dominant orientation for multiple gouge incisions in each segment may be different than that for single incisions and therefore was also recorded.

12. Depth to the First Reflector (m) (fathogram).-When possible, the depth to each subbottom reflector was recorded from the 7 kHz record of the Raytheon RPT-1000 fathograms. On tracklines using only a Simrad Fathometer this measurement was not possible.

13. Other Measurements and Remarks.- Pressure ridge gouging, tick marks (Reimnitz et al., 1973) strudel scours (Reimnitz et al., 1974), shoals and terrace measurements, and other observations of seafloor morphology were recorded.

Off Cape Hallett (Trackline 7-39) two additional data measurements were made to obtain more information regarding orientation distributions and gouge spacing. For each segment of this trackline the orientation of every individual gouge was noted and the center line distance between individual gouge troughs was measured.

CONCLUSION

With the completion of this data analysis an ice-gouge data set exists which gives a reasonable estimate of gouge characteristics in the different environments on the Alaskan Beaufort Sea shelf. The format created for the organization and storage of gouge data will allow us to incorporate new data as it becomes available and to increase our data coverage and comparisons to other areas of the Arctic Seas.

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CONTENTS OF OPEN-FILE REPORT 81-950

The report, navigation plates, and ice-gouge data are contained on eight (8) microfiche cards.

Report and figures	1	microfiche card
Navigation plates	2	microfiche cards
Ice-Gouge data	5	microfiche cards

TRACKLINE

92

ICE GOUGE DATA RECORD

1978

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	CEST/AST OBSERVATION	ADJUSTED OBSERVATION	ORIENTATION	VARIABILITY	NUMBER OF READINGS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE
SEGMENT	KM	HOURS MINUTES SECONDS	M	KM	°T	DOH SUB	DOH SUB	DOH SUB	DOH SUB	DOH SUB	DOH SUB	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION	DEPTH TO FIRST REFLECTOR	SONAR RANGE				
OR	17	1657.5	28.0	21.3	356	125	116	151	L	178	1.01	179	8	103	26	20	15	6	8	1.5	10	9	2	6	33	021	-	125			
RS	18	1709.0	17.6	22.4		125	121	151	L	181	1.04	188	2	81	39	37	18	5	1	1.1	25	9	4	4	15	151	33.1				
ST	19	1720.8	28.5	23.6		125	121	041	M	176	1.04	183	0	99	41	25	10	1	3	1.3	24	8	4	11	42	021	36.8				
TU	20	1733.5	31.0	24.8		110	060	100	M	141	1.98	138	2	71	26	23	12	5	4	1.8	13	1.0	1	4	12	161	59.2				
UV	21	1744.4	31.0	25.9		75	071	121	M	143	1.97	138	1	81	16	18	17	2	3	1.3	8	8	7	7	53	136	58.1				
VW	22	1756.0	31.1	27.0		145	141	076	L	120	1.02	135	1	-	-	-	-	-	-	15	-	3	6	40	141	36.9					
WX	23	1806.5	32.2	28.0		125	121	056	L	105	1.04	109	2	33	30	24	12	4	2	1.1	15	9	3	2	16	131	-				
XY	24	1817.4	32.8	29.1		125	116	151	L	107	1.01	108	1	38	23	26	10	7	3	1.2	18	1.4	4	27	105	151	-				
YZ	25	1828.2	32.9	30.2		125	121	151	L	107	1.01	108	2	61	26	22	4	7	6	1.5	17	1.0	7	21	105	151	-				
ZAA	26	1838.0	33.0	31.3		125	121	156	L	114	1.04	118	6	43	18	16	10	9	18	2.6	20	1.3	3	5	18	151	-				
AABB	27	1847.9	30.4	32.5		131	126	157	L	170	1.08	183	6	106	13	12	7	6	26	2.9	12	1.5	3	2	15	031	-				
BECC	28	1859.1	32.3	33.7		125	126	151	L	105	1.01	96	10	42	11	18	10	7	7	1.3	15	1.4	3	3	28	141	-				
CC																															
ELC		1908.1	32.1	34.9																											

VESSEL	RAFLUX
TEMPLATE SIZE	4.0 KTS

REMARKS

3.0 M. SHOAL - GROUND IS 1.5 M. ON SHOREWARD SIDE

HIGH DEGREE OF ICE CAUSES DIFFICULTY IN DETERMINING MAXIMUM EXISTING GOUGES

ICE THICKNESS (1) 20' (2) 25' (3) 30' (4) 35' (5) 40' (6) 45' (7) 50' (8) 55' (9) 60' (10) 65' (11) 70' (12) 75' (13) 80' (14) 85' (15) 90' (16) 95' (17) 100' (18) 105' (19) 110' (20) 115' (21) 120' (22) 125' (23) 130' (24) 135' (25) 140' (26) 145' (27) 150' (28) 155' (29) 160' (30) 165' (31) 170' (32) 175' (33) 180' (34) 185' (35) 190' (36) 195' (37) 200'

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2 METERS DEPTH - 100 METERS DEPTH AND THEREFORE DEPTH OF 50 M. IS IN DEPTH OF SECOND BECC

CIRCUIT LENGTH IS 100 METERS THE MAX. DEPTH OF THE CIRCUIT IS 100 METERS THE MIN. DEPTH OF THE CIRCUIT IS 100 METERS

ICE THICKNESS (1) 20' (2) 25' (3) 30' (4) 35' (5) 40' (6) 45' (7) 50' (8) 55' (9) 60' (10) 65' (11) 70' (12) 75' (13) 80' (14) 85' (15) 90' (16) 95' (17) 100' (18) 105' (19) 110' (20) 115' (21) 120' (22) 125' (23) 130' (24) 135' (25) 140' (26) 145' (27) 150' (28) 155' (29) 160' (30) 165' (31) 170' (32) 175' (33) 180' (34) 185' (35) 190' (36) 195' (37) 200'

[illegible]

SURVEY OF 18th BRANCH (Rimber Is. to Cross Is.)

ICE GOUGE DATA RECORD

1979

SECRETARY SCARLE 1:1695

VESSEL	KARLUK
TEMPLATE SIZE	4.0 RTD

[illegible]

TRACKLINE		ICE GOUGE DATA RECORD																				VESSEL		TEMPLATE				
94		1979																				KARLUK		4,0 ATB				
DATE																												
24/																												
SEGMENT		START TIME	START DEPTH	DISTANCE FROM LAST	SHIP'S COURSE	ICE CLASS	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	NUMBER OF GOUGES	W.C. 1-5	W.C. 6-10	DOUGE SENSITIVITY	INCISION DEPTH DISTRIBUTION METERS					NUMBER	MINIMUM INCISIONS PER GOUGE	MAXIMUM INCISIONS PER GOUGE	DISPERSED	DOUGES	DEPTH TO FIRST REFLECTOR	SONAR RANGE			
KM		M	M	KM	°T	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	M	M			
		REMARKS																										
QR 17		1157.0	25.8	15.4	180	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.5	BENCH (6 M HIGH) SONAR FROM DIST TO SWELL AND GROUND ORIENTATION.	
RS 18		1206.5	21.3	14.5	090	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SONAR FROM DUE TO ORIENTATION AND SWELL.	
ST 19		1217.5	21.3	13.8	10	100	255	H	169	238	102	12	59	68	21	10	10	1	1.1	10	9	10	7	17	100	-	BENCH (5 M HIGH) AT END OF SEGMENT.	
TU 20		1229.2	23.2	13.5	170	100	260	105	H	165	238	392	11	76	43	22	10	7	1	1.2	7	10	5	8	50	100	-	POSSIBLE PRESSURE RIDGE GRADING.
VV 21		1239.0	25.5	13.2	165	100	255	100	H	179	200	358	10	-	-	-	-	-	-	-	12	-	8	6	30	100	-	NO ECHOTRAN. POSSIBLE PRESSURE RIDGE GRADING.
VV 22		1250.0	-	13.1	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO ECHOTRAN. SONAR V. POOR.	
WX 23		1300.0	-	12.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO SONAR THIS SEGMENT. NO ECHOTRAN. BENCH (4.5 M HIGH) AS SUNK BY SONAR AT SEGMENT START - BEFORE SONAR LOSS.	
XY 24		1304.5	-	11.2	090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO SONAR. 2 MIN. IN ECHOTRAN. POSSIBLE.	
YZ 25		1316.0	20.8	10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO SONAR.	
ZAA 26		1325.0	20.8	10.4	170	100	260	170	N	171	238	401	10	89	33	20	13	11	5	1.1	8	10	9	5	34	105	-	BENCH (4.5 M HIGH) AT END OF SEGMENT.
YABE 27		1333.4	23.7	10.3	10	100	265	H	206	238	490	13	105	54	17	8	17	5	1.6	18	10	-	-	-	-	-	-	BOTTOM OPERATED WITH GOUGES - DIFFICULT TO DISTINGUISH HULL - DEEPER GOUGES.
BUEE 28		1343.4	25.2	10.4	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SONAR V. POOR DUE TO ORIENTATION (MOST GOUGES 1 TO 2).	
WUE 29		1352.2	23.4	9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SONAR V. POOR DUE TO ORIENTATION OF GOUGES TO TRACKING. BENCH (4.5 M HIGH) AT SEG. START.	
WUE 30		1400.0	21.0	8.7	090	25	095	095	L	111	154	190	9	47	41	12	7	4	0	1.8	5	6	3	10	21	080	-	
EUE 31		1409.2	20.1	8.2	170	100	245	090	M	156	238	341	13	99	31	10	4	5	4	1.2	11	9	6	8	46	075	-	BENCH (4.5 M HIGH) MAKE IT DENSE AND TOP OF GROUND.
FUE 32		1418.0	24.5	9.4	20	05	090	075	1A	185	173	320	11	112	48	9	4	6	3	1.5	12	9	1	9	31	075	-	

1979

APR 20 1964

4.0. КТВ

[illegible]

[illegible]

1978

TRACKLINES

ICE GOUGE DATA RECORD

1978

SEGMENT SCALE 1:2008

VESSEL	KAPLUK
TEMPLATE SIZE	4.5 KTB

TRACE LINE		ICE GOUGE DATA RECORD													1978		SEGMENT DATE 1:2008										VESSEL KAPLUK	
DATE																											TEMPLATE SIZE 4.5 KTB	
233																												
SEGMENT																												
KM																												
AB																												
1																												
BC																												
2																												
CD																												
3																												
DE																												
4																												
EF																												
5																												
FG																												
6																												
GH																												
7																												
HI																												
8																												
IJ																												
9																												
JK																												
10																												
KL																												
11																												
LM																												
12																												
MN																												
13																												
NO																												
14																												
OP																												
15																												
PQ																												
16																												

TRACKLINE		ICE GOUGE DATA RECORD																				VESSEL		TEMPLATE SIZE																																							
8		1978																				KARLUK		4.6 KTS																																							
DATE		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF INCISIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH		MAXIMUM BRIDGE HEIGHT		MAXIMUM LENGTH		MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR		SONAR RANGE		REMARKS																	
233		KM		M		KM		°T		°		°		°		°		°		°												M		M		M		M		M		M																					
SEGMENT		KM		M		KM		°T		°		°		°		°		°		°												M		M		M		M		M		M																					
QR		1741.0		21.0		201		203		60		263		293		L		120		1.01												121		59		23		14		9		7		8		1.7		15		1.6		6		3		41		220		28.2		125	
RS		1747.5		20.3		19.1				70		273		333		L		146		.98												143		82		35		12		4		9		4		1.5		6		1.2		7		3		31		273		27.7			
ST		1754.9		20.0		18.1				55		258		318		M		163		1.04												161		108		30		9		5		5		6		2.5		12		1.9		4		4		18		208		26.6			
TU		1802.0		19.1		17.1				60		263		313		M		125		1.01												126		64		33		13		6		7		2		1.3		12		.9		5		9		30		353		26.1			
UV		1808.8		18.7		16.1				60		263		318		M		158		1.01												159		99		35		14		6		2		2		1.2		9		.9		9		6		28		348		25.3			
VW		1815.2		18.5		15.2				55		258		323		M		132		1.04												137		62		37		13		10		6		4		1.5		10		1.0		1		6		42		358		21.3			
WX		1822.4		18.0		14.2				60		323		253		M		145		1.01												146		69		45		17		9		3		2		1.5		10		1.3		17		5		2.6		243		24.0			
XY		1829.2		16.9		13.3				65		268		323		M		110		.99												108		63		27		11		3		2		4		1.3		18		.8		6		4		18		253		-			
YZ		1836.2		15.9		12.2				65		328		298		M		136		1.04												141		77		30		12		6		8		3		1.5		13		1.1		6		4		18		243		20.1			
ZAA		1843.0		15.1		11.2				60		283		333		M		139		1.01												140		74		38		10		8		2		7		1.2		14		.8		5		2		33		253		19.5			
AABR		1850.0		13.9		10.2				70		273		323		L		133		.98												130		59		56		12		4		0		2		1.1		17		1.8		8		6		32		358		19.5			
BRCC		1857.0		13.9		9.3				70		273		348		L		160		.98												156		79		63		12		3		2		1		1.1		6		1.0		6		4		32		238		-			
CCDU		1904.0		13.1		8.2				70		273		003		L		129		.98												126		70		54		5		0		0		0		.5		4		.9		3		4		28		218		17.4			
DCE		1911.0		12.5		7.2				60		263		008		L		96		1.01												97		52		43		1		0		0		0		.5		8		.4		2		4		24		218		17.2			
EEFI		1917.4		12.4		6.3				50		253		003		M		105		1.08												113		83		22		0		0		0		.4		8		.6		1		3		14		258		-					
FFGG		1924.2		11.1		5.3				60		263		003		M		114		1.01												115		95		17		1		0		1		0		.8		10		.5		3		2		11		258		-		.5 KM OF SONAR MISC. "S" COUNT CORRECTED TO 1 KM	

1978

KAPLUR

4.6 NTB

[illegible]

[illegible]

[illegible]

1978

VESSEL	KARLUK
TEMPLATE SIZE	7.5 NTM

DATE		START TIME		START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	COURSE ORIENTATION	ADJUSTED ORIENTATION	'T	ORIENTATION VARIABILITY	MUSEUM OF INCLUSIONS	CORRECTION FACTOR	Gauge DENSITY	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH	MAXIMUM HEIGHT	MAXIMUM LENGTH	MULTI-INCISION GOUGE				DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS
SEGMENT	KM	HOURS MINUTES SECONDS	M	KM	T	DOH	SUB	DOH	SUB	DOH	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (MM)	DOMINANT ORIENTATION (°)	M	M					
17 QR		1645.11	5.8	-	205	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	13.0	125	SEDIMENT WAVES				
18 RS		1651.4	5.0	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	SEDIMENT WAVES				
19 ST		1657.14	3.5	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-					
20 TU		1703.3	2.6	-	/	/	-	-	-	1	-	-	-	-	-	-	-	-	-	.3	-	.2		-	-	-	-	-	-	(NO SONAR THIS SEG.) FATHOMETER QUALITY POOR				
21 UV		1709.2	2.1	-	/	/	-	-	-	1	-	-	-	-	-	-	-	-	-	.2	-	.2		-	-	-	-	-	-	(NO SONAR THIS SEG.) FATHOMETER QUALITY POOR				
22 VW		1715.0	2.2	-	133	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-	FATHOMETER QUALITY POOR				
23 WX		1720.9	1.7	-	110	/	243	-	L	2	98	20	2	0	0	0	0	0	0	<.2	5	<.2		0	-	-	-	-	-	FATHOMETER QUALITY POOR SHOAL (1 METER FROM SURFACE)				
24 XY		1726.5	1.3	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-					
25 YZ		1731.8	2.1	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	-					
26 ZAA		1737.9	2.9	-	55	/	188	-	L	3	104	3.1	3	0	0	0	0	0	0	<.2	2	<.2		0	-	-	-	-	-					
27 AAB		1744.6	3.0	-	028	/	1	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	9.3						
28 BBC		1749.2	3.2	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.2						
29 CDD		1753.8	3.3	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	11.7						
30 DEL		1758.8	4.0	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	8.8						
31 EEL		1803.4	4.1	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	8.9						
32 FFG		1808.2	4.2	-	/	/	-	-	-	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	9.5						

1978

KARLUK

7.5 KTB

DATE		VESSEL		APPROX																										
256		TEMPLATE SIZE		7.5 KTS																										
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	BOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS											MULTI-INCISION COUGES					SOAR	RANGE	REMARKS
1 RM	HOURS MINUTES SECONDS	M	KM	°T	DOH	DOH	SUB	DOH	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	11	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER COUGE	MAXIMUM DISRUPTION (WIDEST M)	DOMINANT ORIENTATION (°T)	DEPTH TO FIRST REFLECTOR	M	M		
33	1822.7	5.9	-	028	45	73	-	L	4	113	45	4	0	0	0	0	0	1.2	6	1.2		0	-	-	-	-	125			
34	1817.4	5.7	-		45	73	-	L	3	113	3.4	2	1	0	0	0	0	1.2	5	1.2		0	-	-	-	-				
35	1822.2	6.9	-		85	113	-	L	1	98	1.0	1	0	0	0	0	0	1.2	2	1.2		0	-	-	-	-				
36	1826.9	8.0	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-	-				
37	1831.4	8.3	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-	-				
38	1836.1	7.7	-		75	103	-	L	3	97	2.9	3	0	0	0	0	0	1.2	2	1.2		0	-	-	-	-		SHOALS		
39	1840.5	7.2	-	240	25	265	-	L	2	154	3.1	2	0	0	0	0	0	1.2	2	1.2		0	-	-	-	-		SHOALS		
40	1845.7	8.0	-		145	025	-	L	5	128	6.4	5	0	0	0	0	0	1.2	2	1.2		0	-	-	-	-		SHOALS		
41	1849.9	7.9	-		170	050	-	L	1	238	2.4	1	0	0	0	0	0	1.2	3	1.2		0	-	-	-	14.9				
42	1854.1	8.8	-		55	295	-	L	6	104	6.2	6	0	0	0	0	0	1.2	4	1.2		0	-	-	-	14.4				
43	1858.0	8.3	-	340	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-	13.7				
44	1902.0	8.1	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-	-				
45	1906.4	8.3	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-	-		SHOALS		
46	1910.5	7.0	-	270	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-	-		SHOALS		
47	1914.7	4.2	-		160	070	-	L	1	1.73	1.7	1	0	0	0	0	0	1.2	2	1.2		0	-	-	-	-		SHOAL		
48	1918.8	7.0	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-	-				

TRACKLINE		ICE GOUGE DATA RECORD																				VESSEL		TEMPLATE SIZE				
37		1978																				KARLUK		7.5 KTS				
DATE	256	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGE				DEPTH TO FIRST REFLECTOR	SONAR RANGE	
SEGMENT	HOURS MINUTES TENTHS	M	KM	T	DOH	SUB	HIGH MED LOW	OB	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°)	M	M	REMARKS	
49	WVWXX	1923.0	6.6	-	270	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	-	-	-	13.6	125		
50	XKYY	1928.0	7.2	-	010	120	-	130	-	L	2	101	2.0	2	0	0	0	0	2	<2	0	-	-	-	13.7			
51	YYZZ	1932.3	7.0	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	15.5			
52	ZZAAA	1936.5	7.2	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-		SHOAL (3.7 METERS ABOVE SEA FLOOR)	
53	AAAB	1940.9	6.0	-	270	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-			
54	BBBCC	1945.2	7.3	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	12.1			
55	CCCD	1949.5	6.4	-	000	90	-	90	-	L	1	110	1.0	1	0	0	0	0	<2	3	<2	0	-	-	-	12.2		SHOAL
56	DDDEE	1951.2	7.9	-	-	110	-	110	-	L	2	98	2.0	2	0	0	0	0	<2	2	<2	0	-	-	-	12.6		SHOALS
57	EEEEFF	1959.0	7.5	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	-	-	-	13.7		(SEG. 5 KM - ADJUSTED TO 1 KM)	
END	FFF	2002.0	7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.5			
														</														

RTT-1000 & SIMRAD

ICE GOUGE DATA RECORD

1978

[illegible]

1978

KARLUK

7.5 KTC

DATE	TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GUDGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GULCH LENGTH	MULTI-INCISION NO.				DEPTH TO FIRST REFLECTOR	SOGAR RANGE	
SEGMENT	START TIME	M	KM	T	DGR	SUB	DOM	SUB	HIGH LOW	OBS	L	PAR KM	NMP	2-4	5-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GUDGE	MAXIMUM DISRUPTION WIDTH INCH	DOMINANT ORIENTATION (°)	M	M
17 QR	1654.8	9.0	-	335	/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	125
18 RS	1659.9	6.8	-		/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.7	
19 ST	1704.5	5.4	-	205	/	105	080	-	L	4	.97	3.9	4	0	0	0	0	0	<.2	2	<.2		0	-	-	-	10.7	
20 TU	1709.0	5.5	-		/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.1	
21 UV	1713.8	6.5	-		/	125	330	-	L	1	1.04	1.0	1	0	0	0	0	0	<.2	3	<.2		0	-	-	-	9.3	
22 VW	1719.3	8.2	-		/	120	325	-	L	3	1.01	3.0	2	1	0	0	0	0	.2	4	4		0	-	-	-	14.9	
23 WX	1724.2	7.3	-		/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.1	
24 XY	1729.0	5.8	-	187	/	55	242	-	L	1	1.04	1.0	1	0	0	0	0	0	<.2	6	<.2		0	-	-	-	10.4	
25 YZ	1733.8	5.0	-		/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	
26 ZAA	1738.5	4.5	-		/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	11.6	
27 AAB	1743.1	3.3	-	260	/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	11.6	
28 ABC	1749.7	3.1	-		/	20	280	-	L	1	.73	1.7	1	0	0	0	0	0	<.2	4	<.2		0	-	-	-	-	
29 CCDD	1752.3	4.0	-		/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	
30 DDEE	1759.0	4.2	-		/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	
31 EEFF	1801.4	4.5	-		/	DIC	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	
32 FF GG	1805.7	4.6	-		/	-	-	-	0	-	0		0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	

1978

KARLUK

7.5 KTO

TRACELINE		ICE GOUGE DATA RECORD																				1978		VESSEL KARLUK		TEMPLATE SIZE 7.5 HTS	
40		DATE 257		START TIME		START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE
SEGMENT	HOURS MINUTES SECONDS	M	KM	°T	DOH SUB	SUB	HIGH FREQ LOG	OBS	±	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°T)	M	M	
KM																											
33 GGHH	1810.2	5.0	-	010	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.9	125	
34 HH11	1815.0	5.4	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.8		
35 11JJ	1819.6	5.7	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.8		
36 JJKK	1824.0	5.9	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-		
37 KKLL	1828.8	6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.4	(NO SONAR THIS SEG.)	
38 LLMM	1833.2	6.5	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.9		
39 MMNN	1837.9	6.8	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	12.2		
40 NNOO	1842.1	6.5	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	11.4		
41 OOPP	1847.5	6.1	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	12.0		
42 PPQQ	1851.1	5.7	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-		
43 QQRR	1855.5	5.2	-	130	140	-	L	4	108	4.3	4	0	0	0	0	0	4.2	3	3		0	-	-	-	-		
44 RRSS	1900.0	4.5	-	249	281	-	L	6	128	7.7	5	1	0	0	0	0	.2	2	4		0	-	-	-	-		
45 SETT	1904.5	5.0	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-		
46 TTUU	1909.1	5.5	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-		
47 UUVV	1913.6	5.9	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-		
48 VVWW	1918.4	6.4	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.1		

1978

VESSEL	KARLUK
TEMPLATE SIZE	7.5 KTS

[illegible]

RTT-1000 + SIMRAD

ICE GOUGE DATA RECORD

1978

VESSEL	KARLUK
TEMPLATE SIZE	7.5 KTB

SEG SCALE 1:2899

TRACKLINE

41

ICE GOUGE DATA RECORD

1978

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SQUARE RANGE
SEGMENT	KM	FOOT METERS	M	KM	°T	DOM SUB	DOM SUB	HIGH REED SUB	CBS	L	PAR KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°T)	M	M			
1 AB	0730.0	6.4	-	215	75	-	290	-	L	6	.97	5.8	6	0	0	0	0	0	<.2	2	<.2	0	-	-	-	-	125			
2 BC	0734.5	8.5	-		70	-	285	-	L	5	.98	4.9	5	0	0	0	0	0	<.2	1	<.2	0	-	-	-	-				
3 CD	0738.8	8.1	-		55	-	270	-	L	2	.104	2.1	2	0	0	0	0	0	<.2	2	<.2	0	-	-	-	-				
4 DE	0743.3	7.0	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
5 EF	0747.9	6.3	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
6 FG	0752.5	6.2	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
7 GH	0757.0	5.2	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
8 HI	0801.5	4.8	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
9 IJ	0806.3	4.6	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
10 JK	0811.1	4.5	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
11 KL	0815.5	4.4	-	140	105	-	245	-	L	6	.97	5.8	6	0	0	0	0	0	<.2	5	.2	0	-	-	-	-				
12 LM	0819.9	5.1	-		105	-	245	-	L	9	.97	8.7	7	0	0	0	0	0	<.2	5	<.2	0	-	-	-	-				
13 MN	0824.2	4.8	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
14 NO	0828.5	4.8	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				
15 OP	0832.9	4.5	-	042	90	-	132	-	L	3	.100	3.0	2	1	0	0	0	0	.3	5	.2	0	-	-	-	-				
16 PQ	0837.7	5.0	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-				

REMARKS

(STEFFANSON SOUND)

1978

VESSEL	KARLUK
TEMPLATE SIZE	7.5 HTB

TRACELINE		ICE GOUGE DATA RECORD																				VESSEL		KARLUK					
DATE																						TEMPLATE SIZE		7.5 MTS					
257																													
SEGMENT																						MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR		SONAR RANGE	
KM	HOURS MINUTES TIME	M	KM	T	DOH SUB	DOH	SUB	VARIABLE	OBS	L	PRA KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH(M)	DOMINANT ORIENTATION (°)	M	M		
17 QR	0841.7	4.5	-	042	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125	(NO SONAR THIS SEG.)		
18 RS	0846.7	6.2	-	/	/	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-				
19 ST	0851.5	6.7	-	62	/	102	-	L	14	1.0	14.1	14	0	0	0	0	0	<.2	6	<.2		0	-	-	-				
20 TU	0856.2	6.8	-	80	/	122	-	L	11	.97	10.7	11	0	0	0	0	0	<.2	7	<.2		0	-	-	-				
21 UV	0900.9	6.8	-	75	/	117	-	L	26	.97	25.2	26	0	0	0	0	0	<.2	5	<.2		0	-	-	-				
22 VW	0905.6	6.8	-	55	/	97	-	L	7	1.04	7.2	7	0	0	0	0	0	<.2	2	<.2		0	-	-	-				
23 WX	0910.0	6.8	-	123	/	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-				
24 XY	0915.0	6.7	-	145	/	268	-	L	2	1.28	2.6	2	0	0	0	0	0	<.2	2	<.2		0	-	-	-	11.5			
25 YZ	0920.5	6.7	-	60	/	273	-	L	1	1.01	1.0	1	0	0	0	0	0	<.2	1	<.2		0	-	-	-	12.6			
26 ZAA	0925.5	6.5	-	40	/	253	-	L	3	1.2	3.6	3	0	0	0	0	0	<.2	2	<.2		0	-	-	-				
27 AABE	0930.6	-	-	70	/	283	-	L	2	.98	2.0	2	0	0	0	0	0	-	2	-		0	-	-	-		NO FATHOGRAM THIS SEGMENT AA NOT ON FATHOGRAM		
28 BECC	0935.7	6.1	-	/	/	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-				
29 CCDD	0940.9	6.0	-	/	/	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-				
30 EDEE	0946.3	5.8	-	/	/	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-				
31 EEFF	0951.5	5.6	-	325	/	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0		0	-	-	-				
32 FF-GG	0957.2	5.7	-	80	/	045	-		32	.97	31.0	32	0	0	0	0	0	<.2	5	<.2		0	-	-	-				

1978

VESSEL	KARLUK
TEMPLATE SIZE	7.5 KTB

TRACELINE		ICE GOUGE DATA RECORD																				VESSEL		KARLUK			
DATE																						TEMPLATE SIZE		7.5 KTB			
257																											
SEGMENT																											
KM	HOURS MINUTES CENTHES	M	KM	T	DON SUB	OCN	SUB	VARIABILITY HIGH MED LOW	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS						MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES			DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS	
									L	P/A KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (MM)	DOMINANT ORIENTATION (°T)	M	M	
33	GSHH	1002.4	5.8	-	325	120	160	085	125	M	14	1.09	14	0	0	0	0	<.2	11	<.2	0	-	-	-	-	125	
34	HH11	1008.2	5.5	-	160	-	125	-	L	4	1.13	6.9	4	0	0	0	0	<.2	2	.2	0	-	-	-	-		
35	11JJ	1013.8	5.5	-	135	-	100	-	L	5	1.13	5.7	3	2	0	0	0	.3	3	.2	0	-	-	-	-		
36	JJKK	1019.0	4.9	-	125	-	090	-	L	3	1.04	1.1	3	0	0	0	0	<.2	3	<.2	0	-	-	-	-		
37	KKLL	1024.4	5.0	-	125	-	090	-	L	7	1.04	7.3	7	0	0	0	0	<.2	4	<.2	0	-	-	-	-		
38	LLMM	1030.2	5.5	-	155	-	120	-	L	10	1.54	15.4	10	0	0	0	0	<.2	3	<.2	0	-	-	-	-		
39	MMNN	1035.6	5.6	-	140	-	105	-	L	33	1.20	39.6	31	2	0	0	0	.2	3	.3	0	-	-	-	-		
40	NNOO	1041.0	4.3	-	155	-	120	-	L	7	1.54	10.8	7	0	0	0	0	<.2	3	<.2	0	-	-	-	-		
41	OOPP	1046.2	4.6	-	150	-	115	-	L	6	1.38	8.3	5	1	0	0	0	.2	8	<.2	0	-	-	-	-		
42	PPQQ	1051.7	4.1	-	150	-	115	-	L	7	1.38	9.7	7	0	0	0	0	<.2	3	<.2	0	-	-	-	-		
43	QQR	1053.9	4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	NO SONAR THIS SEG.	
44	RSS	1102.1	4.9	-	305	130	075	-	L	2	1.08	2.2	2	0	0	0	0	<.2	2	<.2	0	-	-	-	-		
45	SOOT	1108.4	-	-	15	-	320	-	L	7	2.0	14.0	-	-	-	-	-	-	2	-	0	-	-	-	-	NO FATHOGRAM THIS SEGMENT	
46	TTUU	1113.3	-	-	150	-	095	-	L	2	1.38	2.8	1	1	0	0	0	.2	3	.2	0	-	-	-	-	NO FATHOGRAM FOR FIRST HALF OF THIS SEGMENT	
47	UVVV	1118.6	6.0	-	150	-	095	-	L	3	1.38	4.1	2	1	0	0	0	.2	3	<.2	0	-	-	-	-		
48	VVWW	1124.0	6.4	-	100	-	105	-	L	10	1.73	17.3	9	1	0	0	0	.3	3	<.2	0	-	-	-	-		

TRACELINE

41

ICE GOUGE DATA RECORD

1978

VESSEL KARLUK
TEMPLATE SIZE 7.5 HTS

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH	MAXIMUM INCISION HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SOAR RANGE
SEGMENT	KM	M	KM	T	DOM SUB	DOM SUB	HIGH MED LOW	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION	M	M				
49 WWXX	1120.0	6.6	-	305	130	075	-	L	3	108	3.2	3	0	0	0	0	0	<.2	2	<.2	0	-	-	-	-	125				
50 XXYY	1135.4	6.0	-		155	100	-	L	4	154	6.2	4	0	0	0	0	0	<.2	5	<.2	0	-	-	-	-					
51 YYZZ	1140.8	6.1	-		25	330	-	L	1	154	1.5	1	0	0	0	0	0	<.2	2	<.2	0	-	-	-	-					
52 ZZAA	1145.9	5.3	-		165	110	-	L	1	200	2.0	1	0	0	0	0	0	<.2	1	<.2	0	-	-	-	-					
53 AAABBB	1151.2	5.6	-		165	110	-	L	1	200	2.0	1	0	0	0	0	0	<.2	5	<.2	0	-	-	-	-					
54 BBBCCC	1156.6	6.3	-		-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-					
55 CCDDDD	1202.0	5.9	-		-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-					
56 DDDEEE	1207.2	6.0	-		-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-					
57 EEEEFF	1212.8	6.4	-		155	100	-	L	1	154	1.5	1	0	0	0	0	0	<.2	1	<.2	0	-	-	-	-					
58 FFFGGG	1218.2	6.3	-		-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-					
59 GGGHHH	1223.5	6.3	-	210	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-					
60 HHHHII	1229.3	5.8	-		80	290	-	L	2	197	1.9	2	0	0	0	0	0	<.2	4	<.2	0	-	-	-	-					
61 IIJJJJ	1234.2	5.1	-		55	265	-	L	9	101	3.4	7	1	1	0	0	0	.5	4	.2	0	-	-	-	-					
END JJJJ	1239.2	4.8	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					

SMALL SEDIMENT WAVES

SMALL SEDIMENT WAVES

SMALL SEDIMENT WAVES

SMALL SEDIMENT WAVES

SMALL SEDIMENT WAVES

1977

TRACKLINES

"TEST" LINE II

SEGMENT SCALE 1:1524

ICE GOUGE DATA RECORD

1977

VESSEL	KARLUK
TEMPLATE SIZE	4.5 676

SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SOURCE RANGE	REMARKS
											NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISBURSION WIDTH M	DOMINANT ORIENTATION			
AB 1	1100.0	7.4	1.0	358	65	063	-	L	39.99	38.16	38	1	0	0	0	0	.3	6	.4		0	-	-	-	-	125	NO SUBBOTTOM SIGNAL (7 KH)
BC 2	1107.0	10.3	2.0		65	063	-	L	69.99	68.13	52	17	0	0	0	0	.3	5	.4		0	-	-	-	-		
CD 3	1114.6	11.7	3.0		65	063	-	L	52.99	51.15	46	6	0	0	0	0	.3	7	.2		0	-	-	-	-		TICK MARKS (1) 06.0.052°T L=2.50M W=9M
DE 4	1122.0	11.7	4.0		90	088	048	L	91.100	91.10	80	11	0	0	0	0	.2	7	.1		0	-	-	-	-		2.5 M SHOAL - HEAVY GROUTING ON CREST.
EF 5	1129.3	12.4	5.0		80	078	053	L	83.99	80.15	73	8	2	0	0	0	.4	5	.8		1	2	21	013	-		SEDIMENT WAVES (DECEASED) ALL YEARS, ORIENT. OF CRUSTS - 020.5°T 1 METER SIGNAL - 1 METER DEEP WITHOUT AN ELEVATED END WITH JAMMED WAX AT BOTTOM
FG 6	1137.1	13.6	6.0		65	063	088	L	62.99	61.14	52	9	0	1	0	0	.6	10	.7		1	2	21	013	-		GOUGES VERY SUBMERSED ON RECORDS.
GH 7	1144.5	14.4	7.0		80	078	118	L	48.99	46.16	41	7	0	0	0	0	.2	8	.2		2	2	12	118	-		GOUGE TERMINATIONS - BUT - PARALLEL (3)
HI 8	1152.0	15.2	8.0		100	098	073	L	37.99	35.19	31	5	1	0	0	0	.4	11	.3		2	2	20	168	-		3.5 M SHOAL - HEAVY GROUTING ON CREST. GOUGE (PARALLEL) CHANGE TO SEAWARD OF SHOAL.
IJ 9	1159.2	14.7	9.0		60	058	098	L	73.101	73.17	53	12	5	3	0	0	.7	6	.5		5	3	14	058	-		
JK 10	1206.4	14.6	10.0		105	103	068	L	80.99	77.16	67	8	5	0	0	0	.5	11	.7		4	9	36	038	-		
KL 11	1213.7	15.5	11.0		115	113	063	L	91.99	93.11	88	6	0	0	0	0	.3	12	.3		3	20	92	133	-		1.0 M SHOAL - FOOT AND EFFUSION RIDGE SPOKE
LM 12	1220.9	16.0	12.0		115	113	013	L	39.99	38.16	28	9	2	0	0	0	.5	10	.4		3	2	20	018	-		
MN 13	1229.8	16.7	13.0		110	108	028	L	48.98	47.10	35	12	0	0	1	0	.8	6	.1		2	5	22	028	-		2 GOUGE TERMINATIONS - BUT - TUSH 10/11
NO 14	1234.8	17.8	14.0		110	108	048	L	39.98	38.12	15	21	1	1	0	1	1.0	4	.6		3	4	30	018	-		
OP 15	1241.9	18.1	15.0		100	098	153	L	34.99	33.10	23	10	1	0	0	0	.4	7	.7		0	-	-	-	-		
PQ 16	1244.9	18.8	16.0		110	108	-	L	20.98	19.14	11	5	1	0	0	0	.5	6	.6		0	-	-	-	-		

1977

1977

KARLUK

4.5 KTS

REMARKS

4 MINUTES OF SONAR MISSING - COUNT
CORRECTED TO 1 AM.

[illegible]

[illegible]

"TEST" LINE I

SEG SCALE 1:1524

ICE GOUGE DATA RECORD

1977

VESSEL

KARLUK

TEMPLATE

4.5 KTB

TRACELINE		ICE GOUGE DATA RECORD													1977		SEG SCALE 1/1521													VESSEL		KARLUK	
DATE																												TEMPLATE		4.5 KTS			
2/14																																	
SEGMENT																																	
KM																																	
HOURS																																	
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TRACK/LINE
 35

ICE GOUGE DATA RECORD

1977

DATE	START TIME	START DEPTH	DISTANCE COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	SUNBER	CONNECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM RIDGE LENGTH	MULTI-INCISION GOUGES					DEPTH TO FIRST REFLECTOR	SONAR RANGE
SEGMENT	TIME	M	KM	°T	DOM	SUB	HIGH	085	L	PER	NMP	2-4	4-6	6-8	8-10	10	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION	M	M	
QR 17	1229.6	4.6	17.0	305	155/130	100	075	L	117	154	180	106	8	3	0	0	0	.4	10	.4	6	9	37	105	-	125	
RS 18	1237.4	14.9	18.0		135/160	080	105	M	97	113	109	86	9	2	0	0	0	.5	12	.8	7	4	18	105	-		
ST 19	1244.9	15.3	19.0		140/105	085	050	H	88	120	105	77	7	4	0	0	0	.5	7	.6	7	3	18	090	-		
TU 20	1252.5	15.4	20.0		150/115	195	060	H	116	138	160	109	6	1	0	0	0	.5	8	.5	8	3	27	100	-		
UV 21	1300.1	15.8	21.0		140/165	085	110	M	123	120	147	110	11	1	1	0	0	.6	12	1.1	10	6	28	320	-		
VW 22	1307.6	15.9	22.0		125/150	070	095	L	112	104	116	89	21	1	1	0	0	.6	16	.5	5	5	32	090	-		
WX 23	1315.6	16.2	23.0		140/160	085	105	L	115	120	138	102	13	0	0	0	0	.3	8	.5	4	5	22	105	-		
XY 24	1323.3	16.4	24.0		140/165	085	110	M	121	120	145	110	10	1	0	0	0	.4	9	.5	4	6	20	100	-		
YZ 25	1330.5	16.5	25.0		140/160	085	105	L	112	120	134	98	12	2	0	0	0	.5	7	.5	4	4	15	115	-		
Z END	1337.9	16.5	26.0																								

VESSEL	KARLUK
TEMPLATE SIZE	45 KTB

REMARKS

 NO SUBBOTTOM SIGNAL (7KH)
 TICK MARKS (1) ORIENT: 100°T L = 230 M
 W = 7 M

 (.5 M SHOAL) TIC MARKS (3) ORIENT: 085°T
 L = 300 M W = 5 M

 TICK MARKS (3) ORIENT: 100°T L = 300 M
 W = 4 M

 TICK MARKS (2) ORIENT: 090°T L = 395 M
 (ORIENT: 085°T) W = 4 M
 PRESSURE RIDGE 200R (22 INCISIONS - 130 M WIDE)
 TICK MARKS (1) ORIENT: 110°T L = 100 M
 W = 5 M
 PRESSURE RIDGE SCOUR SAME AS ABOVE

[illegible]

RTT - 1000

TRACELINE		ICE GOUGE DATA RECORD															1977										SEGMENT SCALE 1:1106										VESSEL		KARLUK		
DATE		216		TESTLINE IV		1977																				TEMPLATE SIZE		4.0 KTS													
SEGMENT		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GOUGES		DEPTH TO FIRST REFLECTOR		SONAR RANGE		REMARKS							
KM		HOURS MINUTES SECONDS		M		KM		°T		DOM SUB		DOM SUB		OBS		L		NMP 2-4 4-6 6-8 8-10 >1 MAX M M M										NUMBER		MAXIMUM INCISIONS PER GOUGE		MAXIMUM DISRUPTION WIDTH M		DOMINANT ORIENTATION		M		M			
AB 1		1345.0		3.1		1.1		027		45/35		072 062		L		33 113		37/13 33 0 0 0 0 0 0 <.2 3 <.2										0		-		-		-		125		SONAR RANGE DEFINITION ONLY 50 M			
BC 2		1353.7		5.2		2.0				50/35		077 062		L		27 108		29/12 26 1 0 0 0 0 0 .2 3 .2										3		5		10		077		8.8					
CD 3		1402.4		6.4		3.1				25/45		052 072		L		8 154		12/13 8 0 0 0 0 0 0 <.2 2 <.2										0		-		-		-		10.2		75 M			
DE 4		1411.4		7.8		4.1				45/-		072 -		L		14 113		15/18 14 0 0 0 0 0 0 <.2 3 <.2										0		-		-		-							
EF 5		1420.1		8.9		5.2				45/65		072 092		L		37 113		41/18 35 1 1 0 0 0 0 .5 5 .7										0		-		-		-		13.1					
FG 6		1428.8		9.8		6.1				45/70		072 097		M		67 113		75/17 60 4 2 1 0 0 0 .7 10 .6										3		5		13		072		14.0					
GH 7		1437.1		10.5		7.1				60/135		087 162		M		79 101		79/18 73 6 0 0 0 0 0 .4 13 .6										4		5		15		162		15.2					
HI 8		1445.6		11.2		8.2				60/135		087 162		M		93 101		93/19 82 8 3 0 0 0 0 .5 8 .5										2		3		10		062		16.0		2 GOUGE TERMINATIONS			
IJ 9		1453.8		12.0		9.1				65/35		092 062		M		87 99		86/11 74 5 5 1 2 0 0 .8 8 .7										2		2		5		167		16.5		SEGMENT SONAR < 1 KM, COUNT ADJUSTED RIPPLE MARK (3) ORIENT 097°T L=50M W=70			
JK 10		1502.3		12.8		10.1				70/135		097 162		M		99 98		97/10 61 19 10 3 2 2 1.3 8 1.2										7		6		32		162		17.9					
KL 11		1509.8		13.7		11.1				55/20		082 047		M		113 104		117/15 72 25 13 3 0 0 .7 8 .7										2		8		25		082		18.7					
LM 12		1517.5		14.3		12.1				70/60		097 087		L		146 98		143/11 106 29 9 2 0 0 .7 10 1.2										2		3		10		092		21.0		RIPPLE MARKS (1) ORIENT 107°T L=25M W=3M			
MN 13		1525.1		14.8		13.1				65/50		092 077		M		115 99		113/19 75 23 13 4 0 0 .6 8 1.0										3		6		20		167		19.2					
NO 14		1532.5		15.2		14.1				85/45		112 072		M		156 98		152/19 103 29 16 7 1 0 .9 10 1.7										8		22		75		072		20.0					
OP 15		1539.8		15.8		15.1				65/20		092 047		H		104 99		103/10 69 24 9 1 1 0 .9 15 1.0										7		11		42		092		20.0					
PQ 16		1547.2		16.7		16.1				70/30		097 057		H		147 98		144/11 96 21 15 12 2 1 1.5 13 1.2										10		9		39		072		23.1		RIPPLE MARKS (2) ORIENT 087°T L=125M W=10M			

1977

VESSEL	KIRLUK
TEMPLATE SIZE	4.0 KTB

[illegible]

[illegible]

R77-1000

ICE GOUGE DATA RECORD

1977

SEGMENT SCALE 1:1524

VESSEL	KARLUK
TEMPLATE SIZE	4.5 HTR

TRAILER LINE		ICE GOUGE DATA RECORD																				1977						SEGMENT SCALE 1:1524						VESSEL		KARLUK	
DATE																																		TEMPLATE		415 KTB	
216																																					
SEGMENT																																					
KM	HOURS MINUTES SECONDS	M	KM	*T	DON SUB	DOM	SUB	HIGH MOD LOW	OBS	L	PRA KM	NMP	2-9	1-6	6-8	8-10	>1	MAX	M	M	M	MULTI-METERING GOUGES				DEPTH TO FAST REFLECTOR	SOURCE RANGE	REMARKS									
																						NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISCUSSION WIDTH	MAXIMUM DISCUSSION LENGTH												
AB	1	1908.0	13.7	11.7	230	30	100	260	330	M	148	138	204	107	28	9	4	0	0	.6	6	1.0	3	4	10	250	-	125									
BC	2	1915.2	12.8	11.0		45	30	295	260	M	149	113	213	123	33	21	12	0	0	.8	20	.9	5	4	20	245	-	/									
CD	3	1922.4	12.0	10.5		45	20	295	250	L	174	113	196	105	48	18	3	0	0	.6	10	.8	7	6	15	035	-										
DE	4	1929.6	11.5	9.9		45	175	215	045	L	127	113	143	67	54	5	1	0	0	.6	4	.5	4	9	30	045	17.2										
EF	5	1936.8	11.1	9.4		40	10	270	240	L	128	120	153	93	32	3	0	0	0	.4	3	.5	3	13	30	240	17.0										
FG	6	1944.0	10.6	9.0		40	60	270	290	L	121	120	145	89	28	4	0	0	0	.5	3	.5	5	3	10	270	-										
GH	7	1951.2	10.1	8.5		45	15	275	245	L	147	113	166	117	30	0	0	0	0	.3	3	.2	3	2	8	250	-										
HI	8	1958.4	9.4	8.1		40	25	270	255	L	119	120	142	98	21	0	0	0	0	.2	3	.3	4	4	15	245	-		TICK MARKS(1) ORIENT. 290° P L=100M W=3 M								
IJ	9	2005.6	8.8	7.9		35	20	265	250	L	97	128	124	86	11	0	0	0	0	.2	2	<.2	4	5	10	245	12.7										
JK	10	2012.8	7.7	7.6		40	25	270	255	L	145	120	174	133	12	0	0	0	0	.2	2	<.2	3	2	5	250	11.6										
KL	11	2020.0	6.4	6.6		40	-	270	-	L	60	120	72	50	10	0	0	0	0	.2	2	<.2	1	2	5	270	14.0		SONAR QUALITY POOR - NUMBERS MAY NOT BE REPRESENTATIVE OF THIS SEGMENT								
LM	12	2027.2	5.5	5.6		10	-	240	-	L	21	238	50	19	2	0	0	0	0	.2	1	<.2	1	7	20	240	9.5										
MN	13	2034.4	4.7	4.7		155	-	025	-	L	2	154	31	2	0	0	0	0	0	<.2	1	<.2	0	-	-	-	10.0										
NO	14	2041.6	3.7	3.7		20	-	250	-	L	14	173	24	12	2	0	0	0	0	.2	1	<.2	0	-	-	-	9.7										
OP	15	2048.8	2.9	2.9		15	-	245	-	L	11	200	22	11	0	0	0	0	0	<.2	1	<.2	0	-	-	-	8.2										
P	END	2056.0	2.3	2.2																																	

RTT 00

TRACE LINE		ICE GOUGE DATA RECORD																				VESSEL		TEMPLATE		SEG. SCALE		REMARKS																			
41		1977																				KARLUK		4.5		1:1524																					
DATE		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF INCISIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH		MAXIMUM WEIGHT		MAXIMUM LENGTH		MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR		Slope		Rel. Slope	
217		M		M		KM		°T		°		°		°		OBS		L		PER KM		NMP 2-4 4-6 6-8 8-10 >1 MAX										M		M		M		NUMBER MAXIMUM INCISIONS PER GOUGE MAX SUM DIS. (IN) MAX. (IN) DOMINANT ORIENTATION (°)				M		M			
SEGMENT		KM		M		KM		°T		°		°		°		OBS		L		PER KM																											
AB		0828.0		3.2		0.3		320		10		330		L		2		2.38		4.8		2 0 0 0 0 0 2.4 1 4.4 60 0 - - -										1		4.4		60		0 - - -				11524		125		WAVE ACTION OF .4M LIMITS RESOLUTION OF GOUGES TO >.4M	
BC		0835.2		4.2		1.3								0		0		0		0		0 0 0 0 0 0 0 0 0 0 0										0		0		0		0 - - -									
CD		0842.4		5.1		2.3								0		0		0		0		0 0 0 0 0 0 0 0 0 0 0										0		0		0		0 - - -									
DE		0849.6		5.9		3.0		135		95		L		10		1.13		11.3		10		0 0 0 0 0 0 2.4 2 4.4 65 0 - - -										2		4.4		65		0 - - -									
EF		0856.8		6.4		4.4		140		100		L		23		1.20		27.6		23		0 0 0 0 0 0 2.4 2 4.4 95 0 - - -										2		4.4		95		0 - - -									
FG		0904.0		6.9		5.1		130		90		L		8		1.08		8.6		4		0 0 0 0 0 0 2.4 2 4.4 75 0 - - -										2		4.4		75		0 - - -									
GH		0911.2		7.1		6.4		130		90		L		11		1.08		11.9		2		7 2 0 0 0 .5 8 4.2 110 1 3 10 115 -										8		4.2		110		1 3 10 115									
HI		0918.4		7.9		7.4		130		90		L		45		1.08		4.8		27		16 1 1 0 0 .7 2 4.2 250 0 - - -										2		4.2		250		0 - - -									
IJ		0925.6		8.6		8.6		125		85		L		127		1.04		132.1		77		43 7 0 0 0 .4 6 .4 400 3 4 6 120 -										6		.4		400		3 4 6 120									
JK		0932.8		9.3		7.6		115		75		L		125		.99		123.6		77		39 9 0 0 0 .6 3 .5 310 5 3 6 100 -										3		.5		310		5 3 6 100									
KL		0940.0		10.0		10.0		125		85		L		156		1.01		162.2		86		42 19 9 0 0 .8 8 .6 365 6 4 18 120 -										8		.6		365		6 4 18 120									
LM		0947.2		10.5		11.0		30		350		M		174		1.38		240.1		96		46 19 11 1 1 1.1 6 .5 360 6 6 17 360 -										6		.5		360		6 6 17 360									
MN		0954.4		10.9		12.4		130		70		H		172		1.08		185.8		115		44 10 3 0 0 .7 8 .5 425 3 5 22 90 -										8		.5		425		3 5 22 90									
NO		1001.6		11.6		13.9		130		90		H		222		1.04		240.8		163		40 16 4 0 0 .6 10 .9 300 4 2 12 90 -										10		.9		300		4 2 12 90									
OP		1008.8		12.3		14.3		120		80		H		245		1.01		247.5		142		49 33 17 4 0 1.0 3 .7 500 4 4 15 100 -										3		.7		500		4 4 15 100									
PQ		1016.0		12.8		16.1		130		90		H		173		1.04		186.8		94		41 25 11 2 0 .8 6 .9 475 7 9 25 100 -										6		.9		475		7 9 25 100									

1977

VESSEL	KARLUK
TEMPLATE SIZE	4.5 KTG.

[illegible]

[illegible]

RTT-150

ICE GOUGE DATA RECORD

1977

VESSEL KARLUK

TEMPLATE SIZE	4.5" KTB
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SEG. SCALE 1:1524

TRAVERSE		ICE GOUGE DATA RECORD															1977		VESSEL KARLUK		TEMPLATE SIZE 4.5 KTB		SEG. SCALE 1:1524						
DATE	TIME	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	DEVELOPED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	SURGER INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH (CM)	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	DATE	TIME
SEGMENT	TIME	M	KM	°T	°S	°S	°S	°S	°S	°S	°S	°S	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DEPTH (WIDT HCN)	DOMINANT ORIENTATION (°T)	M	M	
AB	1052.0	15.5	16.3	220	70	35	290	255	M	112	.98	109	62	13	14	12	8	3	1.1	13	1.0	450	4	3	12	10	-	12.5	
BC	1059.2	15.0	19.5		70	45	290	265	H	117	.98	116	54	29	12	11	5	0	1.7	15	1.3	1000	3	4	33	215	-		
CD	1106.4	14.5	14.7		60	120	280	340	H	121	1.01	122	55	27	18	9	8	4	2.2	8	1.5	1025	3	3	15	235	-		
DE	1113.6	14.2	14.1		50	30	290	250	M	107	1.08	115	58	35	8	2	3	1	1.5	6	1.4	1000	3	5	27	240	-		
EF	1120.8	13.5	13.4		60	15	280	235	L	119	1.01	120	51	30	13	5	0	0	.7	8	.8	1000	4	4	35	220	-		
FG	1128.0	13.0	12.7		50	65	270	285	M	97	1.08	104	57	28	5	3	1	2	1.2	10	.8	510	5	4	10	270	210		
GH	1135.2	12.5	12.0		55	120	275	340	H	114	1.04	118	72	28	7	4	1	2	1.3	18	1.0	500	4	4	50	25	18.8		
HI	1142.4	11.8	11.4		55	145	275	05	H	139	1.04	144	92	27	8	6	3	3	1.5	5	1.2	600	2	3	55	30	18.6		
IJ	1149.6	11.3	10.9		50	25	270	245	M	131	1.08	141	74	44	12	1	0	0	.7	5	.9	250	3	4	9	270	19.5	GOUGE TERMINATIONS (R)	
JK	1156.8	10.8	10.3		60	25	280	245	L	109	1.01	110	49	44	14	2	0	0	.7	5	.7	1000	2	2	13	230	17.2	TICK MARKS: ORIENT = 280°T L = 60M W = 3M	
KL	1204.0	10.5	9.9		45	20	265	240	M	142	1.13	160	80	47	9	5	1	0	.8	8	.6	350	3	3	7	250	18.0	TICK MARKS: ORIENT = 280°T L = 50M W = 2M	
LM	1211.2	9.7	9.6		55	25	275	245	H	105	1.04	109	46	43	13	1	2	0	.9	8	.5	355	1	2	3	220	18.8		
MN	1218.4	9.3	9.0		55	25	275	245	M	108	1.04	112	68	31	7	1	1	0	.8	5	.6	375	4	3	3	240	18.8		
NO	1225.6	9.1	8.5		35	60	255	280	L	113	1.28	144	95	13	4	1	0	0	.7	3	.4	700	2	3	5	240	-	RESEGMENT FIGURE 2 ADJUSTED TO 1 KM - INFORMATION GAP BETWEEN BATHTHERM AND SURFACE IN THIS SEG.	
OP	1232.8	8.7	8.1		40	20	260	240	L	93	1.20	111	76	15	2	0	0	0	.5	3	.2	275	3	3	9	10	-		
PQ	1240.0	8.3	7.7		40	10	260	230	L	89	1.21	106	67	18	4	0	0	0	.5	4	.2	300	4	3	12	250	13.4		

1977

VESSEL	KARLUK
TEMPLATE SIZE	4.5 HTO

[illegible]

[illegible]

RTT-1000

ICE GOUGE DATA RECORD

1977

TRACELINE		ICE GOUGE DATA RECORD														1977		VESSEL		KARLUK		TEMPLATE SIZE		3.4 KTS		SEG. SCALE		1:977		REMARKS	
DATE	25/	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE	
SEGMENT	KM	MINUTES	M	KM	°T	DOM	SUB	°	OB	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION DISTANCE	DOMINANT ORIENTATION	M	M				
AB	1	1441.0	17.2	7.7	357	65/90	62	87	L	99	.99	98.0	14	69	12	4	0	0	.7	8	1.1	280	2	2	12	37	23.5	125	TICK MARKS (5) ORIENT: 77°T L: 120M W: 5M		
BC	2	1449.3	18.7	8.5		50/115	47	112	M	105	1.08	113.4	12	68	24	1	0	0	.6	5	.7	225	3	5	17	69	24.4		TICK MARKS (5) ORIENT: 89°T L: 45M W: 12M		
CD	3	1457.5	19.2	9.3		60/105	57	102	L	102	1.01	103.3	6	75	21	0	0	0	.5	10	.8	300	2	2	5	52	25.4				
DE	4	1506.9	20.4	10.2		50/130	47	127	L	90	1.08	97.2	11	76	3	0	0	0	.5	5	.5	132	0	-	-	-	27.5		TICK MARKS (7) ORIENT: 84°T L: 250M W: 10M		
EF	5	1516.2	21.6	11.0		90/130	87	127	L	48	1.00	49.0	13	28	7	0	0	0	.6	5	.4	265	0	-	-	-	28.4		SEG. COVERAGE FOR PATHOGRAM APPROX. .5 KM (ORIENTATION MAY ACCOUNT FOR LOW NUMBER OF OBSERVED GOUGES)		
FG	6	1525.7	-	12.0		90/125	87	122	L	58	1.00	58.0	0	53	5	0	0	0	.6	6	.8	305	2	5	35	142	-		PT. F NOT ON PATHOGRAM SEG. COVERAGE FOR PATHOGRAM APPROX. .75 KM (ORIENT. & LOW NUMBERS?)		
GH	7	1535.3	22.3	13.0		90/-	87	-	L	62	1.00	62.0	0	59	3	0	0	0	.5	6	-	250	1	2	3	137	-		TICK MARKS (4) ORIENT: 89°T L: 120M W: 7M PATHOGRAM QUALITY POOR		
HI	8	1549.5	22.2	14.0		90/60	87	57	L	86	1.00	86.0	38	45	3	0	0	0	.5	11	.5	250	2	2	7	22	-		TICK MARKS (2) ORIENT: 89°T L: 75M W: 7M PATHOGRAM QUALITY POOR		
IJ	9	1554.1	23.1	15.0		90/60	87	57	L	94	1.00	94.0	39	40	15	0	0	0	.7	12	.8	295	3	3	36	59	29.3		PATHOGRAM QUALITY POOR		
JK	10	1603.0	22.7	16.0		90/135	87	132	L	77	1.00	77.0	27	38	12	0	0	0	.6	10	.6	335	4	4	14	32	29.4		PATHOGRAM QUALITY POOR		
KL	11	1611.8	23.5	16.8		130/90	127	87	L	95	1.08	102.6	17	68	10	0	0	0	.7	4	.7	420	2	3	34	97	31.5				
LM	12	1621.4	23.7	17.9		90/-	87	-	L	69	1.00	69.0	6	50	13	0	0	0	.7	7	.6	290	0	-	-	-	28.6				
MI	13	1630.3	24.0	18.8		90/130	87	127	L	101	1.00	101.0	25	62	14	0	0	0	.5	5	.6	275	2	4	37	127	28.1		TICK MARKS (5) ORIENT: 87°T L: 270M W: 9M		
NO	14	1639.2	24.1	19.8		100/90	97	87	L	119	.97	115.4	41	57	21	0	0	0	.6	6	1.0	275	0	-	-	-	28.5				
OP	15	1648.5	24.1	20.8		90/60	87	57	L	126	1.00	126.0	45	58	19	2	2	0	1.0	4	1.1	290	2	3	20	67	28.8		.5 KM SEG. OF SONAR COAST-ADJ. TO 1 KM. TICK MARKS (1) ORIENT: 102°T L: 16.5M W: 5M		
PQ	16	1657.1	23.3	21.7		60/80	57	77	M	147	1.01	148.5	32	32	20	11	2	0	.8	15	1.0	265	6	3	28	47	-				

TRACELINE		ICE GOUGE DATA RECORD																				VESSEL		TEMPLATE SIZE								
66		1977																				KARLUK		3.4 XTB.								
DATE		START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM CANYON LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SOUND RANGE	REMARKS	
251												NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M				NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION				M
SEGMENT	KM	HOURS MINUTES TENTHS	M	KM	°T	DIR SUB	DOM SUB	DIR SUB	OBS	±	PER KM																					
QR 17	1706.6	21.7	22.7	357	55/90	52	87	H	182	104	139	65	58	32	10	10	7	1.8	7	16	290	10	4	48	62	-	125	-	-	-	-	PASSED OVER SHOAL
RS 18	1717.3	26.5	23.7		90/125	87	122	H	140	100	140	15	43	38	13	17	14	1.7	6	13	305	7	5	52	17	-		-	-	-	-	
ST 19	1726.6	27.5	24.7	150	145/10	295	160	M	125	128	160	25	54	32	8	4	2	1.1	8	12	250	7	17	150	300	-		-	-	-	-	
TU 20	1733.9	27.3	24.7		135/90	285	240	M	147	113	166	30	37	38	16	13	13	1.6	7	13	350	8	7	45	310	-		-	-	-	-	
UV 21	1742.7	27.0	23.7		130/90	280	240	M	142	108	153	59	27	29	12	7	8	2.4	8	12	250	5	7	43	285	-		-	-	-	-	
VW 22	1750.0	24.9	22.8		145/90	295	240	M	127	128	162	5	35	40	24	10	13	1.5	8	13	250	9	6	48	295	-		-	-	-	-	SOME GOUGES PASSE AT 90° TO SHIP'S HEADING HAVE GOOD RELIEF IN THE TROUGH.
WX 23	1759.1	26.3	21.9		140/90	290	240	M	131	120	157	24	56	35	7	9	2	1.1	13	1.8	250	3	4	31	295	-		-	-	-	-	
XY 24	1808.5	23.7	20.9		90/125	240	275	M	139	100	139	37	31	22	23	10	4	1.3	5	1.3	260	3	2	7	290	-		-	-	-	-	
YZ 25	1816.1	25.5	20.0		90/130	240	280	L	110	100	110	30	45	23	12	0	0	.8	12	1.0	302	0	-	-	-	-		-	-	-	-	
ZPA 26	1824.5	24.8	19.1		55/130	205	280	H	92	104	95	12	38	21	10	7	4	1.2	18	.8	365	2	3	30	290	-		-	-	-	-	THIS IS STILL A DEFINITE 90° ORIENTATION TO SHIP'S COURSE ALSO
AAEB 27	1833.4	25.0	18.1		130/160	280	310	L	101	108	109	32	55	13	1	0	0	.6	30	.6	320	5	6	35	310	29.8		-	-	-	-	LARGE AREA GOUGES BY PRESSURE FIELD (~175M WIDE)
BUCC 28	1841.6	24.5	17.1		135/90	285	240	L	98	113	99	33	48	6	1	0	0	.6	33	.8	310	3	6	40	285	28.5		-	-	-	-	
CCUL 29	1850.7	24.5	16.2		130/90	280	240	L	67	108	72	14	49	3	1	0	0	.6	5	.6	305	4	4	25	280	-		-	-	-	-	
DJEE 30	1858.9	24.5	15.2		125/90	275	240	L	74	104	77	27	44	3	0	0	0	.5	6	.8	320	0	-	-	-	-		-	-	-	-	SEG .5 KM - ADJUSTED TO 1 KM ON SONAR
EEFF 31	1907.4	23.5	14.2		125/150	275	300	L	113	104	117	55	47	4	0	0	0	.5	12	1.1	330	1	3	38	270	29.1		-	-	-	-	SEGMENT .15 KM - ADJUSTED TO 1 KM PT. EE NOT ON SONAR RECORD. 7 KM RETURN SHOWS DEEPER BEDDING. PRESSURE M. FOR REMAINING OVER MOST OF THIS SEGMENT
FFGG 32	1916.1	23.0	13.3		120/140	270	290	L	100	108	108	50	43	6	1	0	0	.7	6	.6	320	1	2	8	310	28.7		-	-	-	-	

1977

VESSEL	KARLUK
TEMPLATE SIZE	3.4 HTS

DATE		INCISION DEPTH DISTRIBUTION METERS															MULTI-INCISION COUBES				REMARKS							
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	COUSE DENSITY								MAXIMUM INCISION WIDTH	MAXIMUM HEIGHT	MAXIMUM LENGTH	NUMBER	MAXIMUM INCISIONS PER COUSE	MAXIMUM DISTANCE (M)	DOMINANT ORIENTATION (°)	DEPTH TO FIRST REFLECTOR	SOUND RANGE		
KM	HOURS MINUTES TENTH	M	KM	°T	°SUB	DOM	SUB	°L	°SUB	°L	KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M				M	M		
GGHH 33	1924.5	23.1	12.3	138	130/160	268	298	L	96	108	103.7	36	55	5	0	0	0	.5	5	.5	335	1	2	5	298	28.8	125	
HHII 34	1932.5	23.0	11.6		130/100	268	238	L	62	108	67.0	19	40	3	0	0	0	.5	5	.3	315	0	-	-	-	29.3		
IIJJ 35	1941.4	23.0	10.7		135/85	273	223	L	72	113	81.4	42	27	3	0	0	0	.5	7	.2	320	3	9	85	278	27.8		
JJKK 36	1950.0	22.8	10.0		140/90	278	228	L	119	122	142.8	61	54	4	0	0	0	.5	15	.4	340	3	21	100	278	26.5	2 LARGE PRESSURE RIDGES IN SEGMENT ACCOUNT FOR HIGH DENSITY TICK MARKS (1) ORIENT. 228°T L=58M W=18M	
KKLL 37	2000.0	22.0	9.1		130/50	268	188	L	118	108	129.4	90	27	1	0	0	0	.4	3	.5	350	5	17	62	288	26.7	TICK MARKS (1) ORIENT. 228°T L=150M W=8M	
LLMM 38	2006.6	21.1	8.6		125/25	263	173	M	117	104	121.7	81	32	1	0	0	0	.4	5	.5	315	3	3	11	163	26.0/31.0	TICK MARKS (2) ORIENT. 248°T L=25M W=5M	
MMNN 39	2012.9	20.1	8.0		130/90	268	228	M	128	108	138.2	65	57	6	0	0	0	.5	15	.5	325	3	3	12	223	25.6/30.4	TICK MARKS (10) ORIENT. 248°T L=175M W=8M	
NNOO 40	2020.9	18.3	7.5	110	105/170	215	280	H	172	98	168.6	101	58	10	0	0	0	.5	6	.7	325	3	2	7	110	29.0		
OOPP 41	2028.4	17.3	7.1		150/40	260	150	H	177	138	244.3	126	47	4	0	0	0	.5	10	.5	280	5	17	58	150	29.0		
PP ENL	2037.5	15.1	7.2																					28.9				
															</													

[illegible]

RTT-1000

ICE GOUGE DATA RECORD

1977

DATE		ICE GOUGE DATA RECORD															1977		VESSEL		KAPLUK		TEMPERATURE		3.0 MTS		SEG. SCALE 1:947		REMARKS	
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION DEPTH	MAXIMUM BRIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SOURCE RANGE	REMARKS
KM	MM	M	KM	°T	°	°	°	°	°	°	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISION DEPTH	MAXIMUM BRIDGE HEIGHT	MAXIMUM GOUGE LENGTH	DEPTH TO FIRST REFLECTOR	M	M			
AB	1148	18.8	108	315	140	125	10	L	81	120	97	35	44	2	0	0	0	.5	8	.4	378	2	5	20	10	22.0	125			
BC	1156	19.3	116														.6		.5						23.2		(NO SONAR ON THIS SEGMENT)			
CD	1204	20.1	126		75	60	25	L	87	97	84	14	50	17	6	0	0	.7	5	1.0	265	3	3	25	05	24.2		SONAR QUALITY POOR		
DE	1212	20.3	135		85	70	125	M	112	98	109	58	49	5	0	0	0	.5	5	.5	312	4	2	11	35	24.1		STAMUKI SHOAL OR FATHOGRAH		
EF	1221	20.8	145		120	105	15	L	100	101	101	62	37	1	0	0	0	.4	8	.5	575	0	-	-	-	26.0				
FG	1229	20.7	154		110	95	65	L	89	98	87	78	11	0	0	0	0	.2	3	.3	260	3	3	20	115	24.8				
GH	1239	22.0	163		115	100	60	L	68	99	67	-	-	-	-	-	-	5	-	325	4	5	20	30	24.1		TICK MARKS (1) ORIENT 90°T L=250M			
HI	1247	22.2	173		110	95	55	L	107	98	104	-	-	-	-	-	-	6	-	290	1	2	6	45	24.1		(NO FATHOGRAH FOR THIS SEGMENT)			
IJ	1256	22.1	183		125	110	45	L	81	104	84	45	31	5	0	0	0	.5	13	.4	278	0	-	-	-	31.8		TICK MARKS (1) ORIENT 90°T L=250M		
JK	1305	22.2	192	330	110	90	110	M	127	98	124	66	43	15	3	2	0	1.0	7	1.4	307	2	3	10	155	31.9		(FATHOGRAH QUAL. POOR FOR .5 KM W. SEG.)		
KL	1315	20.4	203	310	120	100	45	H	188	101	189	101	49	25	5	3	2	1.1	7	1.2	758	3	2	11	130	-		(SEG .75 KM - AL THISTED TO 1 KM)		
LM	1327	22.2	212	315	60	45	100	M	143	101	144	50	50	28	8	3	4	1.2	13	1.0	312	5	3	13	125	28.0		SHOALS		
NO	1336	22.9	220		110	95	80	L	135	98	132	46	53	31	4	1	0	.9	7	.7	330	4	3	10	135	29.3		MEASURE PRESSURE THROUGH GOUGING		
OP	1345	23.3	232		120	105	110	L	109	101	110	43	52	13	1	0	0	.6	14	.9	460	3	5	17	140	28.0		TICK MARKS (2) ORIENT 100°T L=250M		
QR	1355	22.1	243	305	125	90	05	L	157	104	158	68	59	21	3	1	0	.9	4	1.2	345	1	1	15	05					

1977

K. L. L.

3.0 NTI

[illegible]

1927

VESSEL	KALUK
TEMPLATE SIZE	3.0 MTS

DATE		VESSEL		TEMPLATE SIZE		3.0 MTS.																								
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	BOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM HEIGHT	MAXIMUM LENGTH	MULTI-INCISION COLLARS					DEPTH TO FIRST REFLECTOR	REMARKS
KM	HOURS MINUTES SECONDS	M	KM	°T	DOH	SUB	DOH	DOH	DOH	DOH	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER COLLAR	MAXIMUM INCISION DEPTH (CM)	MAXIMUM INCISION LENGTH (CM)	DEPTH TO FIRST REFLECTOR (M)					
WJXX 49	1844.7	17.6	10.5	062	50/30	112	92	L	35	1.08	37	9	24	2	0	0	0	.5	5	.4	393	1	2	15	112	23.1	125			
XXYV 50	1854.8	16.5	11.3	053	25/50	78	103	L	56	1.54	86	41	14	1	0	0	0	.5	7	.3	190	5	3	6	73	24.0	1			
YVZZ 51	1902.6	11.5	12.1		45/135	98	188	M	131	1.13	108	119	11	1	0	0	0	.4	4	.3	295	5	14	45	73	17.2		SIGNALS - GOODING ON CRESTS SAND WAVES (123°T) ON SHAL CREST		
ZZAA 52	1911.3	14.3	13.0		50/155	103	208	L	74	1.08	79	58	13	2	1	0	0	.6	11	.4	337	6	3	17	88	22.7				
AAABBB 53	1920.10	16.9	13.8	180	60/120	240	300	L	115	1.01	116	91	19	4	0	1	0	.8	7	1.0	280	3	3	22	210	26.0		(SEG 1.5 KM ON FATH. GRAM) SHOALS -		
BBBCCC 54	1927.6	15.0	13.0		75/95	255	275	M	131	1.97	127	115	14	1	0	0	1	1.1	7	.5	250	3	7	28	235	20.7 25.9		SHOALS - GOODING ON CRESTS IS HEAVY AND VARIABLE - FIDES AND TUGA ARE SMOOTHER AND LESS BOUGED.		
CCDDDD 55	1938.4	15.6	12.3		60/35	240	215	L	64	1.01	64	52	11	1	0	0	0	.5	3	.3	175	0	-	-	-	24.5		SHOAL		
DDDEEE 56	1946.10	13.2	11.5	155	70/115	225	260	L	88	.98	86	63	21	4	0	0	0	.5	2	.3	90	0	-	-	-	22.6		SEG 1.5 KM ON SE. MAP - AUGUST 10 TO 1 PM. (SHOALS)		
EEEEFF 57	1953.8	13.1	11.1	125	135/100	260	225	L	67	1.13	75	52	14	1	0	0	0	.4	10	.2	325	2	2	3	145	22.0		SHOALS		
FFFFGG 58	2001.7	16.7	10.5		125/110	250	265	L	86	1.04	89	72	11	2	0	1	0	.9	3	.5	365	0	-	-	-	21.9		SHOALS		
GGGHHH 59	2010.10	15.0	9.9	180	120/30	300	210	M	44	1.01	44	33	8	2	1	0	0	.6	2	.5	210	2	2	5	305	21.2		SHOALS		
HHII (A/I)	2020.10	15.7	9.0																						20.3					

[illegible]

[illegible]

RTT-1000

ICE GOUGE DATA RECORD

1977

TRACKING		ICE GOUGE DATA RECORD																				1977		VESSEL KAPLUK		TEMPLATE SIZE 3.0 MTS		SEQ. SCALE 1:947				
DATE	259	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SOURCE	RANGE	REMARKS
SEGMENT	KM	TIME	M	KM	T	DOH	SUB	DOH	SUB	DOH	SUB	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION	M	M					
AB	1	0803	19.0	9.7	000	120	135	L	35	1.01	35	4	13	19	3	0	0	0	.5	13	.5	235	0	-	-	-	24.3	125				
BC	2	0812	19.2	10.6		115	65	L	72	.99	71	3	45	21	6	0	0	0	.5	11	.7	800	2	3	5	15	24.6		NO 7 KM REFLECTOR STARTS.			
CD	3	0822	17.8	11.4	010	95	105	L	71	.98	69	16	28	34	6	3	0	0	.7	8	.7	635	1	4	16	30	22.5					
DE	4	0832	18.4	12.3		85	35	L	73	.98	71	15	41	29	1	1	1	0	.9	5	.5	472	2	4	16	30	22.5					
EF	5	0842	18.9	13.3		60	35	M	118	1.01	119	12	66	41	7	3	1	0	1.0	19	.8	345	4	5	25	45	21.0		STAMUKI SHOAL - CHANGE IN GOUGE DENSITY. TICK MARKS 1.5 KM W. 90°T			
FG	6	0852	19.5	14.3		65	80	M	195	.99	198	11	119	52	16	4	2	2	1.5	7	1.0	280	4	4	22	60	22.5		SHOALS TICK MARKS 1.5 KM W. 80°T			
GH	7	0903	18.4	15.3		55	90	M	208	1.01	216	13	142	32	22	8	3	1	1.2	13	1.0	618	10	7	37	60	21.9		SHOALS TICK MARKS 1.5 KM W. 45°T			
HI	8	0914	19.0	16.3		50	25	M	176	1.08	190	11	76	41	20	19	8	11	1.5	12	1.3	322	9	5	48	60	23.8					
IJ	9	0923	20.9	17.3		60	20	M	153	1.01	154	15	24	61	48	11	6	3	1.2	10	1.0	315	8	7	27	60	26.6		PRESSURE RIDGE (70°T) W. 190M			
JK	10	0925	21.8	18.2		60	90	M	146	1.01	147	15	42	49	39	7	8	1	1.1	5	1.3	365	4	3	45	60	26.7					
KL	11	0944	22.6	19.2		60	90	M	117	1.01	118	12	24	53	28	3	6	3	1.6	6	2.1	480	5	6	44	65	27.3		TICK MARKS (3) ORIENTED 90°T L=250M			
LM	12	0955	23.1	20.2	005	90	65	M	128	1.00	128	46	62	20	7	0	0	.8	12	.9	580	5	6	40	60	28.0			TICK MARKS (4) ORIENTED 15°T L=250M			
MN	13	1005	23.7	21.2	1	90	55	M	77	1.00	99	1	57	35	5	1	0	.8	7	.7	430	2	2	17	150	28.0			SEEN 1.75 KM - ADJUSTED TO 1 KM			
NO	14	1018	24.5	22.2															.8		.7						28.6		(NO SOURCE FOR THIS RECORD)			
OP	15	1026	25.6	23.1															1.0		.7						27.9		NO SOURCE FOR THIS RECORD			
QR	16	1036	26.9	24.1															1.5		1.1						28.7		PT. 2 ON SHALLOWS - SHOALS (NO SOURCE)			

ICE GOUGE DATA RECORD

1977

VESSEL	KARLUK
TEMPLATE SIZE	3.0 HTS

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS
SEGMENT	KM	M	KM	°T	DOH SUB	DOH SUB	DOH SUB	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°T)	M	M				
QR 17	1046.4	24.1	25.1	005	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	1.5	-	-	-	-	-	29.7	125	(NO SONAR)			
RS 18	1058.4	24.9	26.2	350	60/120	50	110	M	157	101	158	52	65	77	5	7	1	1.5	2.0	1.4	295	6	3	18	110	30.4	SEGMENT .15 KM - ADJUSTED TO 1 KM (PT. R NOT ON SONAR 17 KM REFLECTION PITCH OUT AT SEA FLOOR. SURFACE MARK 3. TICK MARKS (1) 80°T 1:13M W=10M			
ST 19	1107.5	25.4	27.2		115/145	105	135	M	193	97	191	56	62	55	15	5	0	1.0	8	1.0	300	12	3	33	355	-				
TU 20	1117.0	25.5	27.7		140/160	130	150	M	157	120	188	32	69	38	13	5	0	1.0	10	1.6	1000	7	6	37	140	-				
UV 21	1127.0	26.5	28.3		125/155	115	135	L	153	104	159	20	67	41	14	9	2	1.1	22	1.4	590	5	6	56	155	32.2	TICK MARKS (1) 80°T 1:13M W=10M			
VW 22	1138.5	27.5	29.3		135/115	125	105	L	151	113	170	16	78	30	10	11	7	1.3	10	1.6	347	5	7	25	35	33.1				
WX 23	1148.9	27.0	30.1		110/50	100	40	M	145	98	142	78	32	19	12	3	1	1.1	7	1.0	323	2	2	13	130	35.0				
XY 24	1158.6	28.1	31.0		105/125	95	115	L	136	97	131	40	53	20	8	7	8	1.5	20	1.3	670	4	3	25	115	36.0				
YZ 25	1209.0	29.0	31.8	225	115/70	60	295	M	110	29	216	8	72	23	7	0	0	.8	7	.9	305	2	2	12	275	34.3	CHANGE IN COURSE CAUSES PROBLEM WITH OBSERVED NO. OF INCISIONS. BOTH ORIENTATIONS ARE COMMENT.			
ZAA 26	1219.7	28.8	32.1		165/45	30	270	L	148	200	296	45	65	25	7	6	0	1.0	16	1.5	687	5	4	22	295	-	HEAVY PRESSURE RIDGE BEGINNING - COURSE ~ 11 TO ORIGINALLY 115. MISSING SOME DIFFICULTY IN COURSE.			
AAAB 27	1232.5	28.1	31.2		35/115	260	40	L	183	128	234	69	61	30	11	10	2	1.4	15	1.3	622	9	4	48	265	34.7	1/2 COURSE TO ORIGINALLY 115. MAKES OBSERVATIONS OF GOUGE 1 < 40 CM. ON PHOTOGRAPHY DIFFICULT			
BBCC 28	1245.12	27.6	30.4		45/115	210	110	M	226	113	255	85	89	24	11	9	5	1.6	45	1.5	345	6	5	21	265	-	CHANG - CHANGE IN GOUGE DENSITY			
CCDD 29	1259.12	28.8	29.6		40/65	265	290	L	114	120	136	39	49	19	4	3	0	.9	22	1.0	395	3	5	31	235	33.6				
DEEE 30	1308.13	28.0	28.9		40/55	265	280	L	144	120	112	61	53	19	7	4	0	1.0	15	.7	510	4	2	9	235	-	SEG. .90 KM - ADJUSTED TO 1 KM ON SONAR (.6 KM ON PHOTOGRAPHY)			
EEFF 31	1319.7	26.7	28.0		40/80	265	305	M	118	120	141	4	75	30	7	2	0	1.0	11	1.7	475	3	2	4	255	33.3	NOT 1325 (GOUGE 1.0 - ADJUSTED TO 1 KM)			
FFGG 32	1544.0	25.0	27.2		40/60	265	285	M	156	120	187	73	54	22	3	3	1	1.1	20	.7	825	4	4	24	255	36.7	PT. 11 NOT ON SONAR			

TRACKLINE		ICE GOUGE DATA RECORD															VESSEL		TEMPLATE SIZE																			
71		1977															KARLUK		3.0 KTB.																			
DATE		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF INCISIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GOUGE		DEPTH TO REFLECTOR		SONAR RANGE		REMARKS
SEGMENT	KM	HOURS	MINUTES	M	KM	°T	DOM	SUB	DOM	SUB	HIGH	LOW	VAR	NO	YES	OBS	L	FA	KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISCUSSION	MAXIMUM DISCUSSION	DOMINANT ORIENTATION	M	M		
GGHH	33	1555	.4	24.1	26.5	225	40	170	265	035	M	142	120	.4	56	52	17	5	7	5	2.0	12	1.5	517	3	10	40	30	32.4	125								
HHII	34	1606	.1	23.2	25.8		55	45	280	290	L	129	104	.12	51	39	23	7	7	2	1.5	12	1.3	782	7	6	36	260	31.1									
IIJJ	35	1616	.0	21.4	25.0		60	25	285	260	L	182	101	.18	54	62	32	14	13	7	1.5	12	1.4	680	3	4	40	255	30.8									
JJKK	36	1630	.0	21.3	24.1	180	115	55	295	235	M	207	.97	.8	100	81	21	3	2	0	.9	8	1.1	233	6	5	29	305	29.8						SHOAL			
KKLL	37	1643	.5	19.0	22.9		110	60	290	240	M	145	.98	.1	34	67	27	11	3	3	1.3	5	.6	260	3	4	10	340	27.1						TICK MARKS (2) 245°T L=3.1M W=2M			
LLMM	38	1656	.8	18.1	21.9	155	125	155	280	310	L	124	104	.129	.0	29	55	30	7	2	1.1	3	.8	395	3	2	7	285	25.7									
MMNN	39	1709	.5	19.0	20.9		115	100	290	255	L	133	.97	.0	31	59	22	10	9	2	1.2	6	1.0	310	3	3	15	295	23.7									
NNOO	40	1721	.0	19.1	19.9		125	90	280	245	L	139	.99	.6	46	37	31	13	10	2	1.1	8	1.0	350	5	3	12	305	24.7									
OOPP	41	1731	.1	18.0	19.1		120	65	295	220	M	187	101	.9	83	52	29	12	8	3	1.5	8	.7	410	3	2	12	300	23.2									
PPQQ	42	1741	.4	14.8	12.1	190	50	70	240	200	M	152	108	.12	68	68	13	3	0	0	.7	3	1.0	195	1	5	20	235	23.9						SHOAL FOR DIVE 1744 + 1717)			
QQRR	43	1927	.5	17.0	17.1		30	90	220	280	L	38	138	.14	10	25	2	1	0	0	.7	5	.6	290	1	5	20	235	24.4									
RRSS	44	1937	.3	16.7	16.2		90	40	280	230	L	17	100	.10	6	10	1	0	0	0	.5	3	.6	190	0	-	-	-	24.0	26.3								
SSTT	45	1946	.9	19.4	15.2		65	40	255	230	L	19	.97	.8	6	12	1	0	0	0	.5	5	.7	100	0	-	-	-	24.0									
TTUU	46	1957	.7	19.6	14.2		70	55	280	245	L	18	100	.15	.0	8	9	1	0	0	.5	11	.8	250	0	-	-	-	24.5	26.5					RAINWATER SHOWS FOR 200 MARKS OF 1 KM.			
UUUV	47	2007	.7	20.1	13.2		90	60	280	250	L	22	100	.10	10	11	1	0	0	0	.4	7	.4	300	0	-	-	-	24.9	26.7					Two SOUS DIVE " + 1717 (17.11)			
VV	END	2009	.0	17.0	12.1																								25.1									

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SONAR QUALITY POOR DUE TO ROUGH SEAS
FATHOGRAM UNUSABLE FOR ENTIRE TRACKLINE

SEE REMARKS FOR ADDITIONAL INFORMATION

RTT-1000

ICE GOUGE DATA RECORD

1977

TRACKLINE		DATE		SEGMENT		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		VARIABLES		NUMBER OF INCISIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH		MAXIMUM BRIDGE HEIGHT		MAXIMUM GOUGE LENGTH		MULTI-INCISION NUMBER					DEPTH TO FIRST REFLECTOR		SONAR RANGE		REMARKS
KM	MINUTES	M	KM	T	SS	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISTRIBUTION WIDTH (M)	DOMINANT ORIENTATION (°)	M	M											
AB	0913.0	8.4	-	030	55	85	-	L	2	100	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	50	0	-	-	-	13.3	125		ROUGH WATER EXCLUDES USE OF FATHOGRAM FOR ENTIRE TRACKLINE.										
BC	0925.5	6.6	-	-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-											
CD	0940.5	6.0	-	025	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	12.7													
DE	0951.7	6.7	-	030	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										
EF	1001.7	5.5	-	-	50	80	10	L	14	100	15.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	65	0	-	-	-	13.1													
FG	1020.5	10.2	-	-	50	80	55	L	78	100	84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	275	3	2	5	55	-					TICK MARKS (1) OR W. 55° T 1:100M W 2 H								
GH	1036.0	11.7	4.9	-	40	70	50	L	116	120	139	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	530	4	9	40	75	18.0													
HI	1050.5	13.7	5.2	-	50	80	170	M	88	108	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	315	4	4	10	50	-													
IJ	1059.3	15.7	5.8	-	25	55	195	M	144	151	221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	300	15	16	55	55	21.9													
JK	112.0	19.0	6.3	-	25	55	40	M	158	154	243	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	290	7	10	52	40	25.2													
KL	1125.8	20.1	7.0	-	35	65	50	L	82	128	105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	225	3	3	13	50	26.8													
LM	1138.5	20.6	7.8	-	40	70	50	L	75	120	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	320	2	2	12	50	-					CHANGE SPEED TO 4.25 KTS								
MN	1151.2	21.0	8.7	-	25	55	85	L	151	151	237	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	300	5	15	47	55	-					GOUGE TERMINATION (P. 4 MARINE)								
NO	1203.0	24.4	9.6	-	45	75	50	M	133	113	150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	225	13	8	65	60	-					HOLES IN SEA FLOOR								
OP	1213.7	25.6	10.1	-	50	80	100	M	127	108	137	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	275	9	5	18	80	-					SYNCHRONIZED (BLACK) - GOUGE DENSITY CHANGE								
PQ	1225.8	27.5	11.4	-	40	70	55	L	95	120	114	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	310	6	8	10	60	-													

TRACKLINE		ICE GOUGE DATA RECORD																		VESSEL		TEMPLATE SIZE							
76		1977																		KAPLUR		2.8 HTS							
DATE	264	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ADJUSTED ORIENTATION	VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH	MAXIMUM INCISION HEIGHT	MAXIMUM INCISION LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS
SEGMENT	KM	HOURS MINUTES TENTHS	M	KM	°T	DOH SUB	DOH SUB	DOH SUB	DOH SUB	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°T)	M	M	
QR	17	1237.4	28.7	12.3	030	45	75	120	L	99	1.13	11.9	-	-	-	-	-	-	-	10	-	545	7	6	40	75	-	125	
RS	18	1250.0	27.8	13.2		45	75	90	L	166	1.13	107.6	-	-	-	-	-	-	-	9	-	280	8	7	63	70	-	1	
ST	19	1302.0	28.8	14.1		50	80	45	M	145	1.08	156.6	-	-	-	-	-	-	-	6	-	510	7	23	120	35	-		
TU	20	1341.0	33.7	15.1		35	10	65	M	133	1.28	170.2	-	-	-	-	-	-	-	8	-	400	9	11	82	40	-		
UV	21	1326.2	31.7	16.1		165	65	195	L	71	2.00	142.0	-	-	-	-	-	-	-	8	-	640	6	7	38	185	-		
VW	22	1338.5	32.1	16.8		45	75	-	L	61	1.13	68.9	-	-	-	-	-	-	-	4	-	350	3	6	55	75	-		
WX	23	1351.9	33.8	17.7		50	80	-	L	138	1.08	149.0	-	-	-	-	-	-	-	4	-	330	7	3	10	80	-		
XY	24	1405.0	34.6	18.7		50	80	-	L	106	1.08	114.5	-	-	-	-	-	-	-	8	-	310	5	5	45	75	-	SONAR INCOMPLETE - COVERAGE OF SEGMENT FOR 17 KM ONLY. ADJUSTED TO ONE KM.	
YZ	25	1416.2	35.1	19.7		50	80	140	L	64	1.08	69.1	-	-	-	-	-	-	-	5	-	350	5	6	35	85	-		
ZA	26	1427.6	36.1	20.7		40	90	70	L	50	1.20	60.0	-	-	-	-	-	-	-	4	-	300	1	3	25	90	-		
AABE	27	1440.9	37.2	21.7	120	155	275	-	L	74	1.54	114.0	-	-	-	-	-	-	-	5	-	400	5	8	70	275	-		
BBCC	28	1452.7	37.3	22.2		155	275	-	L	105	1.54	161.7	-	-	-	-	-	-	-	5	-	450	5	9	110	275	-		
CCDD	29	1503.8	36.9	22.4		145	265	-	L	87	1.28	111.4	-	-	-	-	-	-	-	4	-	415	6	12	75	265	-	SONAR QUALITY POOR DUE TO WAVE ACTION. BOTTOM IS COVERED WITH GOULDING. FROM PRESSURE RIDGE KEEL. GOUGE CLARITY LOSS AT SOURCE CHANGE. GOUGE DENSITY IS A FUNCTION OF THIS CHANGE AND NOT NECESSARILY LOWER NUMBERS.	
DDEE	30	1514.3	37.0	22.8	184	115	299	-	L	64	.79	63.4	-	-	-	-	-	-	-	3	-	300	1	6	40	270	-		
EEFF	31	1523.1	36.7	21.9		90	274	-	L	75	1.00	75.0	-	-	-	-	-	-	-	8	-	250	1	3	30	319	-		
FFGG	32	1534.2	36.0	21.1	175	90	265	-	L	66	1.00	66.0	-	-	-	-	-	-	-	10	-	250	1	3	30	319	-		

ICE GOUGE DATA RECORD		1977		VESSEL		KARLUK																						
DATE		264		TEMPLATE		2.8 KTS																						
SEGMENT	START TIME	START DEPTH	START DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GOUGES					DEPTH TO FIRST REFLECTOR	SOURCE RANGE	REMARKS
KM	HOURS MINUTES SECONDS	M	KM	°T	°	°	°	°	°	°	NMP	2-4	4-6	6-8	8-10	>10	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISINUITY (WIDTH IN CM)	DOMINANT ORIENTATION (°T)	M	M		
GGHH	1544.7	34.1	20.3	175	90	265	-	L	59	1.00	59	10	-	-	-	-	-	10	-	300	1	3	30	325	-	125	TICK MARKS (3) ORIGIN: 265°T L: 210 M W: 9 M RELIEF ON SONAR PLOT 2 X TO ANGLE OF GOUGES TO THE LN (50°). THIS ANGLE SHOWS TID. MARK RELIEF BETTER THAN ANY OTHER. GOUGE THROUGH RELIEF ALSO GOOD. MANY SHOW A TICK MARK LIKE APPEARANCE IN THE TROUGH. OTHERS SHOW A BROAD SMOOTH BOTTOM.	
HAII	1556.0	34.1	19.7		90	265	175	M	79	1.00	79	-	-	-	-	-	-	20	-	360	2	6	30	176	-	1		
IJJJ	1600.8	33.3	18.8		115	290	265	M	87	.99	86	-	-	-	-	-	-	10	-	360	4	4	38	310	-			
JJRK	1617.3	32.3	17.8		90	265	300	M	84	1.00	84	-	-	-	-	-	-	25	-	400	2	4	48	295	-			
KKLL	1628.1	31.6	16.8		90	265	295	M	119	1.00	119	-	-	-	-	-	-	10	-	305	4	11	65	225	-			
LLMM	1639.2	30.8	15.8		90	265	300	L	74	1.00	74	-	-	-	-	-	-	6	-	330	1	2	7	315	-			
MMNN	1650.4	28.9	14.8		120	295	265	L	98	1.01	99	-	-	-	-	-	-	7	-	315	3	4	25	325	-		TICK MARKS (5) ORIGIN: 270°T L: 210 M W: 11 M	
NNOO	1702.3	29.1	13.7		125	300	265	M	122	1.01	126	-	-	-	-	-	-	8	-	280	1	2	12	335	-			
OOPP	1713.5	28.5	12.7		115	290	235	H	153	.99	151	-	-	-	-	-	-	7	-	290	6	9	40	300	-			
PPQQ	1725.5	26.7	11.7		125	300	230	H	143	1.04	148	-	-	-	-	-	-	8	-	515	4	7	50	230	-			
QARR	1737.0	23.1	10.7		130	305	235	H	186	1.08	200	-	-	-	-	-	-	10	-	290	4	3	12	235	-			
RRSS	1748.2	24.8	9.6		50	225	300	H	204	1.08	220	-	-	-	-	-	-	8	-	320	9	12	43	220	-			
SSTT	1800.0	22.7	8.6		65	240	325	H	217	.99	214	-	-	-	-	-	-	8	-	450	9	5	27	180	-		ABRUPT ORIENTATION CHANGE OF GOUGE FLOW DIRECTION INFERRED IS 180°T CHANGING TO 330°T AFTER STOP.	
TTUU	1811.9	21.0	7.5		60	235	200	H	203	1.01	205	-	-	-	-	-	-	12	-	410	10	6	42	260	-		TICK MARKS (1) ORIGIN: 2.5°T L: 210 M W: 9 M	
VVVV	1823.2	19.2	6.5		60	235	350	M	118	1.01	119	-	-	-	-	-	-	8	-	260	3	6	23	350	-		GOUGE TERMINATION BY FIRST MARKING STAMEN SIGNAL (BCH).	
VVVV	1835.2	16.6	5.5		60	235	215	L	105	1.01	106	-	-	-	-	-	-	3	-	215	2	2	10	295	-			

76

ICE GOUGE DATA RECORD

1977

VESSEL

KAPLUK

TEMPLATE
SIZE

2-8 KTB

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES					DEPTH TO FIRST REFLECTOR	SONAR RANGE
SEGMENT	KM	M	KM	°T	DCM	SUB	ORIENTATION	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISTANCE (M)	DOMINANT ORIENTATION	M	M	REMARKS			
WNXX 99	1816.9	15.4	4.5	175	60	235	-	L	102	101	103	-	-	-	-	-	-	4	-	270	2	2	17	215	21.0	12.5	GOUGE TERMINATION W/PSH MARINE TIE MARKS (E) ORIENT: 265° L-80M W-3M			
XXYY 50	1857.9	13.5	3.5		50	225	-	L	46	108	49	-	-	-	-	-	-	3	-	310	1	2	12	225	18.8		HOLES IN SEA FLOOR			
YYZZ 51	1909.1	12.5	2.4		50	225	330	M	32	108	34	-	-	-	-	-	-	2	-	165	0	-	-	-	17.1		HOLES IN SEA FLOOR			
ZZAAA 52	1919.5	12.0	1.3		50	225	-	L	24	108	25	-	-	-	-	-	-	2	-	140	0	-	-	-	16.2					
END AAA	1931.0	9.8	0.3																						15.8					

1976

TRACKLINES

1976 I

SEGMENT SCALE: 1:1276

VESSSEL

KARLUK

TEMPLATE
SIZE

3,0 KTO

[illegible]

1976 I

VESSEL	KARLUK
TEMPLATE SIZE	3.0 KTB

ICE GOUGE DATA RECORD

1976 I

SEGMENT SCALE 1:1276

VESSEL

KARLUK

TEMPLATE

3.0 KTB

[illegible]

TRACKLINE		ICE GOUGE DATA RECORD																		1976 I				SEGMENT SCALE 1:1276										VESSEL		KARLUK	
DATE		215																		TEMPLATE		3.0 KTS															
SEGMENT		START TIME	START DEPTH	DISTANCE FROM SHIP'S COURSE	SHIP'S COURSE	ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	NUMBER OF OBS.	CORRECTOR FACTOR	BOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAX. INCISION DEPTH	MAX. INCISION WIDTH	MAX. INCISION HEIGHT	MAX. INCISION LENGTH	MULTI-INCISION GOUGES				DEPTH TO FAST REPEATER	SONAR RANGE	REMARKS							
KM	HOURS MINUTES SECONDS	M	KM	T	DOM	SUB	HIGH MED LOW	OBS	L	PA	KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISSECTION DEPTH	MAXIMUM ORIENTATION	M	M									
AB	1	1519.0	1.6		340	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	100	SED. WAVES (ORIG. 24 FT. HIGH 070° T); SMALL SEA SWELL (2-10 CM)								
BC	2	1528.2	2.0			-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-		SED. WAVES								
CD	3	1539.7	2.6			-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-		SMALLER SED. WAVES.								
DE	4	1550.4	3.6			45/120	025	100	M	8	1.18	9.4	8	0	0	0	0	<.2	4	2		0	-	-	-	8.0		SED. WAVES DIE OUT									
EF	5	1601.5	5.0			45/20	025	000	M	25	1.18	29.15	23	2	0	0	0	.2	4	2		2	2	9	000	8.6											
FG	6	1614.5	6.0			25/120	005	100	L	21	1.66	34.9	20	1	0	0	0	.2	4	2		0	-	-	-	-											
GH	7	1627.0	6.6			50/130	030	110	M	52	1.12	58.2	49	3	0	0	0	.3	9	2		0	-	-	-	-											
HI	8	1638.2	7.2			45/50	125	030	L	42	1.36	57.1	40	2	0	0	0	.2	7	1.3		0	-	-	-	12.0		TICK MARKS (2) OBS. - L = 75 M W = 5 M									
IJ	9	1648.2	8.0			90/150	070	130	L	59	1.09	59.0	56	1	2	0	0	.4	7	.6		2	2	12	130	11.8											
JK	10	1658.5	8.4			125/105	105	085	L	41	1.07	43.9	34	2	2	2	1	.9	10	.8		2	3	38	085	12.6											
KL	11	1708.9	9.0			120/20	100	000	L	38	1.04	39.5	36	1	1	0	0	.4	13	.6		2	2	3	120	12.8											
LM	12	1718.2	9.6		350	140/45	110	035	L	35	1.26	44.1	32	2	0	0	1	.8	4	.8		2	2	3	120	-											
MN	13	1727.5	10.0			130/50	120	040	L	33	1.12	37.0	27	5	1	0	0	.5	8	.2		1	2	10	040	-											
NO	14	1736.7	10.6			130/50	120	040	L	24	1.12	26.9	21	2	1	0	0	.4	4	<.2		0	-	-	-	-											
OP	15	1745.9	11.0			120/55	110	045	L	36	1.04	37.4	28	5	2	1	0	.6	7	.6		0	-	-	-	14.8											
PQ	16	1755.2	11.4			50/150	040	140	L	45	1.12	50.4	36	6	2	1	0	.6	6	.7		2	4	13	140	17.0	4										

TRAINING
23

ICE GOUGE DATA RECORD

1976 I

SEGMENT SCALE 1:1276

VESSEL	KARLUK
TEMPLATE SIZE	3:0 NTS

DATE		START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVATION	ADJUSTED ORIENTATION	T	INCISION DEPTH DISTRIBUTION METERS	INCISION DEPTH	INCISION WIDTH	INCISION HEIGHT	INCISION LENGTH	MULTI-INCISION METERS				DISTANCE TO OBSERVATION	SONAR RANGE	REMARKS						
216	SEGMENT													NUMBER	MAXIMUM INCISIONS PER COURSE	MAXIMUM INCISION WIDTH	MAXIMUM INCISION LENGTH				MAXIMUM INCISION AREA					
KM	MINUTES	M	KM	T	DOM	SUB	HIGH	OBS	L	PER	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	M	M	M			
AB	1305.0	23		040	50	-	090	-	L	1	1.12	1.1	1	0	0	0	0	<1.2	2	<1.2	0	-	-	5.8	100	SED. WAVES (ORIGIN OF TROUGH 115°T) (SMALL PERIOD)
BC	1305.3	26			050	-	090	-	L	3	1.12	3.4	3	0	0	0	0	<1.2	2	<1.2	0	-	-	5.8		SED. WAVES
CD	1325.7	30			45	-	085	-	L	3	1.18	3.5	3	0	0	0	0	<1.2	2	<1.2	0	-	-	6.6		SED. WAVES, 5-FIDDLE SCOUR
DE	1334.2	30			-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	-	-	6.8		SED. WAVES
EF	1347.5	30			35	-	075	-	L	3	1.36	4.1	3	0	0	0	0	<1.2	2	<1.2	1	2	10	7.0	075	SED. WAVES, 15-FIDDLE SCOUR
FG	1357.5	30			-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	-	-	7.0		SED. WAVES
GH	1407.7	32			-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	-	-	7.2		SED. WAVES
HI	1419.0	32			50	-	90	-	L	13	1.12	1.6	13	0	0	0	0	<1.2	1	<1.2	0	-	-	7.4		SED. WAVES
I	1430.0	40																						8.0		
END	1430.0	40																						8.4		

TRACKLINE

24

ICE GOUGE DATA RECORD

1976 T

SEGMENT SCALE 1:1276

VESSEL

KARLUK

YS MPLATE
SIZE

3-0 ATB

DATE	START TIME	START DEPTH	DISTANCE	SHIP'S COURSE	OBSERVATION	ADJUSTED	ORIENTATION	VARIABLE	NUMBER	CORRECT	GOUGE	INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION (PAIRS)				SONAR	REMARKS	
216	START	DEPTH	DISTANCE	SHIP'S COURSE	OBSERVATION	ADJUSTED	ORIENTATION	VARIABLE	NUMBER	CORRECT	GOUGE	NMP	2-4	4-6	6-8	8-10	10	MAX	M	M	M	NUMBER	MAXIMUM INCISION PER GOUGE	MAXIMUM INCISION DISTRIBUTION PER GOUGE	MAXIMUM INCISION DISTRIBUTION PER GOUGE	MAXIMUM INCISION DISTRIBUTION PER GOUGE	SONAR RANGE	REMARKS
SEGMENT	KM	M	KM	*T	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB	DOON	SUB
AB	1431.0	—	270	25	295	—	L	10	166	19	10	0	0	0	0	0	0	0	0	0	0	0	—	—	—	—	180M	PT. A NOT ON FA-HOGRAM
BC	1441.3	4.4			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.0		SED. WAVES (ORIG. 60° TURN 350°)
CD	1451.7	4.6			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	8.4		SED. WAVES. 1 STRIP OF SCOUR
DE	1502.0	4.6			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.0		SED. WAVES.
EF	1512.4	—			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	—		PT. E 1MT ON FA-HOGRAM
FG	1523.0	4.4			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.0		SED. WAVES.
GH	1533.4	3.0			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.8		SED. WAVES
HI	1544.0	3.0			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.8		SED. WAVES (ORIG. 345°)
IJ	1554.6	2.8			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.6		SED. WAVES
JK	1604.2	2.8			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.6		SED. WAVES
KL	1613.6	2.6			20	250	—	L	4	189	7.6	4	0	0	0	0	0	0	0	0	0	0	—	—	—	7.2		SED. WAVES
LM	1623.0	2.4			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.0		SED. WAVES
MN	1637.3	2.4			—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	0	0	—	—	—	7.0		SED. WAVES
NO	1650.2	2.2			135	045	—	L	8	118	9.4	8	0	0	0	0	0	0	0	0	0	0	—	—	—	6.0		SED. WAVES
OP	1702.5	2.2			140	050	—	L	6	126	7.6	6	0	0	0	0	0	0	0	0	0	0	—	—	—	6.2		SED. WAVES
PQ	1711.3	2.0			150	060	—	L	12	149	17.9	12	0	0	0	0	0	0	0	0	0	0	—	—	—	6.2		SED. WAVES

SEGMENT

ICE GOUGE DATA RECORD

1976 I

SEGMENT SCALE 1:1276

VESSSEL

KARLUK

TEMPLATE
SIZE

3.0 RTD

[illegible]

1976-II

KARLIK

HTS

TRACKLINE		ICE GOUGE DATA RECORD															1976-II		VESSEL		KAFLUK																								
DATE		236		SEGMENT		START TIME		START DEPTH		DISTANCE FROM SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF INCISIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS					MAXIMUM INCISION WIDTH		MAXIMUM RIDGE HEIGHT		MULTI-INCISION GOUGES		DEPTH TO FIRST REFLECTOR		SOURCE RANGE		REMARKS						
KM	HOURS MINUTES TENTH	M	KM	°T	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	°S	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH M	DOMINANT ORIENTATION	DEPTH TO FIRST REFLECTOR	°S	°S				
QR 17	1830.9	1.6	-	120	/	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	-	-	-	100								
RS 18	1838.0	1.6	-	120	/	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	-	-	-	-	-	-	-	-					
S END	1846.0	1.2	-	120	/	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				

TRACKLINE		ICE GOUGE DATA RECORD															1976 JL										SEG. SCALE - 1:1326 @ 100 M RANGE										VESSEL		KARLUK		TEMPLATE		3.8		KTB									
DATE		260		SEGMENT		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		*T		ORIENTATION VARIABILITY		NUMBER OF INCISIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH		MAXIMUM RIDGE HEIGHT		MAXIMUM GOUGE LENGTH		MULTI-INCISION GOUGES					DEPTH TO FIRST REFLECTOR		SONAR RANGE		REMARKS	
KM	HOURS MINUTES TENTHS	M	KM	*T	DOH	SUB	DOH	SUB	HIGH RECD LOG	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM INCISION WIDTH (M)	DOMINANT ORIENTATION (°)	DEPTH TO FIRST REFLECTOR (M)	SONAR RANGE (M)																										
AB 1	0815.0	1.3	-	321	150	-	111	-	L	15	1.49	22.4	15	0	0	0	0	0	<.2	2	<.2		0	-	-	-	-	100																										
BC 2	0822.5	1.4	-		10	-	331	-	L	5	2.70	13.5	5	0	0	0	0	0	<.2	1	<.2		1	3	3	331	3.5																											
CD 3	0830.2	1.6	-		40	-	001	-	L	3	1.26	3.8	3	0	0	0	0	0	<.2	1	<.2		0	-	-	-	-																											
DE 4	0838.8	1.8	-	294	115	-	049	-	L	3	1.01	3.0	3	0	0	0	0	0	<.2	1	<.2		0	-	-	-	-																											
EF 5	0849.8	1.7	-		140	-	074	-	L	3	1.26	3.8	3	0	0	0	0	0	<.2	1	<.2		0	-	-	-	3.4																											
FG 6	0900.0	1.6	-		120	-	054	-	L	4	1.04	4.2	4	0	0	0	0	0	<.2	2	<.2		0	-	-	-	3.5																											
GH 7	0910.6	1.5	-		130	-	064	-	L	3	1.12	3.4	3	0	0	0	0	0	<.2	2	<.2		0	-	-	-	3.5																											
HI 8	0919.3	1.5	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0		0	-	-	-	3.5																											
IJ 9	0928.2	1.6	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0		0	-	-	-	3.6																											
JK 10	0939.7	1.6	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0		0	-	-	-	3.1																											
KL 11	0948.0	1.5	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0		0	-	-	-	-																											
LM 12	0954.3	1.7	-		-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0		0	-	-	-	-																											
MN 13	1002.7	1.7	-	059	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0		0	-	-	-	3.9																											
NO 14	1010.0	1.4	-		20	-	019	-	L	1	1.19	1.9	1	0	0	0	0	0	<.2	2	<.2		0	-	-	-	3.2																											
OP 15	1018.4	1.7	-		130	-	187	089	M	4	1.12	4.5	4	0	0	0	0	0	<.2	3	<.2		0	-	-	-	3.6																											
PQ 16	1025.7	1.5	-		150	-	209	-	L	4	1.49	6.0	4	0	0	0	0	0	<.2	3	<.2		1	3	12	209	4.3																											

1976 II

REMARKS

PATCHES OF HIGH DENSITY GROWING.
1 POSSIBLE STRUBLE SCOUR (15M DIAMETER)
1/2M RIDGE AT END OF HIGH DENSITY GROWING.

1 GOUGE TERMINATION WITH PISH MORAIN

NO CONAK THIS SECURITY

ICE GOUGE DATA RECORD

1976 II

VESSEL	KARLUK
TEMPLATE SIZE	3.8 KTS

DATE		VESSEL		KARLUK																										
260		TEMPLATE SIZE		2.8 KTS																										
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM CRACK	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (CM)	DOMINANT ORIENTATION	DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS
KM	HOURS MINUTES TENTHS	M	KM	°T	DOH SUB	DOH SUB	HIGH MED LOW	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M				M	M					
GGHH 33	1240.7	3.3	-	359	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	100	NO SONAR THIS SEGMENT. POINT GG NOT ON SONAR.				
HHII 34	1245.0	3.8	-	95	160	094	159	M	31	.99	30	31	0	0	0	0	4.2	5	.2		0	-	-	-	6.3					
IIJJ 35	1249.5	4.1	-	019	90	109	169	L	35	1.00	35	33	2	0	0	0	.2	4	.2		1	2	17	089	6.4					
JJKK 36	1258.0	4.6	-	50	90	069	109	L	25	1.12	28	25	0	0	0	0	<.2	5	<.2		0	-	-	-	7.0					
KKLL 37	1309.3	5.2	-	50	155	069	174	L	53	1.12	59	49	4	0	0	0	.2	6	.2		2	2	10	174	-	TICK MARKS (5) ORIENT 34°T L=215M W=5M				
LLMM 38	1320.7	5.6	-	55	115	074	134	M	103	1.07	110	94	4	0	0	0	.2	5	.3		2	3	13	159	-	TICK MARKS (8) ORIENT 124°T L=225M W=15M				
MMNN 39	1331.0	6.0	-	109	010	114	279	M	113	2.70	305	104	9	0	0	0	.3	7	.3		12	4	12	244	8.7					
NNOO 40	1339.0	5.9	-	170	15	279	124	M	107	2.70	288	104	3	0	0	0	.2	7	.2		7	8	18	264	8.6					
OOPP 41	1347.0	6.0	-	170	10	279	119	M	102	2.70	295	101	1	0	0	0	.2	5	<.2		5	4	10	279	8.2					
PPQQ 42	1355.0	6.0	-	10	165	119	274	M	88	2.70	237	86	2	0	0	0	.2	23	.4		3	8	25	114	12.8	12.5	TICK MARKS (1) WHEN 264°T L=200M W=4M			
QQRR 43	1402.6	6.0	-	10	165	119	274	M	84	2.70	226	81	3	0	0	0	.3	5	.3		4	2	15	124	13.1					
RRSS 44	1410.7	6.0	-	165	25	274	134	L	88	2.21	194	85	3	0	0	0	.2	9	.2		3	2	7	274	8.2	13.1	13.0			
SSTT 45	1418.7	6.1	-	165	15	274	124	M	78	2.21	172	76	2	0	0	0	.2	13	.2		6	3	7	274	8.3	13.2				
TTUU 46	1427.0	6.1	-	170	15	274	124	M	64	2.70	172	62	2	0	0	0	.2	8	.2		5	3	7	264	13.0		1 GOUGE TERMINATION WITH PUSH MARKING.			
UUUV 47	1435.0	6.1	-	160	30	269	139	L	44	1.89	93	43	1	0	0	0	.2	6	<.2		5	2	6	134	10.8	13.1				
VVVV 48	1443.2	6.0	-	155	20	264	129	L	45	1.66	74	45	0	0	0	0	<.2	4	<.2		7	6	35	264	10.5	12.8	1 GOUGE TERMINATION (MULTI-INCISION)			

TRACELINE		ICE GOUGE DATA RECORD																				VESSEL		KARLUK			
22		1976 I																				TEMPLATE		3.8 KTS			
DATE																											
260																											
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	HUMBER INCLUSIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MULTI-INCISION GOUGES			DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS				
KM	HOURS MINUTES SECONDS	M	KM	°T	DOM	SUB	HIGH MED LOW	OBS	L	PER KM	NMP	2-5	4-6	6-8	8-10	>10	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°T)	M	M	
WJXX 49	1451.0	6.0	-	109	160/20	269	129	L	57	1.89	107.7	56	1	0	0	0	0	.2	5	<.2	7	6	19	269	10.2/12.6	100	TICK MARKS (1) ORIEN: 279°T L: 125M W: 1M
XXYY 50	1459.0	6.0	-		160/30	269	139	L	54	1.89	102.1	52	2	0	0	0	0	.2	8	.2	6	3	10	139	9.0/13.0		
YYZZ 51	1506.8	5.7	-	211	50/-	261	-	L	21	1.12	23.5	17	4	0	0	0	0	.3	4	.3	1	2	18	341	9.3/12.4		
ZZAA 52	1515.5	5.3	-		45/-	256	-	L	15	1.18	17.7	14	1	0	0	0	0	.2	7	.3	0	-	-	-	9.3/11.5		SONAR QUALITY VERY POOR. NUMBERS MAY BE LOWER THAN TRUE VALUES.
AAABBB 53	1521.0	5.0	-		40/-	251	-	L	16	1.26	20.1	14	2	0	0	0	0	.3	6	.4	0	-	-	-	9.1/10.6		SONAR QUALITY VERY POOR. 2 MIN. OF SEGMENT MISSING. CORRECTION APPLIED.
BBBCCC 54	1532.4	4.6	-		120/-	331	-	L	5	1.04	5.2	5	0	0	0	0	0	<.2	3	<.2	0	-	-	-	7.9/10.0		POINT BBB NOT ON SONAR. 1 MIN. OF SEGMENT MISSING ON SONAR. COUNT ADJUSTED.
CCDDDD 55	1540.6	4.2	-		30/-	241	-	L	16	1.49	23.8	16	2	0	0	0	0	.2	5	.2	0	-	-	-	6.0/9.1		SHALL HOLES IN SEA FLOOR (3) (STRUDLE?)
DDDEEE 56	1549.5	3.9	-		50/-	261	-	L	10	1.12	11.2	10	0	0	0	0	0	<.2	2	<.2	0	-	-	-	6.6/8.2		
EEEEFF 57	1558.2	3.5	-		30/-	241	-	L	4	1.49	6.0	4	0	0	0	0	0	<.2	2	<.2	0	-	-	-	6.2/7.7		
FFFGGG 58	1606.4	3.2	-		15/-	226	-	L	2	2.21	4.4	2	0	0	0	0	0	<.2	3	<.2	0	-	-	-	6.7		
GGGHHH 59	1615.0	2.9	-		30/-	233	-	L	4	1.49	6.0	4	0	0	0	0	0	<.2	2	<.2	1	2	12	233	5.8		STRUDLE SCOURS.
HHHHII 60	1623.5	2.8	-		145/40	356	251	M	16	1.36	21.8	16	0	0	0	0	0	<.2	4	<.2	1	2	12	233	5.7		
IIJJJJ 61	1632.1	2.5	-		140/60	351	271	M	24	1.26	30.2	24	1	0	0	0	0	.2	3	<.2	0	-	-	-	5.4		
JJJKKK 62	1640.0	2.4	-	099	147/-	239	-	L	29	1.26	36.5	29	0	0	0	0	0	<.2	2	<.2	0	-	-	-	4.6		
KKRLLL 63	1650.9	1.7	-		140/-	239	-	L	11	1.26	13.9	11	0	0	0	0	0	<.2	2	<.2	0	-	-	-	50		
LLMMNN 64	1659.1	2.1	-		150/-	249	-	L	5	1.49	7.5	5	0	0	0	0	0	<.2	1	<.2	0	-	-	-	100		STRUDLE SCOURS

22

ICE GOUGE DATA RECORD

1976 II

VESSEL KARLUK
TEMPLATE SIZE 3.8 MTS

DAY 260	SEGMENT	START TIME	START DEPTH M	DISTANCE FROM COAST KM	SHIP'S COURSE °T	OBSERVED ORIENTATION °	ADJUSTED ORIENTATION		ORIENTATION VARIABILITY °	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY PER KM	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH M	MAXIMUM RIDGE HEIGHT M	MAXIMUM SONAR LENGTH M	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR M	SONAR RANGE M
							DOH SUB	DOM SUB					NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER				MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°T)			
MMMMMM 65	1708.6	2.4	-	099	45	244	-	L	8	1.36	10.9	8	0	0	0	0	0	<.2	2	<.2		0	-	-	-	4.3	5.3	100				
NNNNNO 66	1718.5	2.7	-		130	229	-	L	12	1.12	13.4	12	0	0	0	0	0	<.2	2	<.2		0	-	-	-	4.5	6.2					
OOOPPP 67	1728.0	3.4	-		150	249	-	L	4	1.49	6.0	4	0	0	0	0	0	<.2	2	<.2		0	-	-	-	5.9	7.7					
PPPPQQ 68	1737.5	3.4	-		165	264	-	L	4	2.21	8.8	4	0	0	0	0	0	<.2	3	<.2		0	-	-	-	5.1	8.0	50				
QQQQRR 69	1747.0	3.8	-		55	154	-	L	9	1.14	10.3	9	0	0	0	0	0	<.2	2	<.2		0	-	-	-	5.1	9.0					
RRRSSS 70	1756.2	3.3	-		55	130	154	L	88	1.14	100.3	87	1	0	0	0	0	.2	3	<.2		1	3	5	219	5.0						
SSSTTT 71	1805.5	4.3	-		55	135	154	L	60	1.14	68.4	60	0	0	0	0	0	<.2	2	<.2		1	2	4	114	9.6	100					
TTTTUU 72	1814.9	4.4	-	211	45	125	256	M	59	1.18	69.6	58	1	0	0	0	0	.2	3	<.2		0	-	-	-	9.1						
UUUUUU 73	1824.0	4.1	-		50	261	-	L	50	1.12	56.0	46	4	0	0	0	0	.2	5	.2		0	-	-	-	9.0						
VVVVVV 74	1833.7	2.8	-		40	251	-	L	17	1.26	21.4	17	0	0	0	0	0	<.2	2	<.2		0	-	-	-	5.1						
WWWWXX 75	1843.2	2.9	-		45	256	-	L	41	1.18	48.4	40	1	0	0	0	0	.2	2	<.2		0	-	-	-	5.0						
XXXXYY 76	1853.0	2.5	-		40	251	-	L	9	1.26	11.3	9	0	0	0	0	0	<.2	3	<.2		0	-	-	-	5.2						
YYYYZZ 77	1902.5	2.5	-		30	241	-	L	31	1.49	46.12	31	0	0	0	0	0	<.2	5	<.2		0	-	-	-	4.9						
ZZZAAA 78	1912.3	2.4	-		25	236	-	L	34	1.46	56.4	34	0	0	0	0	0	<.2	3	<.2		0	-	-	-	4.3						
END AAA	1922.0	1.4	-																							3.7						

1975

TRACKLINES

RTT-1000

ICE GOUGE DATA RECORD.

1975

VESSEL	KARLUK
TEMPLATE SIZE	4.0 HTB

SEG. SCALE 1:1344

[illegible]

1975

VESSEL	KARLUK
TEMPLATE SIZE	4.0" HT

[illegible]

[illegible]

RTT-1000

ICE GOUGE DATA RECORD

1975

VESSEL	KARLUK
TEMPLATE SIZE	4.0 HTS

SEG. SCALE 1:1106

[illegible]

[illegible]

RTT-1000

TRACKLINE		ICE GOUGE DATA RECORD															VESSEL		KARLUK		TEMPLATE		3.0		4.0		KTS		SEG SCALE = VARIABLE		REMARKS																				
DATE		258		SEGMENT		START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO REFLECTOR	SONAR RANGE																	
KM		M		KM		T		DOM		SUB		LOS		OBS		L		NMP		2-4		4-6		6-8		8-10		>1		MAX		M		M		M		NUMBER		MAXIMUM INCISIONS PER GOUGE		MAXIMUM DISCONTINUITY (M)		DOMINANT ORIENTATION		M		M			
1		1033.0		1.4		5.0		310		-		-		-		-		-		0		0		0		0		0		-		-		-		0		-		-		-		11276		SONAR QUALITY POOR - CAN NOT SEE BOTTOM					
2		1040.9		1.2		4.9		-		-		-		-		-		-		0		0		0		0		0		-		-		0		-		-		-		-		11276		SONAR QUALITY POOR - CAN NOT SEE BOTTOM					
3		1048.0		1.2		5.1		125		75		-		L		13		107		13		0		0		0		0		<.2		1		<.2		10		0		-		-		-		11276		SONAR QUALITY POOR			
4		1055.8		1.5		5.5		130		80		-		L		36		112		40		36		0		0		0		<.2		2		<.2		350		1		2		2		115		-		11276			
5		1103.0		2.0		5.8		278		165		-		L		100		2.81		2.81		100		0		0		0		<.2		2		<.2		235		3		2		3		88		-		11276		(1:818) .64 KM OF SONAR AT 50M RANGE. ADJUSTED TO 1 KM AT 50M RANGE. (GOUGE DENSITY NOT RELIABLE) - A	
6		1110.8		2.0		6.0		170		88		73		L		79		270		213		79		0		0		0		<.2		3		<.2		525		0		-		-		-		11276		SMALL STRUDEL (FEW)			
7		1117.2		2.2		6.0		165		83		68		L		51		221		112		51		0		0		0		<.2		2		<.2		550		1		2		3		88		-		11276			
8		1124.0		2.3		6.0		165		83		68		L		51		221		112		51		0		0		0		<.2		5		<.2		310		1		2		2		93		-		11276		HEAVY STRUDEL SCOURING - MANY INFILLED (CORRECTED TO 1 KM DENSITY) 10 CM GOUGE AND 10 CM RIDGE ON BATS.	
9		1131.0		2.5		6.2		160		78		-		L		76		229		174		76		0		0		0		<.2		3		<.2		210		2		4		6		93		-		50		SEG. IS .5 KM AT 50M RANGE AND .5 KM AT 100M RANGE (ADJUSTMENT MADE) HEAVY STRUDEL SCOURING - INFILLED	
10		1137.8		3.1		7.0		003		70		53		L		59		99		58		58		1		0		0		.2		2		<.2		325		2		3		8		08		-		11276		VERY HEAVY STRUDEL SCOURING - DIFFICULT TO OBSERVE GOUGES AT 100M RANGE. PROBABLY A HIGHER GOUGE DENSITY THAN OBSERVED.	
11		1144.15		3.9		8.1		40		43		128		L		116		126		146		114		2		0		0		.2		6		.3		300		4		4		25		53		5.1		11276		HEAVY STRUDEL SCOURING - PRESSURE RIDGE SCOUR (475M WIDE)	
12		1151.2		4.6		9.0		75		78		103		L		69		98		67		69		0		0		0		<.2		2		<.2		260		1		2		5		148		7.0		11276		LIGHT STRUDEL SCOURING TICK MARKS(1) 88°T L 148M W 2M	
13		1158.0		5.1		10.1		65		68		118		L		47		101		47		47		0		0		0		<.2		3		<.2		260		2		4		17		23		7.5		11276		SHORT SEGMENT (ONLY 4 MTS) - POSSIBLE NAVIGATION ERROR? TICK MARKS(1) 98°T L 15M W 3M	
14		1202.4		6.5		11.0		110		113		68		M		108		99		106		106		2		0		0		.2		2		.2		225		2		2		13		78		7.4		11276		TICK MARKS(1) 88°T L 180M W 3M	
15		1211.0		6.1		12.0		80		83		103		L		62		98		60		58		4		0		0		.3		3		.2		210		1		2		11		83		8.3		11276			
16		1221.15		6.6		13.0		95		98		68		L		63		99		62		61		2		0		0		.2		3		.2		215		1		2		3		18		9.0		11276		(SMALL SHOAL AT PT. F)	

(SMALL SHOAL AT PT. F)

TRACKING		ICE GOUGE DATA RECORD																				VESSEL		KARLUK																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
12		1975																				2.0		KTB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
DATE		258																						TEMPLATE		2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
SEGMENT		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF OBSERVATIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH		MAXIMUM RIDGE HEIGHT		MAXIMUM GOUGE LENGTH		MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR		SONAR RANGE		REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
KM		HOURS MINUTES TENTHS		M		KM		T		DOM		SUB		DOM		SUB		DOM		SUB		NMP		2-4		4-6		6-8		8-10		>1		MAX		M		M		M		NUMBER		MAXIMUM INCISIONS PER GOUGE		MAXIMUM DISRUPTION WIDEST (M)		DOMINANT ORIENTATION		DEPTH TO FIRST REFLECTOR		M		M																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
17 QR		1229 17		7.1		14.0		003		100		60		103		63		L		68		.98		66		63		4		1		0		0		.4		6		.4		227		0		-		-		9.1		(1:1270)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
18 RS		1238 10		7.2		15.0				105		75		108		78		L		69		.98		67		59		8		2		0		0		.5		9		.3		228		1		2		3		123		9.4		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
19 ST		1245 15		7.8		16.0				110		60		113		63		M		58		.99		57		57		1		0		0		.2		6		.3		230		0		-		-		11.0		(1:1140)		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
20 TU		1250 17		8.0		16.9				100		50		103		53		M		43		.98		42		38		10		0		0		.3		10		.3		270		0		-		-		10.2		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
21 UV		1256 12		8.2		18.0				50		100		53		103		L		54		112		60		48		6		0		0		.2		8		.2		310		2		3		30		43		10.4		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
22 VW		1303 13		8.6		18.9				120		75		123		78		L		81		104		84		75		6		0		0		.2		5		.2		768		1		2		15		108		10.9		(1:1270)		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
23 WX		1311 18		8.9		19.9				105		85		108		88		L		57		.98		55		52		5		0		0		.2		3		.3		223		2		2		7		118		11.1		TICK MARKS (8) 103°T L=213M W=7M																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
24 XY		1320 10		9.1		20.9				110		100		73		103		L		47		.99		46		43		4		0		0		.2		5		.2		352		3		2		10		48		10.9		TICK MARKS (3) 93°T L=205M W=11M																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
25 YZ		1327 19		9.2		21.9				110		90		113		93		L		51		.99		50		50		1		0		0		.2		2		.2		250		3		2		18		108		11.4		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
26 ZAA		1335 14		9.5		22.9				115		70		118		73		L		60		101		60		58		1		1		0		.5		6		.3		370		2		5		14		163		11.5		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
27 ABB		1343 11		9.7		24.0				110		70		113		73		L		81		.99		80		81		0		0		.2		5		.3		100		2		4		11		23		11.6		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
28 BCC		1351 10		9.9		25.0				100		70		103		73		M		73		.98		71		70		3		0		.2		3		.2		292		2		3		15		103		11.7		(ONLY .5 KM OF SEG. AND PATHOGRAM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
29 CDD		1359 10		-		26.0				90		70		93		73		L		57		100		57		52		5		0		.2		5		.2		280		0		-		-		-		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
30 DEE		1407 13		9.8		27.0				120		90		123		93		L		39		104		40		37		2		0		.2		2		.3		235		0		-		-		11.8		(PT. CC NOT ON PATHOGRAM - ONLY .5 KM OF PATHOGRAM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
31 EFF		1415 19		10.0		27.8				115		80		118		83		L		54		101		54		48		6		0		.3		5		.2		225		1		2		7		118		11.8		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
32 FGG		1422 19		10.0		28.8				105		80		108		83		L		63		.98		61		63		10		0		.3		3		.4		200		1		2		10		118		13.1		(FUNNY SUB BOTTOM)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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1975

TEMPLATE SIZE	3.0 4.0 5.1	NT
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DATE		INCISION DEPTH DISTRIBUTION METERS																	MULTI-INCISION GOUGES				VESSEL		KARLUK					
258		START TIME	START DEPTH	DISTANCE FROM SHIP'S COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION 1-2-4	INCISION 1-6	INCISION 6-8	INCISION 8-10	INCISION >1	MAX	MAXIMUM INCISION WIDTH	MAXIMUM PLACER HEIGHT	MAXIMUM LENGTH	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM PLACER DISRUPTION DISTANCE	DOMINANT ORIENTATION	DEPTH OF FIRST REFLECTOR	SCORE	RANGE	REMARKS		
SEGMENT	KM	HOURS MINUTES TENTHS	M	KM	T	DOH	SUB	HIGH LOW	OBS	L	PAR KM	NMP	2-4	1-6	6-8	8-10	>1	MAX	M	M	M					M	M			
33	GGHH	1429	.9	102	29.8	90.3	75	105	78	108	M	67	.98	66	58	9	0	0	0	0	.2	4	.2	200	0	-	-	13.1	100	(FUNNY SUB BOTTOM) TICK MARKS (3) 98° T L=205M W=12M
34	HHII	1437	.0	103	30.7		130	80	133	83	L	63	112	70	57	6	0	0	0	0	.2	10	.3	300	0	-	-	13.2	100	(FUNNY SUB BOTTOM)
35	IIJJ	1443	.8	105	31.7		110	55	113	58	L	47	.99	46	43	4	0	0	0	0	.2	7	.2	392	0	-	-	13.4		(FUNNY SUB BOTTOM) TICK MARKS (1) 93° T L=200M W=11M
36	JJKK	1449	.2	107	32.7		115	30	118	33	L	71	101	71	63	8	0	0	0	0	.2	10	.2	450	2	2	22	138	14.0	(FUNNY SUB BOTTOM) TICK MARKS (4) 58° T L=265M W=12M
37	KKLL	1455	.5	107	33.7	90.0	70	115	70	115	M	118	.99	116	93	15	10	0	0	0	.5	7	.4	262	4	3	17	115	14.5	(FUNNY SUB BOTTOM) TICK MARKS (2) 100° T L=165M W=6M SQUAR DOWN 30 SEC. - SEG. ADJUSTED TO 1 KM
38	LLMM	1504	.0	107	34.6		110	45	110	95	L	76	.99	75	57	17	2	0	0	0	.4	7	.4	335	5	2	19	55	14.4	(FUNNY SUB BOTTOM)
39	MMNN	1512	.2	108	35.6		75	100	75	100	M	72	.98	70	44	19	7	2	0	0	.7	8	.4	315	2	3	13	120	15.7	TICK MARKS (1) 85° T L=204M W=18M
40	NNOO	1519	.7	109	36.6		65	80	65	80	L	102	1.01	103	72	18	10	2	0	0	.7	11	.5	322	3	4	14	60	18.1	LOWER SUB BOTTOM REFLECTOR BEGINS MIDWAY THROUGH THE SEGMENT. FUNNY SUB BOTTOM SMOOTHS OUT IN UPPER REFLECTOR
41	OOPP	1528	.0	112	37.7		115	60	115	60	M	121	.99	119	85	29	6	1	0	0	.6	7	.5	380	5	5	40	55	14.7	TICK MARKS (1) 80° T L=260M W=22M
42	PPQQ	1536	.0	116	38.7		85	100	85	100	L	71	.98	69	48	17	6	0	0	0	.5	15	.7	335	1	2	21	130	15.0	TICK MARKS (1) 95° T L=213M W=4M
43	QQRR	1544	.0	117	39.7		85	110	85	110	L	55	.98	53	37	14	4	0	0	0	.5	7	.4	260	1	2	13	125	15.1	
44	RRSS	1551	.5	122	40.7		70	105	70	105	M	80	.98	78	55	18	6	1	0	0	.6	6	.5	285	3	2	30	75	16.5	
45	SSTT	1559	.8	123	41.7		70	115	70	115	M	63	.98	61	46	17	0	0	0	0	.3	5	.3	168	3	3	25	130	16.6	

1973

TRACKLINES

SIMRAD

ICE GOUGE DATA RECORD

1973

VESSEL	LDON
TEMPLATE SIZE	5.1 HTS

SEA SCALE 1:1953 & 1:1736

TRACE LINE		ICE GOUGE DATA RECORD														1973		VESSEL		LDON																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
DATE		232		SEGMENT		INCISION DEPTH DISTRIBUTION METERS														MAXIMUM INCISION WIDTH		MAXIMUM INCISION DEPTH		MAXIMUM GOUGE LENGTH		MULTI-INCISION GOUGES		DEPTH TO REFLECTOR		SONAR RANGE		REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
KM		M		T		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB		DOH		SUB	

SIMRAD

ICE GOUGE DATA RECORD

1973

VESSEL	LOON
TEMPLATE SIZE	5.1 HTG.

SEG. SCALE 1:1953 & 1:1736

FRANCHISE		ICE GOUGE DATA RECORD																				1993									
DATE		START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VALIDITY	NUMBER OF OBS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM MIDDLE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES					DEPTH TO FIRST REFLECTOR	SONAR RANGE
SEGMENT	KM											M	KM	°T	DOM SUB	DOM SUB	HIGH LOW	OBS	L	PER KM	NMP				2-4	4-6	6-8	8-10	>1		
1	AB	1923	.0	2.5	-	239	/	254	-	L	1	1.82	1.8	1	0	0	0	0	0	<.3	1	<.3	25	0	-	-	-	-	150		
2	BC	1930	.6	3.6	-		/	264	-	L	2	1.44	2.9	2	0	0	0	0	0	<.3	1	<.3	25	0	-	-	-	-			
3	CD	1936	.2	4.0	-		/	-	-	-	0	-	0	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			
4	DE	1942	.8	4.5	-	219	/	254	-	L	5	1.22	6.1	5	0	0	0	0	0	<.3	1	<.3	25	0	-	-	-	-			
5	EF	1951	.6	4.6	-		/	254	-	L	1	1.22	1.2	1	0	0	0	0	0	<.3	1	<.3	30	0	-	-	-	-			
6	FG	1957	.8	4.6	-		/	-	-	-	0	-	0	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			
7	GH	2007	.8	3.4	-		/	-	-	-	-	-	-	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			
8	HI	2042	.0	4.1	-	343	/	98	-	L	1	.97	1.0	1	0	0	0	0	0	<.3	1	<.3	52	0	-	-	-	-			
9	IJ	2048	.2	4.6	-		/	-	-	-	0	-	0	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			
10	JK	2054	.6	4.5	-		/	-	-	-	0	-	0	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			
11	KL	2103	.4	3.3	-	318	/	-	-	-	0	-	0	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			
12	LM	2109	.0	2.6	-	273	/	273	-	L	4	3.33	13.3	4	0	0	0	0	0	<.3	1	<.3	275	0	-	-	-	-			
13	MN	2116	.4	3.8	-		/	303	-	L	2	1.22	2.6	2	0	0	0	0	0	<.3	1	<.3	40	0	-	-	-	-			
14	NO	2124	.1	4.1	-		/	-	-	-	0	-	0	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			
15	OP	2131	.9	4.3	-		/	-	-	-	0	-	0	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			
16	PQ	2139	.9	4.5	-		/	-	-	-	0	-	0	-	-	-	-	-	<.3	-	<.3	-	0	-	-	-	-	-			

- SEE RECORD - NO SIGNAL THIS SEG.
SIGNAL AREA -

DEENSITY DOES NOT SEEM REPRESENTATIVE

FUNNY BOT TOIA ?

1973

NO 67

Si KTO

[illegible]

5/16/1940

9		ICE GOUGE DATA RECORD															1973			SONAR RANGE 500' ± 150M					VESSEL LOON		TEMPLATE SIZE 4.0		SEG. SCALE 1:1736	
DATE	233	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH	MAXIMUM HEIGHT	MAXIMUM LENGTH	MULTI-INCISION GOUGES			DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS (SIMPAD)			
SEGMENT	KM	HOURS MINUTES TENTHS	M	KM	°T	°SUD	°DOM	°SUB	°HLS	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°T)		M	M	
AB 1	0858.0	2.8	-	359	55	-	52	-	L	2	1.0	2.0	2	0	0	0	0	0	0	2.3	5	4.3	100	0	-	-	-	-	150	GOUGES SEEN MAY BE RIPPLES
BC 2	0906.1	5.5	-		-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-		
CD 3	0914.2	6.1	-		60	-	57	-	L	12	.98	1.8	12	0	0	0	0	0	0	4.3	2	4.3	300	0	-	-	-	-		GOUGES SEEN MAY BE RIPPLES
DE 4	0922.3	5.5	-		135	-	132	-	L	5	1.09	5.5	5	0	0	0	0	0	0	4.3	3	4.3	50	0	-	-	-	-		
EF 5	0930.4	4.5	-		120	-	117	-	L	2	.98	2.0	2	0	0	0	0	0	0	4.3	1	4.3	25	0	-	-	-	-		FUNNY BOTTOM (BOULDERS)
FG 6	0938.5	4.8	-	292	145	-	99	-	L	1	1.22	1.2	1	0	0	0	0	0	0	4.3	4	4.3	242	0	-	-	-	-		(CHANGE COURSE AT 0940.0) FUNNY BOTTOM
GH 7	0946.6	4.3	-	007	40	-	47	-	L	24	1.15	3.1	27	0	0	0	0	0	0	4.3	2	4.3	50	0	-	-	-	-		(CHANGE COURSE AT 0950.0) FUNNY BOTTOM
HI 8	0954.7	5.0	-		45	-	52	-	L	20	1.09	2.1	20	0	0	0	0	0	0	4.3	3	.3	235	0	-	-	-	-		FUNNY BOTTOM
IJ 9	1002.8	4.6	-		40	-	47	-	L	9	1.15	1.4	9	0	0	0	0	0	0	4.3	4	4.3	250	0	-	-	-	-		FUNNY BOTTOM
JK 10	1010.9	4.5	-		45	-	52	-	L	18	1.09	1.6	16	1	1	0	0	0	0	.6	3	.5	120	0	-	-	-	-		FUNNY BOTTOM (GOUGING IN BOULDER ZONE) MAY BE THAT RECENT SAND MOVEMENT HAS COVERED
KL 11	1019.0	6.0	1.1		40	-	47	-	L	17	1.15	1.9	17	0	0	0	0	0	0	4.3	10	.5	300	0	-	-	-	-		FUNNY BOTTOM (GOUGING IN BOULDER PATCH AREA)
LM 12	1027.1	7.8	1.9		30	-	37	-	L	10	1.32	1.2	10	0	0	0	0	0	0	4.3	5	4.3	100	0	-	-	-	-		(CHANGE SPEED TO 4.5 KTS @ 1030.0) FUNNY BOTTOM (GOUGING IN BOULDERS)
MN 13	1034.7	9.7	2.6		45	-	52	-	L	3	1.09	3.3	3	0	0	0	0	0	0	4.3	1	4.3	40	0	-	-	-	-		(CIRCLED FROM 1038.0 TO 1042.0) FUNNY BOTTOM (SAND INCOMPLETE - ADJUSTED TO 1 KM)
NO 14	1046.9	12.0	3.5		40	-	47	-	L	17	1.15	1.6	17	0	0	0	0	0	0	4.3	5	4.3	702	0	-	-	-	-		FUNNY BOTTOM (GOUGING ONLY SEEN IN BOULDER PATCH) - SAND RIPPLES MAY COVER GOUGING IN OTHER
OP 15																														

1973

LOON

4.5

KT4

[illegible]

[illegible]

SIMR/ED

ICE GOUGE DATA RECORD

1973

SONAR RANGE 500' $\approx$ 150M

VESSEL	LOON
TEMPLATE SIZE	4.5 KTB

SEG. SCALE 1:1953

REMARKS: (S/M/RAD)

[illegible]

SIMRAD

ICE GOUGE DATA RECORD

1973

VESSEL	LOON
TEMPLATE SIZE	4/5 KTS.

SEG. SCALE 1:1953

TRACKLINE

11

ICE GOUGE DATA RECORD

1973

DATE	233	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION	VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	SIMRAD RESOLUTION = .3+(M) INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE
SEGMENT	KM	HOURS MINUTES SECONDS	M	KM	T	DOM SUB	DOM SUB	HIGH MED LOW	OB	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION	M	M					
AB 1	1734.0	6.6	0.8	0.53	35	-	88	-	L	6	1.22	7.3	6	0	0	0	0	0	<.3	1	<.3	225	0	-	-	-	-	150				
BC 2	1746.2	7.0	1.2		35	-	88	-	L	5	1.22	6.1	5	0	0	0	0	0	<.3	2	.6	19	0	-	-	-	-					
CD 3	1748.4	8.8	2.0		50	-	103	-	L	5	1.04	5.2	5	0	0	0	0	0	<.3	1	<.3	125	0	-	-	-	-					
DE 4	1755.6	9.8	2.6		50	-	103	-	L	5	1.04	5.2	3	0	2	0	0	0	.6	1	.3	155	0	-	-	-	-					
EF 5	1802.8	12.0	3.2		30	-	83	-	L	6	1.32	7.9	4	0	2	0	0	0	.5	5	.4	50	0	-	-	-	-					
FG 6	1810.0	13.6	3.5		160/40		213	93	L	31	1.60	49.6	30	1	0	0	0	0	.3	4	<.3	600	1	2	8	223	-					
GH 7	1817.2	16.3	3.9		30/150		83	203	M	69	1.32	91.1	69	0	0	0	0	0	<.3	8	.3	190	3	2	8	73	-					
HI 8	1824.4	18.4	4.5		35/160		88	213	M	76	1.22	92.7	76	0	0	0	0	0	<.3	10	<.3	215	1	2	5	63	-					
II.75 9	1831.6	20.8	5.2		40/130		93	183	H	115	1.15	132.3	111	4	0	0	0	0	.3	12	.5	215	1	2	5	63	-					
I.75 END	1837.0	21.6	5.7																													

REMARKS (SIMRAD)

RANGE GIVEN: 500' (=152 M)

FUNNY BOTTOM (BOULDERS)

POSSIBLE BOULDERS ON SIMRAD BUT NOT SEEN ON SONAR

SONAR PICKING UP SMALL DOTS THAT PERSIST TO END OF LINE.

FUNNY BOTTOM (BOULDERS)

SIMRAD SHOWS WISKEYS

SIMRAD WISKEYS

(Segment adjusted to one kilometer)

SIMRAD

ICE GOUGE DATA RECORD

1973

SIMRAD

ICE GOUGE DATA RECORD

1973

[illegible]

SIMRAE

ICE GOUGE DATA RECORD

1973

VESSEL	LOON
TEMPLATE SIZE	45 HT

SEG. SCALE 1:1953

14		ICE GOUGE DATA RECORD																		1973		VESSEL		LOON																											
DATE		234		SEGMENT		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF INCISIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH		MAXIMUM HEIGHT		MAXIMUM LENGTH		MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR		SONAR RANGE		REMARKS	
KM		M		KM		°T		°		°		°		°		°		°		°		°		°		°		°		°		°		°		°		°		°		°		°							
AB	1	1630.0	34.5	28.2	234	45	10	299	244	L	78	1.09	.85	36	27	11	3	1	0	.8	5	.9	335	1	13	60	244	-	150	SONAR QUALITY POOR																					
BC	2	1637.2	34.0	22.3		40	-	274	-	L	51	1.15	.58	19	16	11	4	2	1	1.0	4	.7	400	1	2	15	275	-		SONAR QUALITY POOR																					
CD	3	1644.4	33.0	21.3		45	-	279	-	L	86	1.09	.93	42	24	11	7	2	0	.9	17	.9	375	3	3	20	284	-		SONAR FOR FIRST .5 KM OF SEG. - ADJUSTED TO ONE KILOMETER																					
DE	4	1651.6	32.3	20.2		40	-	274	-	L	53	1.15	.61	13	27	6	5	2	0	.9	15	.9	325	3	5	30	264	-	150	SONAR FOR LAST .75 KM OF SEG. - ADJUSTED TO ONE KM - D'NOT ON SONAR RANGE VARIATIONS LOWER COUNT RELIABILITY																					
EF	5	1658.8	31.5	19.2		35	-	269	-	L	37	1.22	.45	9	21	6	1	0	0	.6	15	.4	295	1	4	25	249	-	150	SONAR QUALITY POOR - GOUGE COUNT LOW DUE TO SONAR ISS IN SOME PARTS OF THIS SEGMENT																					
FG	6	1706.0	29.8	18.2		60	-	294	-	L	50	.98	.49	18	20	10	2	0	0	.7	10	.6	328	1	6	20	254	-		SONAR QUALITY POOR -																					
GH	7	1713.2	29.5	17.2		35	55	269	289	M	58	1.22	.70	16	26	9	5	1	1	1.1	10	.6	610	1	5	25	254	-																							
HI	8	1720.4	29.1	16.2		40	-	274	-	L	69	1.15	.79	42	11	7	4	3	2	1.1	7	1.3	440	1	5	35	244	-																							
IJ	9	1724.6	26.1	15.1		40	20	274	254	M	105	1.15	.8	67	17	7	5	7	2	1.2	12	1.2	490	5	1	50	254	-																							
JK	10	1734.8	26.9	14.1		50	20	284	254	L	101	1.04	.8	48	24	6	7	7	9	1.6	20	1.2	510	4	3	10	264	-																							
KL	11	1742.0	25.1	13.0		95	0	279	234	H	94	1.09	.85	47	32	7	6	2	0	.9	7	.7	950	6	7	50	234	-																							
LM	12	1749.2	24.0	12.0		45	175	279	049	M	114	1.09	.8	70	28	12	2	2	0	1.0	18	1.0	340	6	19	130	049	-		STANDARD SIGNAL AT END OF SEGMENT. CHANGE IN GOUGE DENSITY AND SIZE.																					
MN	13	1756.4	20.2	11.0		40	5	274	239	L	27	1.15	.31	27	0	0	0	0	0	2.3	2	2.3	130	1	2	2	239	-																							
NO	14	1802.6	19.0	10.1		45	-	274	-	L	16	1.07																																							

1973

VESSEL	LOON
TEMPLATE SIZE	4.5 HTS

[illegible]

[illegible]

1972

TRACKLINES

1972

 

NYA

TRACELINE		ICE GOUGE DATA RECORD																		1972		VESSEL		LOON			
DATE																				TEMPLATE		SIZE					
SEGMENT																				NUMBER		MULTI-INCISION CUTS		DEPTH TO		SONAR	
KM																				INCISION		DISTRIBUTION		METERS		REMARKS	
START TIME																				MAXIMUM		MAXIMUM		MAXIMUM		MAXIMUM	
START DEPTH																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
DISTANCE FROM COAST																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
SHIP'S COURSE																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
OBSERVED ORIENTATION																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
ADJUSTED ORIENTATION																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
T																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
ORIENTATION VARIABILITY																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
NUMBER OF INCISIONS																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
CORRECTIVE FACTOR																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
GOUGE DENSITY																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
NMP																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
2-4																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
4-6																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
6-8																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
8-10																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
10-12																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
12-14																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
14-16																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
16-18																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
18-20																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
20-22																				INCISION		DISTRIBUTION		DISTRIBUTION		DISTRIBUTION	
 	

ICE GOUGE DATA RECORD

1972

SEGS. SCALE 1:1736

VESSEL	LOON
TEMPLATE SIZE	4.0 KTS

TRACKLINE		ICE GOUGE DATA RECORD															1972										SEB, SCALE 1:1736										VESSEL		LOON																		
DATE		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		CORRECTED ORIENTATION		ADJUSTED ORIENTATION		T		ORIENTATION VARIABILITY		NUMBER OF INCISIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH		MAXIMUM RIDGE HEIGHT		MAXIMUM GOUGE LENGTH		MULTI-INCISION GOUGES					DEPTH TO FIRST REFLECTOR		SOURCE RANGE		REMARKS								
SEGMENT		KM		M		KM		°T		DOM		SUB		DOM		SUB		OBS		L		PER KM		NMP		2-4		4-6		6-8		8-10		>1		MAX		M		M		M		NUMBER		MAXIMUM INCISIONS PER GOUGE		MAXIMUM DISRUPTION WIDTH (MM)		DOMINANT ORIENTATION		DEPTH TO FIRST REFLECTOR		SOURCE RANGE		REMARKS	
AB		1400.0		7.0		-		053		105		158		-		L		30		96		28		30		0		0		0		0		0		<1.3		5		<1.3		0		-		-		-		500'		SIMRAD ONLY PHOTOGRAPH - NO FIRST REFLECTOR					
BC		1407.8		7.1		-		110		163		103		L		25		96		24		25		0		0		0		0		0		<1.3		4		<1.3		0		-		-		-											
CD		1415.0		7.6		-		50		103		-		L		17		104		7.3		7		0		0		0		0		0		<1.3		2		<1.3		0		-		-		-											
DE		1423.1		8.5		-		045		105		-		L		27		132		35		27		0		0		0		0		0		<1.3		2		<1.3		0		-		-		-											
EF		1431.0		8.5		-		45		120		-		L		38		109		41		38		0		0		0		0		0		<1.3		2		<1.3		0		-		-		-											
FG		1437.4		8.0		-		40		115		-		L		64		115		73		64		0		0		0		0		0		<1.3		2		<1.3		0		-		-		-											
GH		1447.0		6.4		-		155		125		280		L		68		101		68		68		0		0		0		0		0		<1.3		4		<1.3		0		-		-		-											
HI		1457.0		5.9		-		130		285		-		L		21		101		21		21		0		0		0		0		0		<1.3		3		<1.3		0		-		-		-											
IJ		1505.0		4.3		-		125		280		-		L		37		101		37		37		0		0		0		0		0		<1.3		4		<1.3		0		-		-		-		250'									
JA		1515.0		7.5		-		140		295		-		L		8		115		9.2		8		-		-		-		-		-		2		-		0		-		-		-		200'		NO PHOTOGRAPH THIS SEGMENT									
KL		1525.5		-		-		-		-		-		-		-		-		-		-		0		0		0		0		0		0		0		0		0		0		0		-		-		-		NO PHOTOGRAPH - K NOT ON TRACK					
LM		1535.0		-		-		095		-		-		-		-		-		-		-		0		0		0		0		0		0		0		0		0		0		0		-		-		-							

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ICE GOUGE DATA RECORD

1972

29 MAY 1979

VESSEL

LOON

TEMPLATE
SIZE

3.4 HTS

SEGMENT	KM	START TIME	START DEPTH M	DISTANCE FROM PORT M	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH M	MAXIMUM RIDGE HEIGHT M	MAXIMUM GOUGE LENGTH M	MULTI-INCISION GOUGES					DEPTH TO FAULT REFLECTOR M	SWATH M	RANGE M			
												NMP	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24			NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISTANCE BETWEEN INCISIONS M	DOMINANT DIRECTION (°)							
AB	0927.0	3.5	-	282	40	-	322	-	L	52	1.15	50	2	0	0	0	0	0	0	0	0	0	0	3	4.3	0	0	0	0	0	0	0	500'			
BC	0936.8	5.6	-		05	-	287	-	L	19	2.59	49	19	0	0	0	0	0	0	0	0	0	0	3	4.3	0	0	0	0	0	0	0				
CL	0945.5	7.1	-		35	-	317	092	L	14	1.22	17	14	0	0	0	0	0	0	0	0	0	0	3	4.3	0	0	0	0	0	0	0				
DE	0951.2	8.5	-		150	-	072	302	I	10	1.32	13	10	0	0	0	0	0	0	0	0	0	0	4.3	2	4.3	0	0	0	0	0	0	0			
EF	1002.5	9.8	-		30	-	32	-	L	7	1.32	9.2	7	0	0	0	0	0	0	0	0	0	0	4.3	6	4.3	0	0	0	0	0	0	0			
FG	1011.2	11.2	-		145	-	067	-	L	6	1.22	7.3	6	0	0	0	0	0	0	0	0	0	0	4.3	4	4.3	0	0	0	0	0	0	0			
GH	1019.6	10.5	-		165	-	087	-	L	3	1.82	5.5	3	0	0	0	0	0	0	0	0	0	0	4.3	4	4.3	0	0	0	0	0	0	0			
HI	1028.1	12.2	-		140	-	062	-	L	11	1.15	12	10	1	0	0	0	0	0	0	0	0	0	3	3.5	0	0	0	0	0	0	0				
IJ	1036.4	12.5	-		35	-	317	037	L	17	1.22	20	17	0	0	0	0	0	0	0	0	0	0	4.3	6	4.3	0	0	0	0	0	0	0			
JK	1044.5	12.6	-		155	-	077	-	L	3	1.44	4.3	3	0	0	0	0	0	0	0	0	0	0	4.3	2	4.3	0	0	0	0	0	0	0			
KL	1052.5	12.3	-		170	-	092	-	L	3	2.12	6.3	3	0	0	0	0	0	0	0	0	0	0	4.3	2	4.3	0	0	0	0	0	0	0			
LM	1101.3	13.0	-		135	-	057	-	L	4	1.09	4.4	4	0	0	0	0	0	0	0	0	0	0	4.3	3	4.3	0	0	0	0	0	0	0			
MN	1109.0	13.5	-		135	-	057	-	L	7	1.09	7.6	7	0	0	0	0	0	0	0	0	0	0	4.3	4	4.3	0	0	0	0	0	0	0			
NO	1116.1	14.0	-		140	-	062	-	L	4	1.15	4.6	4	0	0	0	0	0	0	0	0	0	0	4.3	4	4.3	0	0	0	0	0	0	0			
OP	1123.7	10.8	-	210	115	-	335	-	L	1	.97	1.0	1	0	0	0	0	0	0	0	0	0	0	4.3	2	4.3	0	0	0	0	0	0	0			
PQ	1131.5	10.2	-	280	-	-	-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

REMARKS

SIMPAL PATHOLOGY UNIT -
110 FIRST AFFLICTOR

1972

4031

3.4 KT

REMARKS

TRACELINE		ICE GOUGE DATA RECORD																				REMARKS					
16		1972																				VESSEL LOON					
209																						TEMPLATE SIZE 4.0 KTB					
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GULCH DEPTH	MULTI-INCISION GOUGES		DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS		
KM	MM	M	KM	°T	°OH	°SUB	°OH	°SUB	°OH	°SUB	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION		M	M
AB 1	0842.0	1.5	-	261	150	051	-	L	7	1.32	9.2	7	0	0	0	0	0	4.2	2	4.3	0	-	-	-	-	150	RANGE = 500 FT. = ~150 M (RANGE ONLY - NO SUB BOTTOM)
BC 2	0847.7	1.8	-	-	25	286	-	L	2	1.44	2.9	2	0	0	0	0	0	4.3	1	4.3	0	-	-	-	-	-	
CD 3	0855.8	1.7	-	074	20	074	-	L	5	1.60	8.0	5	0	0	0	0	0	4.3	3	4.3	0	-	-	-	-	-	2 M HOLD IN SEAFLOOR. GOURIPS ALL AT PT. D.
DE 4	0901.3	1.8	-	-	15	089	244	M	28	1.82	51.0	26	2	0	0	0	0	3	4	4.3	0	-	-	-	-	-	GOODNESS IS ACCURATE (CORRECT TO EAST) (0841): 089°T AT 1.0 M - 244°T AT 1.0 E)
EF 5	0913.8	2.4	-	-	140	214	-	L	19	1.15	21.9	19	0	0	0	0	0	4.3	3	4.3	0	-	-	-	-	-	
FG 6	0923.0	1.6	-	267	140	047	277	M	18	1.15	20.4	18	0	0	0	0	0	4.3	3	4.3	0	-	-	-	-	-	SOME GOOD ANG. APPROX 4° (MAX) SEED (041): 047°T AT 1.0 M - 277°T AT 1.0 E)
GH 7	0932.5	1.6	-	-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	
HI 8	0942.3	1.7	-	001	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	STROBEL SCOUR
IJ 9	0949.4	1.5	-	-	90	091	-	L	2	1.00	2.0	1	0	1	0	0	0	5	17	4.3	0	-	-	-	-	-	STROBEL SCOUR
JK 10	0956.0	2.1	-	-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	STROBEL SCOUR
KL 11	1005.0	1.6	-	-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	
LM 12	1011.5	1.8	-	291	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	STROBEL SCOUR
MN 13	1017.5	7.0	-	-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	STROBEL SCOUR IN P.M. GARDIAN WAVES BEGIN AT 1.0 M (041): 017°T
NO 14	1024.5	7.2	-	-	35	206	-	L	1	1.22	1.2	1	0	0	0	0	0	4.3	2	4.3	0	-	-	-	-	-	(041): 017°T (041): 086°T)
OP 15	1034.0	7.3	-	181	20	211	-	L	3	1.32	4.0	3	0	0	0	0	0	4.3	2	4.3	0	-	-	-	-	-	SEED WAVES IN P.M. (041): 086°T)
PQ 16	1043.2	7.2	-	-	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	

TRACKLINE		ICE GOUGE DATA RECORD																				VESSEL		LOON				
16																						TEMPLATE SIZE		RTB				
DATE																												
209																												
SEGMENT																												
KM																												
START TIME																												
START DEPTH																												
DISTANCE FROM COAST																												
SHIP'S COURSE																												
OBSERVED ORIENTATION																												
ADJUSTED ORIENTATION																												
ORIENTATION VARIABILITY																												
NUMBER OF INCISIONS																												
CORRECTION FACTOR																												
GOUGE DENSITY																												
INCISION DEPTH DISTRIBUTION METERS																												
MAXIMUM INCISION WIDTH																												
MAXIMUM RIDGE HEIGHT																												
MAXIMUM GOUGE LENGTH																												
MULTI-INCISION GOUGES																												
NUMBER																												
MAXIMUM INCISIONS PER GOUGE																												
MAXIMUM DISRUPTION WIDTH (M)																												
DOMINANT ORIENTATION (°)																												
DEPTH TO FIRST REFLECTOR																												
SONAR RANGE																												
REMARKS																												
OP 17		1050.7	1.6	—	301	—	—	—	0	—	0	—	—	—	—	—	—	—	—	—	—	0	—	—	—	—	150	
RS 18		1100.0	1.8	—	—	—	—	—	0	—	0	—	—	—	—	—	—	—	—	—	—	0	—	—	—	—		STRUBEL SCOOPS.
ST 19		1109.4	2.3	—	—	—	—	—	0	—	0	—	—	—	—	—	—	—	—	—	—	0	—	—	—	—		STRUBEL SCOOPS.
TU 20		1119.4	2.3	—	155	—	096	—	L	4	1.44	5.8	4	0	0	0	0	0	<.3	1	<.3	0	—	—	—	—		
UV 21		1128.3	2.6	—	001	135	—	136	—	L	3	1.09	3.3	3	0	0	0	0	<.3	1	<.3	0	—	—	—	—		
VW 22		1139.3	1.5	—	195	—	—	—	0	—	0	—	—	—	—	—	—	—	—	—	—	0	—	—	—	—		STRUBEL SCOOPS.
WX 23		1145.0	2.7	—	—	—	—	—	0	—	0	—	—	—	—	—	—	—	—	—	—	0	—	—	—	—		
XY 24		1153.2	2.1	—	316	—	—	—	0	—	0	—	—	—	—	—	—	—	—	—	—	0	—	—	—	—		
YZ 25		1201.0	1.9	—	135	—	091	—	L	1	1.09	1.1	1	0	0	0	0	0	<.3	3	<.3	0	—	—	—	—		
ZAA 26		1210.0	2.1	—	140	—	096	—	L	1	1.15	1.2	1	0	0	0	0	0	<.3	2	<.3	0	—	—	—	—		HOLE IN SCOFFLORD (50' x 15' x 1.5M)
AABB 27		1219.1	2.5	—	160	—	116	—	L	2	1.60	3.2	2	0	0	0	0	0	<.3	2	<.3	0	—	—	—	—		STRUBEL SCOOPS.
BBCC 28		1229.8	2.1	—	150	—	106	—	L	7	1.32	9.2	7	0	0	0	0	0	<.3	3	<.3	0	—	—	—	—		
CCDD 29		1236.0	2.5	—	155	—	111	—	L	2	1.44	2.9	2	0	0	0	0	0	<.3	7	<.3	0	—	—	—	—		STRUBEL SCOOPS.
DDFF 30		1244.6	2.5	—	159	—	040	—	L	2	1.32	2.6	2	0	0	0	0	0	<.3	5	<.3	0	—	—	—	—		STRUBEL SCOOPS.
EEFF 31		1252.9	2.1	—	10	—	260	050	L	6	2.12	1.1	6	0	0	0	0	0	<.3	2	<.3	0	—	—	—	—		STRUBEL SCOOPS.
FFGG 32		1302.1	2.5	—	20	—	270	050	L	9	1.60	1.4	9	0	0	0	0	0	<.3	4	<.3	0	—	—	—	—		

16

ICE GOUGE DATA RECORD

1972

VESSEL

LOON

TEMPLATE
SIZE

RTS

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DIST. TO FIRST REFLECTOR	SONAR RANGE
SEGMENT	TIME	M	KM	°T	DOH	SUB	DOH	SUB	DOH	SUB	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION (°T)	M	M	M	M	M
KM	MINUTES	SECONDS																											
GGHH 33	1310.5	2.5	-	250	/	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	150		
HH11 34	1319.5	2.6	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
115J 35	1328.5	2.6	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
JJKK 36	1336.5	2.8	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
KKLL 37	1346.0	2.6	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
LLPM 38	1354.8	2.5	-	25	-	275	-	1.2	1.44	2.9	2	0	0	0	0	0	4.3	1	4.3		0	-	-	-	-	-			
MMNN 39	1404.5	2.9	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
NNOO 40	1427.0	3.0	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
OOPP 41	1437.5	3.0	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
PPQQ 42	1447.4	2.8	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
QQRR 43	1456.5	2.7	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
RRSS 44	1505.0	2.6	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
SSTT 45	1513.2	2.2	-	230	/	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
TTUU 46	1521.2	2.5	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			
VVVV 47	1530.8	2.7	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
VVWW 48	1537.6	2.7	-	/	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-			

REMARKS

SEB. WAVES (ORIENT: 045°T)

SEB. WAVES (ORIENT: 045°T)
1 STUDEL SCOUR.

SEB. WAVES (ORIENT: 045°T)

CIRCLED TO CHANGE COURSE.

NO SONAR THIS SEGMENT.

1972

LOON

HTH

[illegible]

1972

SEGMENT SCALE 1:1953

11 1709

VESSEL | LOON

TEMPLATE SIZE	4.5	KTO
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DATE		VESSEL		LAT/LONG	
210		4.5		4.5	
SEGMENT		TIME		DEPTH	
KM		M		M	
AB	1	1000.0	9.4	107	165/15
BC	2	1009.2	8.6	107	165/15
CD	3	1018.4	7.5	100	-
DE	4	1026.6	6.9	105	170/-
EF	5	1037.0	7.5	106	170/-
FG	6	1049.9	7.2	106	20/-
GH	7	1058.5	8.5	104	35/-
HI	8	1108.0	12.0	2.0	40/-
IJ	9	1121.5	13.4	3.0	30/-
JK	10	1133.0	14.2	3.6	165/150
KL	11	1143.2	13.5	2.9	155/170
LM	12	1155.2	12.8	2.6	170/155
MN	13	1208.2	12.2	2.2	165/155
NO	14	1219.6	11.5	1.9	160/15
OP	15	1228.5	10.6	1.5	155/170
PQ	16	1238.1	10.0	1.4	160/-

1972

VESSEL	LOON
TEMPLATE SIZE	11.5 KTS.

ICE GOUGE DATA RECORD

1972

VESSEL	LOON
TEMPLATE SIZE	4.5 KTS

TRACE LINE		ICE GOUGE DATA RECORD														1972		VESSEL LOON TEMPLATE SIZE 4.5 KTS													
DATE	210	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO NEXT REFLECTOR	SONAR RANGE	REMARKS
SEGMENT	KM	MINUTES	M	KM	T	DOM	SUB	HIGH	LOS	OBS	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION	M	M			
GAHH 33	1502.0	14.5	11.2	042	60	-	102	-	L	28	.98	27.4	28	0	0	0	0	0	<.3	6	.3		0	-	-	-		150			
HHTI 34	1508.0	14.5	12.2	272	40	-	312	-	L	49	.115	56.4	45	3	0	0	0	1	1.2	8	<.3		2	6	31	067			GOUGE TERMINATED BY ICE.		
IJTI 35	1516.2	16.0	11.7		150	-	062	-	L	29	.132	38.3	29	0	0	0	0	0	<.3	6	<.3		2	7	27	067					
JJRK 36	1526.0	16.0	11.3		140	-	052	-	L	19	.115	21.9	19	0	0	0	0	0	<.3	5	<.3		1	2	22	312			PRESSURE GAGE READ 100 PSI. SMALL SHOALS.		
KKLL 37	1535.5	18.0	10.8		30	-	302	-	L	16	.132	21.1	15	1	0	0	0	0	.3	12	.3		1	2	16	302					
LLMM 38	1545.0	18.8	10.6		35	-	307	057	M	41	.122	50.0	40	1	0	0	0	0	.3	10	.3		1	2	15	067			GOUGE TERMINATED BY DOUBLE FIELD.		
MMNN 39	1554.5	19.2	10.0		150	-	062	-	L	29	.122	38.3	29	0	0	0	0	0	<.3	5	<.3		1	18	100	062			GOUGE TERMINATED BY (18 INCHES) ICE.		
NNOO 40	1604.0	19.9	9.5		30	-	302	-	L	11	.132	14.5	11	0	0	0	0	0	<.3	7	<.3		0	-	-	-					
OOPQ 41	1613.8	19.4	9.1		40	-	312	-	L	39	.115	44.2	39	0	0	0	0	0	<.3	8	<.3		0	-	-	-			GOUGE TERMINATED BY ICE.		
PPQQ 42	1622.9	18.4	8.9		25	-	247	082	L	84	.144	121.0	84	0	0	0	0	0	<.3	7	<.3		2	20	63	082			PRESSURE GAGE READ 100 PSI.		
QQRR 43	1632.0	17.8	8.5		35	-	307	012	L	95	.122	115.9	95	5	0	0	0	0	.3	8	.4		5	6	27	307					
RRSS 44	1643.0	16.7	7.8	197	90	-	287	-	L	35	.100	35.0	29	4	2	0	0	0	.5	7	.3		0	-	-	-					
SSTT 45	1649.9	15.2	6.9		70	-	267	307	L	42	.06	40.3	33	3	1	2	1	2	1.3	7	1.0		0	-	-	-			NAV. PROBLEMS?		
TTUU 46	1656.2	14.5	5.9	267	35	-	302	287	L	41	.122	50.0	32	5	2	2	0	0	.6	12	.5		1	2	12	297			NAV. PROBLEMS? 1 MIN OF SONAR MISSING - COUNT RESOLVED.		
UUUU 47	1701.5	14.2	5.1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			NAVIGATION MAY BE OFF BY SEVERAL SEGMENT TIME. SEGMENT NOT ON SONAR. POINT V NOT ON SONAR.		
VVVV 48	1704.7	14.2	4.1	287	145	-	072	-	L	40	.122	48.8	36	4	0	0	0	0	.4	7	.3		2	2	18	092			NAVIGATION PROBLEMS - POINT V NOT ON SONAR. TICK MARKS (1) ORIENTED T. L. 1504.0-1514.0.		

TRACKLINE		ICE GUGE DATA RECORD																				VESSEL		LOON																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
DATE		1972																				TEMPLATE		4.5 KT6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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SEGMENT		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF INCLINATIONS		CORRECTION FACTOR		GUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MULTI-INCLINON GUGES					SOUND RANGE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
KM		M		KM		°T		DOH SUB		DOH SUB		OBS		L		NMP		2-4		4-6		6-8		8-10		10-12		MAX		M		M		M		NUMBER		MAXIMUM INCLINON PER GUGE		MAXIMUM DISRUPTION WIDTH (M)		DOMINANT ORIENTATION (°T)		REFLECTOR		SONAR RANGE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
WNXX 49		1708.0		14.3		4.1		287		145/15		072		302		M		38		1.22		46		4		38		0		0		0		0		0		0		0		0		0		0		0		150																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
XXVY 50		1711.7		14.5		4.2		1		160/30		087		057		L		56		1.60		89		6		52		4		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			

NAVIGATIONAL PREBLEMS?
TICK MARKS (1) OR (2) 882°T L=1100 M
W=16 M

NAVIGATIONAL PREBLEMS?

PRE-SCOUT RIDGE - SCOURING

1972

Loan

45.

476

[illegible]

[illegible]

1972

SEGMENT SCALE 1:1709

VESSEL	Loon
TEMPLATE SIZE	3,4 HTO

[illegible]

19

ICE GOUGE DATA RECORD

1972

VESSEL	Loon
TEMPLATE SIZE	3.4 MTS

DATE		START TIME		START DEPTH	DISTANCE	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	COARSE DENSITY	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM SCOUR DEPTH	MULTI-INCISION GOUGE				DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS
212		MM	SS	M	KT	°	°	°	°	°	°	°	NMP	2-4	4-6	6-8	8-10	>10	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISTRIBUTION WIDTH (M)	DOMINANT ORIENTATION (°)	M	M					
QR	17	1129.8	13.9			050	35/150	085	200	H	73	1.22	89	68	4	0	0	1	0	.9	17	.3		4	2	23	085		150	TICK MARKS (1) ORIENT: 075°T L = 400M W = 5M			
RS	18	1139.4	14.0				45/15	095	065	M	68	.09	74	66	2	0	0	0	0	.3	12	.9		1	2	13	215						
ST	19	1149.5	14.3				45/110	095	160	L	71	1.09	77	67	2	0	1	1	0	.9	12	1.5		8	3	29	085						
TU	20	1200.3	14.5			140	135/170	275	310	H	92	1.07	100	87	5	0	0	0	0	.4	9	.8		8	5	38	150						
UV	21	1211.3	14.6				-/-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-				NO SONAR THIS SEGMENT			
VW	22	1222.2	14.6				130/175	270	315	L	68	1.04	70	64	2	0	0	2	0	1.0	18	1.0		7	4	22	310						
VX	23	1234.0	14.5				115/160	285	300	L	70	1.22	85	62	5	2	1	0	0	.8	17	.7		7	8	62	270						
XY	24	1246.0	14.4				145/60	285	200	M	94	1.22	114	86	4	2	0	1	1	1.1	11	.6		6	3	27	280						
YZ	25	1257.8	14.4				135/160	275	300	M	55	1.09	60	50	3	1	0	1	0	.8	11	1.1		6	2	34	270						
2AA	26	1309.5	14.4				145/170	285	310	L	68	1.22	83	61	1	2	1	1	2	1.1	26	1.1		6	4	37	300						
ABBB	27	1321.8	14.3				135/170	275	310	L	61	1.09	66	59	1	1	0	0	0	.5	11	.7		3	3	25	315						
BCCC	28	1334.4	14.1				140/165	280	305	M	76	1.15	87	72	3	0	1	0	0	.7	13	.4		5	3	44	285						
CCDD	29	1346.2	13.8				155/75	295	215	L	81	1.44	116	80	1	0	0	0	0	.8	19	.3		0	-	-	-				SEGMENT IS 2 MIN, START OF SIMRAD, GOUGE TERMINATION ON SONAR.		
DD EE	30	1358.9	-				130/65	270	205	L	72	1.04	74	72	-	-	-	-	-	17	-		5	3	33	290				POINT DO ISMT ON SONAR. THIS SEGMENT NOT OF SIMRAD. TICK MARKS (1) ORIENT: 245°T L = 310M W = 3M			
EE FF	31	1409.1	13.0				155/115	295	255	L	93	1.44	133	89	3	1	0	0	0	.6	10	.3											

ICE GOUGE DATA RECORD

1972

VESSEL LOON

TEMPLATE SIZE 3.4 KTS.

DATE	START TIME	START DEPTH	DISTANCE	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM BRIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES				DEPTH TO REFLECTOR	SOUNAR RANGE	REMARKS		
212	SEGMENT	KM	M	KM	°T	DOH SUB	DOH SUB	HIGH RECOG	DOH	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION DISTANCE	DOMINANT DEPTH (M)	M	M					
GGHH 33	1433.5	12.5		140	140/160	280	300	M	99	115	113	90	8	1	0	0	0	.5	14	.6		1	2	39	270						TICK MARKS(2) ORIENT: 230°T L= 115M W= 8M	
HATI 34	1446.0	12.1			145/115	285	255	M	93	122	113	91	2	0	0	0	0	.3	17	.3		2	3	16	285							
IITJ 35	1456.9	11.8			135/155	275	295	L	104	109	113	97	3	1	1	2	0	.9	15	.3		0	-	-	-							
JJJK 36	1508.7	11.1			125/150	265	290	L	113	101	114	104	3	2	1	2	1	1.0	13	.3		7	9	52	170						TICK MARKS(1) ORIENT: 245°T L= 87M W= 7M	
KRL 37	1521.5	10.5			130/80	270	220	L	142	104	147	136	5	0	0	1	0	.8	6	.5		5	8	47	170						TICK MARKS(3) ORIENT: 245°T L= 213M W= 12M	
LLMM 38	1533.0	9.9			140/120	280	260	L	141	115	162	137	4	0	0	0	0	.3	8	<.3		6	9	58	290							
NNNN 39	1546.0	9.0			135/75	275	185	L	79	109	86	70	9	0	0	0	0	.3	37	<.3		4	10	75	300							
NNOO 40	1557.7	8.1			125/140	265	280	M	62	101	62	58	4	0	0	0	0	.3	3	<.3		1	4	33	300							
OOPP 41	1609.6	5.9			125/-	265	-	L	26	101	26	26	0	0	0	0	0	<.3	2	<.3		0	-	-	-							ONLY 15 KM OF SEAFLOOR ON SONAR - CORRECTED COUNT USED.
PPQQ 42	1621.0	4.0			110/-	250	-	L	17	96	16	17	0	0	0	0	0	<.3	2	<.3		0	-	-	-							MANY LARGE STRUBLE SCOURS. AREA OF SHOALS (SEDIMENT WAVES).
QARR 43	1631.0	1.7		065	70/-	135	-	L	42	96	40	42	0	0	0	0	0	<.3	2	<.3		0	-	-	-							STRUBLE SCOURS.
RSSS 44	1643.0	2.8			45/-	110	-	L	25	109	27	25	0	0	0	0	0	<.3	3	<.3		0	-	-	-							STRUBLE SCOURS.
SSTT 45	1651.5	3.0			30/-	095	-	L	10	132	13	10	0	0	0	0	0	<.3	2	<.3		0	-	-	-							STRUBLE SCOURS. (SHALS)
TTUU 46	1659.2	4.7			40/-	105	-	L	39	115	44	38	1	0	0	0	0	.3	6	.5		2	5	21	110							STRUBLE SCOURS. GUAGE TERMINATIONS ON SONAR.
UUUU 47	1707.9	5.5			50/-	115	-	L	50	104	52	47	3	0	0	0	0	.3	7	.4		2	5	21	110							STRUBLE SCOURS
VVVV 48	1715.0	9.0		100	100/50	100	50	L	66	96	63	63	2	0	1	0	0	.7	5	.8		2	3	24	145							STRUBLE SCOURS

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ICE GOUGE DATA RECORD

1992

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM CUSP HEIGHT	MULTI-INCISION CUSPS				DEPTH TO REFLECTOR	SONAR RANGE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
2/2	SEGMENT	KM	M	KM	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB	°T	DOM	SUB

VESSEL	L100W
TEMPLATE SIZE	3.4 KTS

REMARKS

TICK MARKS(1) ORIENT. 065°T L= 325 M W= 10 M

GOUGE TERMINATION
TICK MARKS(2) ORIENT. 080°T L= 310 M W= 8 M

[illegible]

1972

SEGMENT SCALE 1:1709

TRACKLINE		ICE GOUGE DATA RECORD																				1972		SEGMENT SCALE 1:1709										VESSEL		LOON					
DATE																																TEMPLATE		3.4 KTS							
213																																SIZE									
SEGMENT																																NUMBER		MULTI-INCISION GOUGES		DEPTH TO REFLECTOR		SONAR RANGE			
KM																																M		M		M		M			
AB																																2		2		5		095		150	
BC																																0		-		-		-		-	
CD																																1		2		19		110		-	
DE																																2		2		19		110		-	
EF																																2		2		12		245		-	
FG																																1		2		11		090		-	
GH																																1		2		10		105		-	
HI																																2		2		13		110		-	
IJ																																2		2		10		110		-	
JK																																0		-		-		-		-	
KL																																0		-		-		-		-	
LM																																0		-		-		-		-	
MN																																0		-		-		-		-	
NO																																0		-		-		-		-	
OP																																0		-		-		-		-	
PQ																																0		-		-		-		-	
RQ																																2		2		38		110		-	
S																																									

TRACKLINE

21

ICE GOUGE DATA RECORD

1972

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	*T	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM GOUGE LENGTH	MULTI-INCISION GOUGES					DEGREE OF DEVIATION REFLECTOR	SOURCE	RANGE		
213	SEGMENT	KM	HOURS MINUTES	1	KM	*T	DOH	SUB	HIGH LOW	OBS	L	FOR KM	NMP	2-4	4-6	6-8	8-10	1	MAX	M	M	M	NUMBER	MAXIMUM MAX GOUGE PER GOUGE	MAXIMUM DISTANCE	DOMINANT ORIENTATION	DEGREE OF DEVIATION	M	M	M	M	M	M	
OR 17	2012.3	14.0	6.0	090	25	115	-	L	11	1.44	15	9	1	0	0	1	0	.9	6	.9		2	2	34	110	-		150						
RS 18	2018.2	14.0	6.4		20	110	255	M	15	1.60	24	12	1	2	0	0	0	.5	3	.4		3	3	17	110	-		1						
ST 19	2024.2	14.0	6.8		160	250	115	L	29	1.60	46	27	1	1	0	0	0	.5	5	4.3		3	3	17	250	-								
TU 20	2031.3	14.0	7.4		15	105	265	L	17	1.82	30	16	0	1	0	0	0	.5	11	4.3		1	5	30	260	-								
UV 21	2038.3	14.1	8.1		15	105	265	L	7	1.82	12	7	0	0	0	0	0	2.3	4	4.3		1	2	17	105	-								
V																																		
END	2043.2	14.0	8.7																															

VESSEL	LOON
TEMPLATE SIZE	4.5 KTB

REMARKS

TICK MARKS (2) OF 21. 105°T L=400M
W=10M

17516 Km KARLUK, LOON (1972-1980)

246 Km- GLACIER (1972)

2002 TOTAL KILOMETERS OF TRACKLINE

DISTANCE FROM COAST: A = 37 KM; G = 41 KM

ICE GOUGE DATA RECORD

1972

SEGMENT SCALE 1.2392

VESSEL

GLACIER

TEMPLATE
SIZE

4.8 ATC

TRACKLINE		ICE GOUGE DATA RECORD															1972		SEGMENT STAGE 1-2392										VESSEL		GLACIER																																																																																																																																																																																																																																																																														
DATE		236		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		NO. OF GOUGES		ORIENTATION		NUMBER OF GOUGES		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH		MAXIMUM BRIDGE HEIGHT		MAXIMUM BRIDGE LENGTH		MULTI-INCISION GOUGES					DEPTH TO REFLECTOR		SONAR RANGE		REMARKS																																																																																																																																																																																																																																																												
SEGMENT	KM	TIME	M	KM	°T	°W	DOH	SUB	°W	°E	°S	°N	°E	°S	°N	NMP	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	26-28	28-30	30-32	32-34	34-36	36-38	38-40	40-42	42-44	44-46	46-48	48-50	50-52	52-54	54-56	56-58	58-60	60-62	62-64	64-66	66-68	68-70	70-72	72-74	74-76	76-78	78-80	80-82	82-84	84-86	86-88	88-90	90-92	92-94	94-96	96-98	98-100	100-102	102-104	104-106	106-108	108-110	110-112	112-114	114-116	116-118	118-120	120-122	122-124	124-126	126-128	128-130	130-132	132-134	134-136	136-138	138-140	140-142	142-144	144-146	146-148	148-150	150-152	152-154	154-156	156-158	158-160	160-162	162-164	164-166	166-168	168-170	170-172	172-174	174-176	176-178	178-180	180-182	182-184	184-186	186-188	188-190	190-192	192-194	194-196	196-198	198-200	200-202	202-204	204-206	206-208	208-210	210-212	212-214	214-216	216-218	218-220	220-222	222-224	224-226	226-228	228-230	230-232	232-234	234-236	236-238	238-240	240-242	242-244	244-246	246-248	248-250	250-252	252-254	254-256	256-258	258-260	260-262	262-264	264-266	266-268	268-270	270-272	272-274	274-276	276-278	278-280	280-282	282-284	284-286	286-288	288-290	290-292	292-294	294-296	296-298	298-300	300-302	302-304	304-306	306-308	308-310	310-312	312-314	314-316	316-318	318-320	320-322	322-324	324-326	326-328	328-330	330-332	332-334	334-336	336-338	338-340	340-342	342-344	344-346	346-348	348-350	350-352	352-354	354-356	356-358	358-360	360-362	362-364	364-366	366-368	368-370	370-372	372-374	374-376	376-378	378-380	380-382	382-384	384-386	386-388	388-390	390-392	392-394	394-396	396-398	398-400	400-402	402-404	404-406	406-408	408-410	410-412	412-414	414-416	416-418	418-420	420-422	422-424	424-426	426-428	428-430	430-432	432-434	434-436	436-438	438-440	440-442	442-444	444-446	446-448	448-450	450-452	452-454	454-456	456-458	458-460	460-462	462-464	464-466	466-468	468-470	470-472	472-474	474-476	476-478	478-480	480-482	482-484	484-486	486-488	488-490	490-492	492-494	494-496	496-498	498-500	500-502	502-504	504-506	506-508	508-510	510-512	512-514	514-516	516-518	518-520	520-522	522-524	524-526	526-528	528-530	530-532	532-534	534-536	536-538	538-540	540-542	542-544	544-546	546-548	548-550	550-552	552-554	554-556	556-558	558-560	560-562	562-564	564-566	566-568	568-570	

1972

SEGMENT SCALE 1:1630

TEMPLATE SIZE	3,3	ATO
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[illegible]

1972

GLACIER

HTC

DATE		VESSEL																																																																																																																																																																																																																																																																																																											
252		GLACIER																																																																																																																																																																																																																																																																																																											
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START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM SLOPE	MULTI-INCISION GOUGES				DEPTH TO DEPTH REFLECTOR	SONAR RANGE	REMARKS																																																																																																																																																																																																																																																																															
KM	M	KM	°T	°	°	°	°	°	°	NMP	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	26-28	28-30	30-32	32-34	34-36	36-38	38-40	40-42	42-44	44-46	46-48	48-50	50-52	52-54	54-56	56-58	58-60	60-62	62-64	64-66	66-68	68-70	70-72	72-74	74-76	76-78	78-80	80-82	82-84	84-86	86-88	88-90	90-92	92-94	94-96	96-98	98-100	100-102	102-104	104-106	106-108	108-110	110-112	112-114	114-116	116-118	118-120	120-122	122-124	124-126	126-128	128-130	130-132	132-134	134-136	136-138	138-140	140-142	142-144	144-146	146-148	148-150	150-152	152-154	154-156	156-158	158-160	160-162	162-164	164-166	166-168	168-170	170-172	172-174	174-176	176-178	178-180	180-182	182-184	184-186	186-188	188-190	190-192	192-194	194-196	196-198	198-200	200-202	202-204	204-206	206-208	208-210	210-212	212-214	214-216	216-218	218-220	220-222	222-224	224-226	226-228	228-230	230-232	232-234	234-236	236-238	238-240	240-242	242-244	244-246	246-248	248-250	250-252	252-254	254-256	256-258	258-260	260-262	262-264	264-266	266-268	268-270	270-272	272-274	274-276	276-278	278-280	280-282	282-284	284-286	286-288	288-290	290-292	292-294	294-296	296-298	298-300	300-302	302-304	304-306	306-308	308-310	310-312	312-314	314-316	316-318	318-320	320-322	322-324	324-326	326-328	328-330	330-332	332-334	334-336	336-338	338-340	340-342	342-344	344-346	346-348	348-350	350-352	352-354	354-356	356-358	358-360	360-362	362-364	364-366	366-368	368-370	370-372	372-374	374-376	376-378	378-380	380-382	382-384	384-386	386-388	388-390	390-392	392-394	394-396	396-398	398-400	400-402	402-404	404-406	406-408	408-410	410-412	412-414	414-416	416-418	418-420	420-422	422-424	424-426	426-428	428-430	430-432	432-434	434-436	436-438	438-440	440-442	442-444	444-446	446-448	448-450	450-452	452-454	454-456	456-458	458-460	460-462	462-464	464-466	466-468	468-470	470-472	472-474	474-476	476-478	478-480	480-482	482-484	484-486	486-488	488-490	490-492	492-494	494-496	496-498	498-500	500-502	502-504	504-506	506-508	508-510	510-512	512-514	514-516	516-518	518-520	520-522	522-524	524-526	526-528	528-530	530-532	532-534	534-536	536-538	538-540	540-542	542-544	544-546	546-548	548-550	550-552	552-554	554-556	556-558	558-560	560-562	562-564	564-566	566-568	568-570	570-572	572-574	574-576	576-578	578-580	580-582	582-584

DISTANCE FROM COAST: A=47 KM; HH=25 KM

ICE GOUGE DATA RECORD

1972

SEGMENT SOME 11650

VESSEL	GLACIER
TEMPLATE SIZE	3.3 MTS

TRACKLINE	DATE	SEGMENT	KM	START TIME	START BEPTN	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION	VARIABLE	NUMBER	CORRECTION	DOUSE DENSITY	INCISION DEPTH DISTRIBUTION METERS	MAXIMUM INCISION DEPTH	MAXIMUM RIDGE HEIGHT	MAXIMUM SLOPE	MULTI-INCISION GOUGES	NUMBER	MAXIMUM INCISION DEPTH	MAXIMUM RIDGE HEIGHT	MAXIMUM SLOPE	DOUSE DENSITY	SONAR RANGE	REMARKS
G4	252																									
AB	1325.0	39.1	250													1.3	1.1									SONAR UNUSABLE UNTIL SEGMENT EF DUE TO MALFUNCTION AND SWELL. GOOD BATHYGRAPH.
BC	1332.7	38.2														1.1	1.6									
CD	1340.1	36.0														1.8	1.9									NO SONAR THIS SEGMENT.
DE	1347.3	34.0														1.0	1.0									
EF	1355.0	36.8	185																							SONAR QUALITY VERY POOR FOR ENTIRE LINE.
FG	1401.0	31.9	50																							
GH	1412.8	35.1	30																							
HI	1422.0	32.7	35																							
IJ	1430.8	31.5	55																							
JK	1440.3	30.6	40																							
KL	1449.7	31.0	45																							
LM	1458.8	28.4	40																							
MN	1507.7	29.0																								5 KM OF SONAR MEAS. COUNT ADJUSTED TO 1 KM.
NO	1516.4	28.2	45																							NO SONAR THIS SEGMENT.
OP	1522.0	25.8	45																							
PQ	1528.0	27.7																								
16																										SONAR UNUSABLE DUE TO GROUND SWELL.

1972

GLACIER

3,3 KTC

[illegible]

[illegible]

1972

VESSEL	GLACIER
TEMPLATE SIZE	7.2 ATA

DATE		VESSEL		GLACIER																											
253		TEMPLATE		7.2 ATA																											
SEGMENT	START TIME	START DEPTH	DISTANCE	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIATION	NUMBER OF INCISIONS	CORRECTION FACTOR	COARSE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM FURROW LENGTH	MULTI-INCISION GROUPS				TO DEPT. REFLECTOR	SONAR RANGE	REMARKS
KM	HOURS MINUTES SECONDS	M	KM	°T	°SD	°SD		°SD	DBS	L	PER HM	NMP	2-5	5-6	6-8	8-10	10-15	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GROUP	MAXIMUM INCISION DEPTH	MAXIMUM FURROW WIDTH	MAXIMUM FURROW LENGTH	M	M			
AB	0625.0	46.6	112	165	-	277	-	L	9	1.19	10	9	0	0	0	0	0	<.4	7	<.4		2	4	106	277		300	SONAR RECORD FOR BUT USEABLE.			
BC	0630.2	46.5		165	-	277	-	L	5	1.19	6.0	5	0	0	0	0	0	<.4	15	<.4		1	4	52	277						
CD	0635.4	46.3		153	-	267	-	L	5	1.03	5.2	5	0	0	0	0	0	<.4	11	<.4		1	3	25	267						
DE	0640.8	46.0		140	-	252	277	M	9	.91	8.2	9	0	0	0	0	0	<.4	30	<.4		0	-	-	-						
EF	0646.2	45.8		165	-	277	-	L	6	1.19	7.1	6	0	0	0	0	0	<.4	23	<.4		0	-	-	-						
FG	0651.3	45.0		155	-	267	-	L	10	1.03	10	10	0	0	0	0	0	<.4	12	<.4		0	-	-	-						
GH	0656.6	45.2		140	-	252	262	L	29	.91	26	26	0	1	2	0	0	.6	26	<.4		4	5	61	262						
HI	0702.0	43.9		165	-	277	128	L	35	1.19	41	35	0	0	0	0	0	<.4	17	<.4		2	5	80	272						
IJ	0707.0	43.5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	150	NO SONAR FOR THIS SEGMENT.				
JK	0712.8	43.0		165	-	277	242	L	26	1.82	47	20	0	5	1	0	0	.7	25	.5		1	2	19	282				Gauges ARE VERY FEINT AND ARE INFILLED. HARD TO SEE DISTINCT RIDGES.		
KL	0718.2	42.5		155	-	267	287	M	33	1.44	47	30	0	2	1	0	0	.6	27	.6		2	2	21	222				THIS MAY BE DUE TO THE CHANGE IN RANGE.		
LM	0723.3	43.3		160	-	272	122	L	11	1.60	17	11	0	0	0	0	0	<.4	24	.5		1	3	31	122						
MN	0728.5	44.1		155	-	267	247	L	25	1.44	36	23	0	2	0	0	0	.5	22	.6		1	3	11	117						
NO	0733.8	44.0		150	-	262	227	L	35	1.32	46	35	0	0	0	0	0	<.4	17	<.4		2	2	119	272						
OP	0739.0	43.8		155	-	267	282	L	31	1.03	38	32	0	3	1	1	0	.9	34	.8		4	3	82	267		300				
PQ	0744.5	43.1		170	-	282	257	L	25	1.31	32	25	0																		

1992

EDATE
253

SECRET

VESSEL

GLACIER

TEMPLAT
SIZE

7.2 MB

[illegible]

DISTANCE FROM COAST: A = 63 KM; P = 76 KM

ICE GOUGE DATA RECORD

1972

SEGMENT SCALE 11117

VESSEL	GLACIER
TEMPLATE SIZE	2.5 A10

VESSSEL		CHARTER	
TEMPLATE	SIZE	2.5 HTS	

SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF OBS.	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM SLOPE	MULTI-INCISION GOUGES				SONAR RANGE	REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
											NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER				MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH	MAXIMUM DOMINANT SLOPE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
KM	M	KM	°T	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH

LINE	G8	DATE	253	YEAR	1972	GOUGE DEPTH DISTRIBUTION:	> 1 METER
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[illegible]

53	18	12	1	2	5	1	7	3	7	3	8	9	5
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DISTANCE FROM COAST: A = 80 KM ; F = 82 KM

ICE GOUGE DATA REFORM

1972

SEGMENT SCALE 1:3115 R=300

VESSEL	GLACIER
TEMPLATE SIZE	3.1 MTS

[illegible]

DISTANCE FROM COAST : A = 82 KM : PP = 40 KM

ICE GOUGE DATA RECORD

1972

SEGMENT SCALE 1:2302

VESSEL	GLACIER
TEMPLATE SIZE	4.8/16

TRANSECTIONS		ICE GOUGE DATA RECORD														1972		SEGMENT SCALE 1:2392										VESSEL GLACIER		TEMPLATE SIZE 4.8/176	
DATE		START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM DISRUPTION WIDTH	DOMINANT ORIENTATION	DEPT. TO INSPECTOR	SOURCE	REMARKS		
SEGMENT	KM												M	KM	°T	DOM	SUB	HIGH	LOW	OBS	L	PER KM								NMP	2-4
AB	1	0130.0	69.6		238					0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150	FAULT BLOCKS OR SLUMP BLOCKS AT THE SHELF BREAK (SEE ART GRANTS). SEDIMENT WAVES AT THE SHELF EDGE.		
BC	2	0139.0	61.0							0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		ORIENTATIONS RANGE FROM 103° TO 168° AND AVERAGE 120° T. SED. WAVES ARE 3-5 M WIDE.			
CD	3	0144.2	57.2		55/90	293	328	M	2	101	2.0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		LAST GOUGE ON THE SHELF. IS 150 M INSHORE OF P.T.C. SEDIMENT WAVES.			
DE	4	0150.5	55.0		35/-	273		L	6	122	7.3	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0		SEDIMENT WAVES.			
EF	5	0157.0	51.0							0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		SEDIMENT WAVES (108° T)			
FG	6	0203.4	53.5		60/-	298		L	2	98	2.0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		SEDIMENT WAVES (108° T) V. STRONG			
GH	7	0210.0	54.0		65/-	303		L	1	97	1.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		SED. WAVES (118° T)			
HI	8	0216.8	53.0		65/-	303		L	4	97	3.9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0		SED. WAVES (118° T)			
IJ	9	0223.2	52.6		60/120	298	358	M	20	98	19	19	0	1	0	0	0	0	0	0	0	0	3	4	32	298		SED. WAVES (123° T)			
JK	10	0230.0	52.1		60/30	298	268	L	18	98	17	15	0	2	0	0	0	0	0	0	0	0	0	0	0	0		GOUGES APPEAR INFILLED. SED. WAVES (128° T)			
KL	11	0236.0	50.5		60/120	298	008	L	31	98	30	29	0	2	0	0	0	0	0	0	0	0	3	3	50	008		SEDIMENT WAVES (128° T) V. STRONG. GOUGES ARE INFILLED WITH LITTLE RELIEF.			
LM	12	0242.6	50.0		35/50	273	288	L	15	122	13	14	0	0	0	0	0	0	0	0	0	0	1	2	11	303		SED. WAVES (123° T) GOUGES INFILLED			
MN	13	0249.0	50.0		30/150	268	028	M	18	132	18	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0		SED. WAVES (133° T ~ 018° T) GOUGES INFILLED			
NO	14	0256.4	50.6		75/-	313		L	4	96	3.8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0		SEDIMENT WAVES (108° T)			
OP	15	0301.0	49.2		55/-	293		L	2	101	2.0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		SEDIMENT WAVES (103° T)			
PO	16	0311.3	47.8		65/130	303	008	L	23	97	22	22	0	0	0	0	0	0	0	0	0	0	2	3	41	298		SEDIMENT WAVES (123° T) GOUGES INFILLED.			

TRACKING		ICE GOUGE DATA RECORD															1972		VESSEL		GLACIER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
DATE																			TEMPLATE		4.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	NUMBER OF MEASUREMENTS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM HEIGHT	MAXIMUM WIDTH	MULTI-INCISION GOUGES				DEPTH TO REFLECTOR	SONAR RANGE	REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
												NMP	2.5	1.6	6.8	8.10	21	MAX	M	M	M				NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISSECTION WIDTH	MAXIMUM DISSECTION DEPTH				DEPTH TO REFLECTOR	SONAR RANGE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
KM	HOURS MINUTES SECONDS	M	KM	T	DON	SUB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

1972

GLACIER

4.8 MTC

[illegible]

[illegible]

DISTANCE FROM COAST : $A = 39 \text{ KM}$; $DD = 65 \text{ KM}$

ICE GOUGE DATA RECORD

1972

SEGMENT SCALE 112392

VESSEL	GLACIER
TEMPLATE SIZE	4,8 NTO

TRACK LINE		ICE GOUGE DATA RECORD															1972		SEGMENT SCALE 1:2392										VESSEL		GLACIER				
DATE		254		START TIME		START DEPTH		DISTANCE		SHIP COURSE		OBSERVATION		ADJUSTED		CORRECTION		NUMBER		CORRECTION		GOUGE		INCISION DEPTH DISTRIBUTION		INCISION		MULTI-INCISION GOUGES		DENSITY		SOURCE		REMARKS	
SEGMENT	KM	M	KM	°T	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	W	D	
AB	0910.0	20.6		007	100	107	067	L	163	96	156	0	4	2	1	0	9	8	10					3	4	32	061		150	SEGMENT AB AND BC - USED 2.5 KT 150 M RANGE TEMPLATE FOR SONAR. MANY SMALL GOUGES (WIDE) + SHALLOW.					
BC	0928.0	21.5			100	107	087	L	209	96	200	0	8	3	2	0	9	7	6					3	8	40	137			MANY SMALL GOUGES (WIDE) + SHALLOW.					
CD	0946.0	20.9			100	107	157	L	128	96	122	0	9	4	3	3	1.5	8	12					3	4	12	007								
DE	0955.3	19.0			105	112	033	L	113	96	108	0	9	5	4	4	1.4	10	11					3	3	20	137								
EF	1004.0	20.0			105	112	157	M	154	96	149	0	12	9	4	1	1.1	15	8					2	2	17	052			MANY SMALL GOUGES					
FG	1012.5	21.6			110	117	167	M	112	96	107	0	5	2	0	3	1.2	16	11					4	2	25	167								
GH	1020.8	22.0			140	147	107	M	81	115	93	0	9	5	6	10	2.0	37	13					0	-	-	-			GOUGES ARE MUCH LARGER (WIDER) SONAR POOR.					
HI	1029.4	23.7			135	142	107	L	173	109	79	0	7	3	1	3	1.5	18	11					2	3	27	177								
IJ	1038.1	28.2			105	112	072	L	118	96	94	0	13	2	2	7	2.3	50	10					1	2	24	017			(SOME WIDE, DEEP GOUGES)					
JK	1047.4	33.1			85	092	132	L	117	98	16	0	1	0	0	6	2.5	56	10					0	-	-	-								
KL	1054.2	38.3			95	102	-	L	8	98	7.8	6	0	0	0	2	2.1	15	1.1					0	-	-	-								
LM	1101.0	43.0			60	067	117	L	11	98	10	0	0	0	0	0	1.4	11	1.4					1	3	38	077								
MN	1108.0	44.5			85	092	077	L	25	98	24	0	0	0	0	0	1.4	32	1.4					1	3	38	077			GOUGES APPEAR TO BE INFILLED. (NO FRESH GOUGES)					
NO	1115.0	47.0			90	097	062	L	27	100	24	0	0	1	2	0	1.9	35	1.5					1	3	47	062			(NO FRESH GOUGES)					
OP	1122.0	49.0			85	092	252	M	19	98	18	0	0	0	1	0	1.8	30	1.4					0	-	-	-			(NO FRESH GOUGES)					
PQ	1128.9	50.0			95	102	367	M	10	98	9.8	10	0	0	0	0	1.4	15	1.4					1	2	20	061								

1972

TEMPLATE SIZE	NYC
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[illegible]

[illegible]

DISTANCE FROM COAST: A=38 KM; DD=6.2 KM

ICE GOUGE DATA RECORD

1972

SEGMENT SCALE 11 2392

VESSEL	GLACIER
TEMPLATE SIZE	4.8 m

DATE		ICE GOUGE DATA RECORD										1972		SEGMENT SCALE 11 2392										VESSEL		GLACIER	
254																						TEMPLATE		4.8			
SEGMENT																						SONAR		RANGE			
KM																						M		M		REMARKS	
AB	19300	26.0		000	110	110	005	L	90	.96	86	72	0	8	2	3	5	2.3	6	.5	5	7	44	005	150	SEISMIC RECORD USED FOR GOUGE DEPTH MEASUREMENTS	
BC	1937.3	30.7			100	100	-	L	71	.96	68	46	0	14	2	4	5	1.8	29	11	2	9	48	010			
CD	1944.2	32.0			110	110	050	L	69	.96	66	50	0	9	3	2	5	2.7	18	10	0	-	-	-			
DE	1951.3	34.2			100	100	050	L	68	.96	65	48	0	10	3	2	5	2.1	10	1.5	2	2	23	010			
EF	1958.2	35.7			110	110	060	M	64	.96	61	37	0	10	4	4	9	3.0	20	1.6	1	2	10	075			
FG	2005.4	37.6			105	105	040	L	52	.96	49	31	0	8	4	5	4	1.3	16	1.2	0	-	-	-			
GH	2012.6	39.4			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			NO SONAR THIS SEGMENT, 4 Gouges OVER ONE METER DEEP - 2 M MAX.
HI	2019.8	39.1			100	100	060	L	57	.96	54	36	0	15	3	1	2	1.3	19	2.0	2	3	36	060			
IJ	2027.3	40.5			105	105	060	M	62	.96	59	48	0	8	1	2	3	1.1	14	1.5	1	2	31	020			
JK	2034.2	41.6			105	105	-	L	74	.96	71	54	0	14	3	2	1	1.2	24	.9	1	2	27	015			
KL	2041.4	43.0			105	105	030	M	94	.96	90	83	0	7	2	0	2	1.0	23	1.6	1	2	33	020			
LM	2049.0	45.3			70	70	070	L	79	.96	75	57	0	19	1	1	1	1.1	28	.8	4	6	66	020			
MN	2057.0	46.8		070	35	105	-	L	56	1.22	68	43	0	12	1	0	0	.8	16	2.4	1	4	27	105			
NO	2105.0	47.2			35	105	-	L	49	1.22	59	39	0	7	2	1	0	.9	37	2.4	3	4	40	105			
OP	2113.0	47.4			30	100	-	L	21	1.32	27	11	0	9	1	0	0	.6	15	2.4	1	2	40	120			
PQ	2121.5	48.7		340	115	095	-	L	23	.96	22	11	0	8	0	0	0	.5	21	2.4	1	2	30	105			SEDIMENT WAVES - 150

[illegible]

TRACKING		ICE GOUGE DATA RECORD																				VESSEL									
913		1972																				GLACIER									
DATE																						TEMPLATE									
255																						4/8 NTS									
SEGMENT		START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF OBS.	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM FRESHNESS	MULTI-INCISION GOUGES				DEPTH TO FAST REFLECTOR	SOURCE	RANGE	REMARKS		
KM		M	M	M	T	DOH	DOH	DOH	DOH	L	PER KM	NMP	2-9	1-6	6-8	8-10	11	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH	MAXIMUM DISRUPTION DEPTH	DOMINANT ORIENTATION	M	M			
QR 17		0439.0	50.0		225	55/85	280	310	L	31	1.01	29	34	0	2	0	0	1	1.5	10	4		0	-	-	-			150	GOUGES ARE FEINT (INFILLED)	
RS 18		0445.6	48.5		1	55/-	280	-	L	58	1.01	58	53	0	4	1	0	0	.8	10	.8		0	-	-	-				2 FRESH GOUGES NOTED.	
ST 19		0452.4	47.5			55/-	280	-	L	50	1.01	50	50	0	0	0	0	0	<.4	12	<.4		0	-	-	-				1 FRESH GOUGE NOTED.	
TU 20		0509.0	46.3			65/-	290	-	L	43	0.97	41	38	0	2	1	0	2	1.0	30	.5		0	-	-	-				GOUGING, BECOMES MORE DISTANT THROUGH REST OF LINE.	
UN 21		0505.9	45.5			50/85	245	310	L	59	1.04	61	53	0	4	0	0	2	1.5	30	.8		0	-	-	-					
VU 22		0512.2	43.9			80/55	305	280	M	78	0.96	74	70	0	5	3	0	0	.7	27	.5		3	3	25	255					
WX 23		0519.0	42.5			55/105	280	330	L	63	1.01	63	50	0	9	2	0	2	1.3	17	.4		4	5	60	255					
XY 24		0525.6	41.8			60/25	285	250	M	52	.98	51	40	0	10	2	0	0	.6	24	.5		4	5	75	250					
YZ 25		0531.0	40.2			30/55	255	280	L	52	1.32	68	40	0	10	1	1	0	.8	26	.4		4	2	26	255					
ZAA 26		0537.3	39.0			45/60	270	285	L	77	1.09	83	63	0	8	5	1	0	.8	30	.8		3	1	52	275					
AAE 27		0543.8	37.2			40/55	265	280	M	87	1.15	100	67	0	9	4	3	4	1.4	17	.6		7	7	46	265					
BCC 28		0550.6	35.9			45/95	270	320	L	93	1.09	101	72	0	8	4	4	5	1.3	41	.5		5	3	42	215					
CDE 29		0556.4	34.5			35/30	260	315	L	104	1.22	126	80	0	10	5	3	6	3.0	23	.5		10	4	38	255					
DEF 30		0604.0	34.0			45/20	270	305	M	83	1.09	83	59	0	9	4	3	7	2.7	52	.9		8	4	50	255					
EFG 31		0610.4	34.5			50/25	275	270	L	126	1.04	131	76	0	11	4	5	10	2.5	21	1.0		6	3	37	250					
FGH 32		0617.0	27.8			55/40	280	265	M	110	1.01	111	77	0	14	4	5	10	3.0	19	1.0		3	2	19	230					

TRACKING

013

ICE GOUGE DATA RECORD

1972

VESSEL

GLACIER

TEMPLATE
SIZE

4.8 A76

DATE
255

SEGMENT

KM

START
TIME

START
DEPTH

DISTANCE
FROM
COAST

SHIP'S
COURSE

OBSERVED
ORIENTATION

ADJUSTED
ORIENTATION

ORIENTATION
VARIABILITY

NUMBER
OF
ICE-IONS

CORRECTION
FACTOR

GOUGE
DENSITY

INCISION DEPTH DISTRIBUTION
METERS

MAXIMUM
INCISION
DEPTH

INCISION
WIDTH

INCISION
HEIGHT

INCISION
LENGTH

NUMBER

MAXIMUM
INCISION
DEPTH

MAXIMUM
INCISION
WIDTH

MAXIMUM
INCISION
HEIGHT

MAXIMUM
INCISION
LENGTH

DEPTH TO
FIRST
REFLECTION

SONAR
RANGE

REMARKS

GB
END

0625.0 30.0

225

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[illegible]

TEST LINE IV - 39-77
0) DATA 2) OPEN. 3) DISTANCE

TRACKLINE		TEST LINE IV ICE GOUGE DATA RECORD															1977		VESSEL		KARLUK		TEMPLATE		4.0 KTS.		SEG. SCALE 1:1706		REMARKS		
DATE	216	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	WAVELENGTH	WAVELENGTH CORRECTION	GOUGE DENSITY	ICE THICKNESS DISTRIBUTION METERS							MAXIMUM THICKNESS	MAXIMUM WIDTH	MAXIMUM HEIGHT	MAXIMUM LENGTH	MULTI-INCISION GOUGES							DEPTH TO REFLECTOR
SEGMENT	KM	HOURS MINUTES SECONDS	M	KM	°T	°SUB	°DOM	°SUB	°RHS	°L	°PK	KM	KMP	2-4	4-6	6-8	8-10	>10	MAX	M	M	M	NUMBER	MAXIMUM THICKNESS PER GOUGE	MAXIMUM WIDTH	MAXIMUM HEIGHT	MAXIMUM LENGTH	DOMINANT ORIENTATION	DEPTH TO REFLECTOR	M	M
BC	2-3	1345.0	3.1	1.1	027	45	72	62	L	33	1.13	37	33	0	0	0	0	0	—	3	—	175	0	—	—	—	—	125	SONAR RANGE DEFINITION ONLY 100 METERS		
CD	3-4	1353.7	5.2	2.0		50	77	62	L	27	1.08	29	27	0	0	0	0	0	.2	3	2	120	3	5	10	77	8.8	" " "			
DE	4-5	1402.4	6.4	3.1		25	52	72	L	8	1.54	12	8	0	0	0	0	0	—	2	—	175	0	—	—	—	10.2	SONAR RANGE DEFINITION ONLY 150 METERS			
EF	5-6	1411.4	7.8	4.1		45	72	—	L	14	1.13	15	14	0	0	0	0	0	—	3	—	175	0	—	—	—	—	" " "			
FG	6-7	1420.1	8.9	5.2		45	72	92	L	37	1.13	41	35	1	1	0	0	0	.5	5	7	375	0	—	—	—	13.1				
GH	7-8	1428.8	9.8	6.1		45	72	97	M	67	1.13	75	60	4	2	1	0	0	.7	10	6	350	3	5	13	72	14.0				
HI	8-9	1437.1	10.5	7.1		60	87	162	M	79	1.01	74	73	6	0	0	0	0	.4	13	6	400	4	5	15	162	15.2				
IJ	9-10	1445.6	11.2	8.2		60	87	72	M	93	1.01	93	82	8	3	0	0	0	.5	8	5	375	2	3	10	62	16.0	2 GOUGE TERMINATIONS			
JK	10-10.85	1453.8	12.0	9.1		65	92	62	M	87	.99	86	74	5	5	1	2	0	.8	8	7	250	2	2	5	167	16.5	* SEGMENT < 1000 METERS COUNT ADJUSTED TO 1 KM RIPPLE MARKS ORIENTATION - 97°T NO. 3 MAX W - 10M MAX L - 50M			
KL	11.05-12	1502.3	12.9	10.1		70	97	162	M	99	.98	97	61	19	10	3	2	2	1.3	8	1.2	375	7	6	32	162	17.9	* COUNT ADJUSTED TO 1 KM			
LM	12-13	1509.8	13.7	11.1		55	82	47	M	113	1.04	117	72	25	13	3	0	0	.7	8	7	500	2	8	25	82	18.7				
MN	13-14	1517.5	14.3	12.1		70	97	87	L	146	.98	143	106	29	9	2	0	0	.7	10	1.2	380	2	3	10	92	21.0	NO. 1 MAX W - 5M MAX L - 25M ORIENTATION - 107°T RIPPLE MARKS			
NO	14-15	1525.1	14.8	13.1		65	92	77	M	115	.99	113	75	23	13	4	0	0	.6	8	1.0	300	3	6	20	167	19.2				
OP	15-16	1532.5	15.2	14.1		45	112	72	M	156	.98	152	103	29	16	7	1	0	.9	10	1.7	350	8	22	75	72	20.0				
PQ	16-17	1539.8	15.8	15.1		65	92	47	H	104	.99	103	69	24	3	1	1	0	.9	15	1.0	370	7	11	42	92	20.0				
QR	17-18	1547.2	16.7	16.1		70	97	57	H	147	.98	147	96	21	15	12	2	1	1.5	13	1.2	425	10	9	37	72	22.1	NO. 2 MAX W - 10M MAX L - 125M ORIENTATION - 87°T RIPPLE MARKS			

1977

VESSEL	KARLUK
TEMPLATE SIZE	4.0 HTO

[illegible]

GOUGE ORIENTATION DATA

TRACKLINE 7-39

TEST LINE IV

39-77

ice gouge orientation
distribution

(all gouges for all segments)

TRACKLINE 39

DATE 2/6

YEAR 77

SHIP'S COURSE 4027

ICE GOUGE ORIENTATION DISTRIBUTION

[illegible]

39

DATE _____

216

YEAR

77

SHIP'S COURSE 4027

027

ICE GOOSE ORIENTATION DISTRIBUTION

[illegible]

ICE GAUGE ORIENTATION DISTRIBUTION

[illegible]

TRACKLINE 39

DATE	2/6
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YEAR	77
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SHIP'S COURSE 027

ICE GOUGE ORIENTATION DISTRIBUTION

TRACKLINE 39

DATE 216

YEAR 77

SHIP'S COURSE 102.7

ICE GOUGE ORIENTATION DISTRIBUTION

[illegible]

ICE GOUGE ORIENTATION DISTRIBUTION

TRACKLINE 39		DATE 216	YEAR 77	SHIP'S COURSE Y 027		ICE GOUGE ORIENTATION DISTRIBUTION		
SEGMENT Z-AA 26-27			SEGMENT AA-BB 27-28			SEGMENT BB-CC 28-29		
NO.	OBSERVED ϕ	ADJUSTED $^{\circ}T$	NO.	OBSERVED ϕ	ADJUSTED $^{\circ}T$	NO.	OBSERVED ϕ	ADJUSTED $^{\circ}T$
1	25	52	1	35	62	1	5	32
1	30	57	1	40	67	3	15	42
1	40	67	2	50	77	3	25	52
2	45	72	3	55	82	1	30	57
1	50	77	23	60	87	1	35	62
3	55	82	4	65	92	14	40	67
6	60	87	6	70	97	5	55	82
4	65	92	4	75	102	5	60	87
15	70	97	2	85	112	1	65	92
3	75	102	7	90	117	16	70	97
2	80	107	4	95	122	5	75	102
13	90	117	5	115	142	6	80	107
1	95	122	4	120	147	8	85	112
2	100	127	5	150	177	7	90	117
1	105	132	45	165	192	5	95	122
1	110	137	21	170	197	4	110	137
2	120	147				5	115	142
2	135	162				4	120	147
3	155	182				3	125	152
38	160	187				6	130	157
1	175	202				3	135	162
						8	145	172
						7	150	177
						1	155	182
						3	165	192
						4	100	127

TRACKLINE 39		DATE 216		YEAR 77		SHIP'S COURSE 027		ICE GAUGE ORIENTATION DISTRIBUTION		
SEGMENT CC-DD 29-30			SEGMENT			SEGMENT				
NO.	OBSERVED ϕ	ADJUSTED $^{\circ}$ T	NO.	OBSERVED ϕ	ADJUSTED $^{\circ}$ T	NO.	OBSERVED ϕ	ADJUSTED $^{\circ}$ T		
1	5	32								
5	35	62								
9	40	67								
12	45	72								
4	50	77								
5	55	82								
4	60	87								
14	65	92								
23	70	97								
10	75	102								
4	80	107								
13	85	112								
5	90	117								
3	95	122								
7	100	127								
7	105	132								
1	110	137								
3	115	142								
5	120	147								
2	125	152								
8	135	162								
12	140	167								
6	155	182								
4	165	192								
3	170	197								
3	175	202								

**DISTANCE BETWEEN
GOUGE TROUGHS**

TRACKLINE 7-39

TEST LINE IV

39-77

DISTANCE BETWEEN GOUGES

(from center to center of troughs)

Starboard side of sonar record
on the 25 m range line.

LINE 39		YEAR 1977		DISTANCE BETWEEN INCISION (METERS)							RANGE LINE : 25 M					STARBOARD				(1)
BC	CD	DE	EF	FG	FG	GH	GH	HI	HI	IJ	IJ	JK	JK	JK	KL	KL	KL	LM	LM	
(B)	(C)	(D)	(E)	(F)	7	(G)	6	(H)	99	(I)	17	(J)	7	14	(K)	4	7	(L)	19	
50	6	5	34	2	38	67	12	42	29	14	12	6	7	9	47	4	10	1	13	
55	80	155	212	33	109	36	14	69	(J-67)	16	4	12	8	10	15	2	16	2	7	
25	31	11	82	5	40	89	15	50		11	12	5	7	12	7	19	17	2	24	
12	5	160	95	45	(G-52)	14	(H-46)	10		57	9	11	7	11	9	8	54	11	11	
39	21	436	58	6		19		4		12	40	2	31	(K-728)	6	4	19	22	12	
187	7	3	45	11		33		6		10	18	8	20		18	10	8	15	4	
198	12	(E-230)	2	7		18		3		8	13	11	25		17	3	19	4	15	
20	16		186	5		3		67		20	10	5	4		5	15	(L-17)	9	8	
13	5		102	59		18		19		3	6	9	37		3	8		16	15	
35	13		126	7		39		5		5	13	5	8		18	17		7	19	
11	8		(F-58)	9		52		14		4	90	5	15		6	11		16	17	
10	9			15		113		6		10	12	20	6		28	22		15	10	
18	90			9		3		30		3	4	12	17		16	14		24	31	
10	9			17		4		80		2	5	27	6		8	30		41	10	
4	34			12		37		23		5	34	7	17		11	7		21	6	
5	76			10		39		35		17	36	11	17		20	8		16	5	
13	7			14		27		45		26	39	5	11		18	15		12	3	
146	13			16		41		10		10	17	17	10		8	20		20	5	
19	2			16		5		56		11	21	10	4		31	5		3	7	
(C-100)	369			15		6		36		6	21	4	8		28	19		16	21	
	(D-191)			4		45		25		15	18	5	39		24	21		7	19	
				46		32		16		14	23	6	12		7	5		7	7	
				29		37		28		15	28	12	26		21	8		16	4	
				29		12		40		19	43	4	17		30	11		7	5	
				91		17		9		6	7	27	21		32	8		28	12	
				90		30		42		34	(J-69)	15	7		12	5		26	10	
				118		29		10		7		17	7		28	4		17	15	
				38		29		40		13		8	12		13	3		18	37	
				6		13		10		4		9	11		15	22		13	7	

LINE 39		YEAR 1977		DISTANCE BETWEEN INCISION								RANGE LINE : 25 M STARBOARD ②							
LM	MN	MN	MN	NO	NO	NO	NO	OP	OP	OP	OP	PO	PO	PO	OR	OR	OR	OR	RE
10	(M)	19	4	(N)	12	8	3	(O)	8	7	8	(P)	11	32	(Q)	3	22	11	(R)
8	3	7	8	12	11	3	10	5	32	2	7	14	7	4	2	10	5	17	6
11	10	5	20	7	4	14	5	5	9	4	8	6	19	13	3	4	40	11	19
12	8	21	8	12	23	15	(O-5)	5	6	8	37	24	14	13	6	4	9	6	7
19	4	6	15	6	6	32		8	15	12	9	12	3	14	7	5	10	(P-39)	4
8	18	18	16	5	15	7		4	11	19	8	4	7	23	9	3	4		5
6	17	8	6	6	8	13		6	5	6	5	12	9	11	4	16	5		8
3	11	16	19	10	5	30		10	16	7	9	5	5	13	3	15	4		25
6	15	32	22	7	8	7		12	6	12	12	5	6	10	8	5	12		3
8	18	19	6	8	11	10		6	2	8	18	7	5	7	3	12	4		7
45	7	12	26	5	8	12		21	4	4	12	2	7	81	3	2	9		4
11	10	8	31	19	8	6		3	7	4	16	10	7	8	3	23	11		18
13	3	5	5	13	11	10		8	4	16	2	6	11	5	6	6	14		5
15	14	3	5	12	16	12		17	9	4	7	11	11	5	10	16	15		23
(M-17)	13	5	4	5	7	13		6	11	2	(P-2)	10	7	6	27	50	10		3
	4	5	3	12	6	22		6	8	9		12	8	18	16	5	3		5
	13	4	5	4	5	8		5	6	9		15	4	4	7	11	12		13
	16	13	3	12	15	20		8	19	6		13	16	16	3	7	7		7
	12	8	3	12	35	5		6	11	14		10	4	11	12	10	12		7
	5	5	4	14	13	4		6	5	10		5	9	12	20	10	11		5
	18	4	4	8	13	4		8	6	8		7	5	14	10	4	15		29
	7	6	10	18	13	9		11	14	7		6	25	12	5	3	6		4
	11	18	11	8	5	4		9	4	12		12	4	21	11	7	19		10
	19	10	11	4	4	8		2	18	21		17	21	11	11	6	19		21
	17	7	17	15	6	5		7	14	6		7	7	7	8	2	5		11
	17	5	2	15	5	2		6	5	4		25	8	(Q-6)	6	2	11		13
	33	7	(11-12)	10	5	7		7	6	4		10	29		5	3	21		15
	11	9		4	6	17		7	8	2		6	13		15	10	13		14
	7	4		7	3	10		4	13	6		14	11		6	3	11		11
	18	3		7	17	6		6	22	10		7	15		8	11	4		5

LINE	39	YEAR	1977	DISTANCE BETWEEN INCISION								RANGE LINE : 25 M						STARBOARD			③
RS	RS	ST	ST	ST	TU	TU	TU	UV	UV	UV	VW	VW	VW	WX	WX	WX	XY	XY	XY		
6	7	(S)	5	3	(T)	20	9	(U)	14	24	(V)	16	15	(W)	22	22	(X)	9	27		
18	15	4	5	9	3	8	20	4	48	51	6	12	16	13	18	(X-14)	16	9	22		
19	16	8	28	25	10	33	25	24	19	13	12	18	14	16	10		24	13	5		
11	20	14	32	7	4	30	5	21	10	3	8	11	36	8	7		8	12	8		
22	22	4	17	12	6	28	11	13	10	15	14	11	34	23	13		6	18	37		
10	16	2	5	10	14	13	4	10	22	5	10	11	11	16	24		8	6	48		
10	20	10	13	2	5	8	(U-15)	13	17	12	8	22	(W-7)	17	7		5	15	10		
14	21	12	4	12	8	4		10	13	(V-19)	21	9		20	7		21	10	(Y-31)		
8	11	2	2	45	17	7		10	8		8	7		9	14		15	13			
12	14	2	17	47	11	23		7	9		33	22		6	21		20	24			
14	18	8	21	36	17	7		10	4		10	8		4	4		16	38			
11	(S-9)	23	24	(T-12)	13	12		17	4		8	4		13	28		11	13			
25		13	9		4	11		12	7		20	10		3	21		8	5			
13		13	7		3	8		7	32		6	7		18	23		5	5			
9		4	2		18	15		10	15		14	6		10	11		7	4			
39		6	7		42	11		12	7		10	4		9	4		9	10			
10		16	5		21	12		15	28		12	8		9	7		14	9			
13		43	5		26	12		11	4		31	4		7	30		14	4			
11		7	18		7	14		31	6		6	14		6	9		18	22			
7		6	14		18	31		7	15		13	27		28	17		3	6			
8		13	8		3	7		7	5		12	67		16	33		24	12			
24		11	6		17	8		9	24		15	47		6	8		25	23			
13		21	7		39	26		15	10		13	8		10	24		48	12			
10		8	53		26	34		15	3		12	6		8	41		18	12			
5		6	8		14	10		16	32		12	21		13	24		27	3			
29		27	13		17	9		9	8		11	31		11	9		7	3			
29		14	21		18	6		2	7		10	11		11	20		8	9			
12		17	15		15	39		26	21		16	44		7	68		7	14			
16		9	24		16	8		17	57		2	8		20	14		15	11			
24		6	13		11	29		10	12		14	7		9	11		12	19			

LINE	39	YEAR	1977	DISTANCE BETWEEN INCISION				RANGE LINE : 25 M STARBOARD										(4)	
YE	YE	YE	ZAA	ZAA	ZAA	AABB	MBB	AABB	BBCC	BBCC	BBCC	BBCC	CCDD	CCDD	CCDD	CCDD	CCDD		
(Y)	18	(Z-11)	(Z)	17	3	(A)	4	4	(BB)	9	15	15	(CC)	3	4	4	5		
11	6		2	10	9	5	13	3	7	17	10	20	2	10	2	8	(DD-3)		
11	3		7	16	8	7	8	6	6	5	25	9	6	9	15	25			
6	9		12	20	10	27	15	4	5	4	10	19	6	12	11	10			
8	5		10	139	9	10	28	13	40	12	7	16	9	14	20	20			
11	13		18	5	13	10	6	7	42	4	7	9	6	3	4	8			
7	10		27	5	7	8	9	2	6	5	4	7	4	4	6	16			
44	5		4	7	7	10	10	6	5	2	12	7	5	4	4	20			
6	6		13	8	5	12	8	10	3	4	5	5	8	5	6	22			
8	7		4	13	2	10	12	6	4	4	7	8	10	3	7	7			
8	22		20	11	7	12	13	3	15	5	8	8	9	4	7	6			
9	26		16	12	9	7	3	18	3	6	10	7	3	4	9	5			
10	17		9	12	13	13	8	9	10	7	2	(CC-5)	3	6	15	2			
11	18		8	10	12	6	6	9	4	7	12		4	4	5	10			
12	10		11	7	10	7	6	7	10	5	28		15	6	21	7			
12	7		14	5	12	26	10	6	5	8	22		4	3	5	17			
7	18		33	4	(A-8)	24	11	6	5	3	8		4	4	16	7			
50	21		14	8		8	4	15	3	9	11		4	5	29	3			
33	13		14	13		20	24	(BE-2)	13	21	9		4	8	4	3			
29	18		6	11		10	4		27	11	4		5	6	6	5			
6	13		25	21		8	36		9	10	3		3	3	35	3			
3	11		10	30		18	11		7	11	5		8	7	4	10			
5	11		24	17		94	21		7	6	19		3	3	9	5			
16	38		11	16		25	16		8	6	12		9	6	9	18			
14	40		12	4		26	13		9	8	6		7	6	4	14			
5	5		37	4		6	10		5	6	11		4	12	14	10			
6	7		11	3		20	29		19	2	16		4	4	18	11			
5	17		12	6		12	21		13	10	23		4	7	5	13			
30	12		12	6		12	6		4	10	10		9	6	3	11			
34	39		5	2		8	9		2	5	10		6	18	9	3			

**ICE GOUGE DATA,
BEAUFORT SEA, ALASKA,
1972-1980**

TYPES OF DATA AVAILABLE FOR BEAUFORT SEA, ALASKA

QUALITY: G-GOOD F-FAIR P-POOR U-UNUSABLE
LOCATION: L-LADSON B-BAY S-SHELF

TRACKLINE	YEAR	SIDE SCAN SONAR	RAYTHEON	SIMRAD	SEISMIC	LOCATION
44	1979	G	G	—	—	S
92	1979	G	F	—	YES	S
37	1978	G	F	F	—	L
40	1978	G	G	F	—	L
41	1978	G	G	F	—	L
39	1977	G	G	—	YES	S
40	1977	G	G	—	YES	S
41	1977	G	P	—	YES	S
42	1977	F	G	—	YES	S
66	1977	G	F	—	YES	S
67	1977	F	F	—	YES	S
71	1977	G	G	—	YES	S
76	1977	P	U	—	YES	S
22	1976	G	G	—	YES	B
03	1975	G	G	—	YES	S
04	1975	G	G	—	YES	S
12	1975	F	G	—	YES	B
7	1973	G	—	G	YES	L
8	1973	G	—	G	YES	L
9	1973	F	—	G	YES	S
10	1973	F	—	G	YES	S

TYPES OF DATA AVAILABLE FOR BEAUFORT SEA, ALASKA

QUALITY: G-GOOD F-FAIR P-POOR U-UNUSABLE
LOCATION: L-LAGOON B-BAY S-SHELF

TRACKLINE	YEAR	SIDE SCAN SONAR	RAYTHEON	SIMRAD	SEISMIC	LOCATION
11	1973	G	-	G	YES	S
12	1973	G	-	G	YES	L
13	1973	P	-	G	YES	S
14	1973	P	-	G	YES	S
4	1972	G	-	G	YES	L
13	1972	G	-	G	YES	S
14	1972	G	-	G	YES	L
15	1972	G	-	G	YES	S
17	1972	G	-	G	YES	S
19	1972	G	-	G	YES	B
20	1976	G	G	-	YES	B
21	1976	G	G	-	YES	B
22	1976	G	G	-	YES	B
23	1976	G	G	-	YES	B
24	1976	G	G	-	YES	B
25	1976	G	G	-	YES	B
66	1979	F	F	-	YES	S
77	1979	P	11	-	YES	S
78	1979	G	G	-	YES	S
94	1979	P	P	-	YES	S
83	1979	G	G	-	YES	S

TYPES OF DATA AVAILABLE FOR BEAUFORT SEA, ALASKA

QUALITY: G-GOOD F-FAIR P-POOR U-UNUSABLE

LOCATION : L - LAGOON B - BAY B - SHELF

[illegible]

ICE GOUGE DATA SHEETS

1980

TRACKLINES

1980

START SEG. SCALE 1:1695

VESSEL	KARLUK
TEMPERATURE SIZE	4.0 KTG

DATE		VESSEL		SYNOPSIS	
220		KARLUK		4.0	
SEGMENT		TIME		SOUNDING	
KM	TIME	START	END	START	END
1	2	3	4	5	6
1	1607.0	14.4	15.0	15.5	15.7
2	1615.2	15.0	15.5	15.7	16.0
3	1623.6	15.5	15.7	16.0	16.5
4	1632.2	15.7	16.0	16.5	16.9
5	1642.0	16.0	16.5	16.9	17.3
6	1652.0	16.5	16.9	17.3	17.5
7	1702.3	16.9	17.3	17.5	18.0
8	1712.2	17.3	17.5	18.0	18.3
9	1722.5	17.5	18.0	18.3	18.5
10	1732.0	18.0	18.3	18.5	18.7
11	1741.1	18.3	18.5	18.7	19.0
12	1750.7	18.5	18.7	19.0	19.2
13	1800.9	18.7	19.0	19.2	19.5
14	1809.9	18.9	19.2	19.5	19.7
15	1818.2	19.0	19.2	19.5	19.7
16	1827.1	19.0	19.5	19.7	19.9

1980

KARLUK

4.0 мтб

[illegible]

[illegible]

ICE GOUGE DATA RECORD

1980

START SEGMENT SCALE 1:152.4

VESSEL **KARLUK**
 TEMPLATE SIZE **4.5** 578

DATE	START TIME	START DEPTH	DISTANCE	COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GOUGES				DESIGN TO REFLECT	SONAR RANGE	REMARKS
227												NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DEPTH OF DISPERSED CUTTING	DOMINANT ORIENTATION	DESIGN TO REFLECT	SONAR RANGE	
AB 1	1157.19	19.4			040	110	110	-	L	60	.98	58	34	21	5	0	0	0	.4	4	.5	1	3	14	010	-	125	125 OF SEG SONAR. MISSING COUNT ADJUSTED.
BC 2	1208.0	19.2				110	110	-	L	64	.98	62	50	12	1	1	0	0	.7	7	.6	0	-	-	-	-	-	SUBBOTTOM LEVELS APPEAR TO GRADE DOWN FROM THE SEAFLOOR. MOST SAWING STOPS MAY BE AT THE SEGMENT
CD 3	1217.7	18.0				95	045	045	L	29	.98	28	27	2	0	0	0	0	.2	3	.2	0	-	-	-	233	27.3 (1:2008)	OTHER SUBBOTTOMS AT 22.1 &
DE 4	1225.0	18.6				120	120	70	L	63	1.01	63	52	9	1	1	0	0	.6	5	.3	0	-	-	-	26.1		
EF 5	1232.0	18.7				170	130	170	H	15	2.38	35	11	4	0	0	0	0	.3	4	<.2	0	-	-	-	-		
FG 6	1240.0	16.6				50	050	-	L	6	1.08	6.5	4	2	0	0	0	0	.2	4	.2	2	2	7	050	24.8		
GH 7	1249.0	14.0			045	20	065	085	M	172	1.73	297	167	5	0	0	0	0	.2	2	.5	0	-	-	-	-		POSSIBLE UPPER S. - BOTTOM LAYER AT 18M THAT MAY BE UNDER SHAL AND GRADES TO SEAFLOOR BOTH DIR.
HI 8	1259.2	9.7			000	145	145	015	L	59	1.28	75	59	0	0	0	0	0	<.2	3	.4	2	6	27	015	-		GROUTING IS PRESENT. 4.5 CM TYPE ON GROUND TOP - 10 M SHAL
IJ 9	1306.0	11.5				140	140	050	L	29	1.20	34	28	1	0	0	0	0	.2	4	.2	0	-	-	-	-		SOME PRESENT IN ICE GOUGE SILL
JK 10	1315.6	14.1				45	130	045	M	18	1.13	20	18	0	0	0	0	0	<.2	2	.2	0	-	-	-	-		
KL 11	1323.5	16.8				155	155	000	M	18	1.54	27	16	2	0	0	0	0	.3	9	<.2	2	3	12	000	-		
LM 12	1332.8	20.1				115	140	140	L	60	.99	59	45	12	3	0	0	0	.4	12	.5	1	4	16	160	31.0		
MN 13	1341.0	22.0				70	100	070	M	114	.98	111	72	31	11	0	0	0	.5	35	.8	0	-	-	-	-		HIGH DENSITY 460 K. E.
NO 14	1349.2	22.2				70	100	070	M	111	.98	108	76	23	9	1	1	1	1.0	12	.8	1	3	21	085	-		(1:1695)
OP 15	1358.0	22.2			130	115	245	180	!	181	.99	179	152	24	3	2	0	0	.6	33	.5	5	4	21	105	-		1:152.4) HIGH DENSITY MAKES IT DIFFICULT TO DEFINE MULTIPLE GOUGES.
PQ 16	1409.0	22.8			120	145	265	135	H	177	1.28	226	142	25	10	0	0	0	.5	30	.8	8	2	26	230	-		(1:1675) " "

1980

KARLUK

4.5 NT

DATE		TIME		START DEPTH		STOP DEPTH		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF INCLUSIONS		CORRECTION FACTOR		GOUGE DENSITY		INCLUSION DEPTH DISTRIBUTION METERS										MAXIMUM INCLUSION WIDTH		MAXIMUM HEIGHT		MULTI-INCUSION GOUGES		DEPTH TO REFLECTOR		SOURCE RANGE		REMARKS	
SEGMENT	KM	M	KM	M	DON SUB	DOH	SUB	HIGH LOW	OBS L	PAS KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCLUSIONS PER GOUGE	MAXIMUM DISPERSTION WIDTH M	DOMINANT ORIENTATION	DEPTH TO REFLECTOR	M	M																
QR 17	1118.2	22.3	140	100	65	240	205	M	174	.97	.8	149	18	6	0	1	0	.8	30	11		5	4	35	300	-	125											HIGH DENSITY GOUGING ENDS AT SEGMENT END.					
RS 18	1427.7	21.3	150	40	05	190	155	L	11	120	13	11	0	0	0	0	<.2	3	<.2		1	2	11	155	3 ³														CONTINUING BACK UP ON SHOAL.				
ST 19	1436.2	19.5	150	-	-	300	-	L	32	138	44	32	0	0	0	0	<.2	4	<.2		4	3	17	245	-													SOME TYPHOIDAL P. SSING. GOUGING ON SHOAL FACE.					
TU 20	1445.0	16.4	120	130	65	250	285	L	50	108	54	50	0	0	0	0	<.2	3	.2		2	8	14	285	-													PRESSURE RIDGE SCALLES IN CRUST.					
VV 21	1454.0	16.1	140	20	20	260	140	M	69	120	82	69	0	0	0	0	<.2	4	.2		4	7	19	265	-																		
VW 22	1503.6	16.7	135	15	255	135	L	89	113	100	87	2	0	0	0	0	.2	5	<.2		5	9	49	255	2 ²														SMOOTH BOTTOM WITH MANY SMALL GOUGES (RECENT?) SUBBOTTOM APPEARS AS GOUGHED 2-1/2 CM FROM PT. V TO PT. Z				
WX 23	1513.5	18.0	140	30	260	150	L	28	120	33	28	0	0	0	0	0	<.2	3	<.2		2	10	37	260	2 ¹																		
XY 24	1522.2	18.9	270	30	155	300	245	M	45	138	62	43	2	0	0	0	.2	3	<.2		3	3	12	300	2 ⁸														BEGINNING OF SEDIMENT WAVES.				
YZ 25	1530.8	19.5	15	145	285	235	M	30	200	60	28	2	0	0	0	0	.3	10	<.2		2	2	9	245	2 ⁸														SEDIMENT WAVES IN ANTI-DIP - ORIEN. 145° W. WIDTH - 2 to 3 meters. HEIGHT - 4-20 cm SAND MAY BE POOLING IN FACIESING AS GOUX AND WAVES HAVE A WIDE - AND AT SED. E. SURFACE.				
ZAA 26	1557.1	20.1	140	20	050	290	L	41	120	49	41	0	0	0	0	0	<.2	3	<.2		0	-	-	-	2 ¹														APPROACHING SHOAL - 41M EAST SEDIMENTS ARE IN - 14.5m - WIDTH 3-4M. HEIGHT ~ 10CM.				
AABB 27	1545.1	16.9	150	25	060	295	L	134	138	184	133	1	0	0	0	0	.2	6	.2		1	6	20	060	2 ⁸														PRESSURE RIDGE GOUGING - OBS'D IN CRUST OF SHOAL				
BCC 28	1555.1	13.5	150	30	060	300	L	132	138	182	132	0	0	0	0	0	<.2	2	.2		3	9	22	060	-														PRESSURE RIDGE GOUGING - OBS'D IN CRUST OF SHOAL. ORIENTATION - 060° W. AR. WIDTH - 2 M				
CCD 29	1614.0	13.3	150	20	065	290	L	40	134	61	40	0	0	0	0	0	<.2	1	<.2		2	18	51	065	-																		
DDEE 30	1612.0	11.5	20	-	-	290	-	L	52	173	90	51	1	0	0	0	.2	3	.4		4	12	23	290	-																		
EEFF 31	1619.0	10.8	30	05	300	215	L	59	138	81	57	2	0	0	0	0	.2	2	.4		3	4	16	300	-														GOUGES DO NOT GET SHARP AT SHOAL - GOUGING ON EACH - PRESSURE - REPTYPE. VERY SHALLOW - 10 CM. DEEP.				
FFGG 32	1626.7	14.0	00	155	270	065	L	41	400	161	41	0	0	0	0	0	<.2	2	<.2		4	10	33	270	-														VERY SMALL GOUGES - BUT GOUGING IN THE FORM OF RIDGE - GOUGES				

1980

KARLUK

4.5

[illegible]

1980

START SEGMENT SCALE 1:2008

VESSEL

KARLUK

TEMPLATE
SIZE

4.6 NTO

TRAVELING		ICE GOUGE DATA RECORD																				VESSEL		TEMPLATE				
30		1980																				KARLUK		4.6				
DATE		START TIME	START DEPTH	DISTANCE	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF OBSERVATIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GOUGES		DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS		
22.8												NMP	2-4	4-6	6-8	8-10	10-12	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE				MAXIMUM DISCUSSION WIDTH (M)	DOMINANT ORIENTATION
SEGMENT	KM	M	KM	T	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB	DOH	SUB
QR 17	1146.0	16.9		000	100	100	060	H	204	.97	197	143	38	14	2	1	1	1.0	9	.9		2	5	32	135	240	125	(1:1695)
RS 18	1151.0	17.1			110	110	065	H	155	.98	151	99	27	14	7	5	3	1.4	13	.9		3	2	17	070	284		
ST 19	1201.2	18.1			120	120	060	H	173	1.01	174	121	22	7	4	3	16	2.0	36	1.3		4	2	22	050	242		
TU 20	1209.0	19.8			110	110	085	M	149	.98	146	97	17	12	6	5	12	2.1	14	.9		0	-	-	-	263		
UV 21	1216.2	21.1			110	110	030	H	119	.98	116	81	7	10	5	4	12	2.2	18	1.1		0	-	-	-	-		
VW 22	1224.0	23.6			120	120	055	L	93	1.01	93	49	13	6	6	6	13	2.2	19	1.7		1	3	38	140	-		
WX 23	1231.3	26.2			100	100	060	L	65	.97	63	30	18	4	3	4	6	2.1	13	.8		0	-	-	-	-		
XY 24	1238.9	29.1			115	075	075	M	68	.97	66	38	10	8	3	2	7	1.7	23	1.1		0	-	-	-	-		
YZ 25	1246.2	33.8			100	100	055	L	33	.97	32	6	9	3	4	1	10	1.8	53	.7		1	2	40	110	-		CAN ONLY SEE LAYER GOUGES.
ZAA 26	1253.2	37.0			110	110	070	L	61	.98	59	31	7	10	3	2	8	1.5	41	.7		0	-	-	-	-		
AAGB 27	1310.0	40.2		090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		NO SONAR
BBCB 28	1326.0	42.1			160	250	135	L	40	1.73	69	38	0	1	0	1	0	.9	13	.5		0	-	-	-	-		(1:977) RUNNING ANTENNA TO GOUGES AND THE FATHOGRAM WILL NOT GIVE GOOD DATA.
CCDD 29	1341.0	44.6			160	250	110	M	51	1.73	88	43	2	5	0	0	1	1.0	12	.6		0	-	-	-	48.3		
DDEE 30	1356.0	42.0			10	100	265	M	36	2.38	85	-	-	-	-	-	-	-	14	-		0	-	-	-	48.1		FATHOGRAM NO GOOD.
EEFF 31	1410.0	42.1			175	265	110	M	32	2.00	64	-	-	-	-	-	-	-	-	-		0	-	-	-	48.3		FATHOGRAM NO GOOD.
FFGG 32	1424.0	41.8			190	-	-	-	-	-	-	-	-	-	-	-	-	2.2	-	1.1		-	-	-	-	48.1		NO SONAR

[illegible]

[illegible]

ICE GOUGE DATA RECORD

1980

BEGINNING SEG. SCALE 1:2008

VESSEL	KARLUK
TEMPLATE SIZE	4.6 MTS

SEGMENT	START TIME	START DEPTH KM	DISTANCE FROM COAST KM	SHIP'S COURSE °T	OBSERVED ORIENTATION °	ADJUSTED ORIENTATION °T	ORIENTATION VARIANCE	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY PER KM	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION DEPTH M	MAXIMUM INCISION WIDTH M	MAXIMUM INCISION LENGTH M	MULTI-INCISION GOUGES				DEPTH TO FILL REFLECTOR M	SONAR RANGE M	REMARKS
KM		M			DOM	SUB		OBS	±	PER KM	NMP	2-4	4-6	6-8	8-10	>10	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM INCISION WIDTH M	MAXIMUM INCISION LENGTH M	DEPTH TO FILL REFLECTOR M	SONAR RANGE M	
HB 1	0656.6	2.3		090	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.2	-	NO SONAR
BC 2	0703.3	2.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.7	-	NO SONAR
CD 3	0711.0	2.9			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.7	-	NO SONAR
DE 4	0718.3	3.3			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.9	-	NO SONAR
EF 5	0725.8	3.8			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.9	-	NO SONAR
FG 6	0731.8	4.2			145	235	-	L	19	1/13	21.5	19	0	0	0	0	<1.2	3	<1.2		0	-	-	-	15.1	12.5	ROUGH GEMS - SOME DISTORTION ON ALL RECORDS - FILL GOUGES IN ONE SMALL AREA
GH 7	0738.9	4.6			-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.8		SOME BOTTOM FEATURES (FUNNY BOTTOM) SHOWING THROUGH SURFACE SEDIMENTS.
HI 8	0745.2	4.9			40	130	-	L	4	1/20	4.8	4	0	0	0	0	<1.2	5	<1.2		0	-	-	-	11.0		BOTTOM OUTCROPS MAY BE SED. WAVE FORMS - ORIGIN 240° - APPEAR ON SONAR AND FATHO.
IJ 9	0752.9	5.0			30	120	-	L	3	1/38	4.1	3	0	0	0	0	<1.2	2	<1.2		0	-	-	-	8.5		BED FORM / WAVE PATTERN DIES OUT BY END OF SEGMENT.
JK 10	0801.3	5.3			-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	9.0		
KL 11	0810.0	5.3			-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	10.1		
LM 12	0818.0	4.2			-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	9.7		
MN 13	0826.0	5.0			-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	9.8		SEDIMENT WAVES
NO 14	0833.9	5.1			-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	11.0		SEG. SCALE 1:1524 SEDIMENT WAVES
OP 15	0843.0	5.3			140	230/150	M	3	1/20	3.6	3	0	0	0	0	0	<1.2	1	<1.2		0	-	-	-	14.3		SEDIMENT WAVES - FUNNY BOTTOM IN TROUGHS, GOUGES ON CRESTS. VERY SMALL GOUGES.
PQ 16	0853.0	6.8			30	120	-	L	2	1/38	2.8	2	0	0	0	0	<1.2	2	<1.2		0	-	-	-	15.2		SAME AS SEGMENT OP. SMALL PATCH OF SEDIMENT RIPPLES.

TRACE(S) 1

ICE GOUGE DATA RECORD

1980

VESSEL

KARLUK

TEMPLATE
SIZE

4.6 mts

DATE		START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	PRECIPITATION	NUMBER OF OBS.	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM PROTRUSION HEIGHT	MAXIMUM PROTRUSION LENGTH	MULTI-INCISION GOUGES					DEPTH TO FIRST REFLECTION	SONAR RANGE	REMARKS
55	253	SEGMENT	KM	M	KM	T	DOM	SUB	PRECIPITATION	NUMBER OF OBS.	CORRECTION FACTOR	GOUGE DENSITY	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM PROTRUSION HEIGHT	MAXIMUM PROTRUSION LENGTH	DOMINANT ORIENTATION	DEPTH TO FIRST REFLECTION	SONAR RANGE	REMARKS		
QR 17	0903.2		6.7		090	30	120	-	L	3	1.38	4.1	3	0	0	0	0	0	<.2	1	<.2		0	-	-	-	125	125	SEDIMENT WAVES - FUNNY BOTTOM W TROUGHS, GOUGES ON CRESTS.			
RS 18	0913.0		7.0			20	110	-	L	5	1.73	8.7	5	0	0	0	0	0	<.2	2	<.2		1	2	9	110	120	SAME AS SEGMENT QR.				
ST 19	0921.1		7.2			30	120	-	L	4	1.38	5.5	4	0	0	0	0	0	<.2	7	<.2		1	3	13	120	140	SEG. WAVES - SAME AS SEG. QR.				
TU 20	0930.7		9.2			150	240	-	L	6	1.38	8.3	6	0	0	0	0	0	<.2	8	<.2		1	2	14	240	13.5					
UV 21	0939.0		10.1		080	45	125	220	L	13	1.13	14.1	13	0	0	0	0	0	<.2	3	<.2		1	2	7	105	14.1				SEG. SCALE 1:1524	
VW 22	0948.2		10.1			45	125	225	M	8	1.13	9.0	8	0	0	0	0	0	<.2	4	<.2		1	3	8	225	14.9				FUNNY BOTTOM TYPE OUTCROPS. SED. WAVES.	
WX 23	0955.9		10.0			145	225	110	M	25	1.28	32.0	25	0	0	0	0	0	<.2	11	<.2		0	-	-	-	15.4				SED. WAVES. SAME AS SEG. VW. FUNNY BOTTOM III TROUGHS - GOUGING THROUGHOUT THE SEGMENT. 1:2008	
XY 24	1003.2		10.9			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	15.8				NO SONAR THIS SEGMENT. 1:1524	
YZ 25	1012.0		12.0			150	230	110	M	70	1.38	96.6	68	2	0	0	0	0	.3	13	.3		3	3	25	230	17.4					
ZAA 26	1020.9		12.4			45	125	235	M	34	1.13	38.4	34	0	0	0	0	0	<.2	6	<.2		6	3	18	235	19.0					
ABBB 27	1029.6		12.7			30	110	230	M	18	1.38	24.8	18	0	0	0	0	0	<.2	6	<.2		2	2	3	245	17.5					
BBCC 28	1038.2		13.1			25	105	255	M	45	1.31	69.3	45	0	0	0	0	0	<.2	10	<.2		1	23	70	255	18.7					
CCDD 29	1047.6		13.5			165	245	80	L	35	2.00	110.0	33	2	0	0	0	0	.2	4	<.2		3	8	40	250	18.7				1:2008 .25 KM OF SONAR MISSING - COUNT ADJUSTED.	
DDEE 30	1055.2		13.9			20	140	100	220	M	36	1.73	62.3	32	4	0	0	0	.3	11	.4		0	-	-	-	18.3				.25 KM OF SONAR MISSING - ADJUSTED	
EETF 31	1103.3		14.6			30	110	220	M	23	1.38	31.7	20	2	1	0	0	0	.5	21	.3		2	3	43	090	20.5					
FFGG 32	1112.0		14.8			40	035	-	L	10	1.20	12.0	8	2	0	0	0	0	.2	22	.3		0	-	-	-	-				SWELL DISTORTS REEFS. SONAR POOL.	

TRAINING

55

ICE GOUGE DATA RECORD

1980

VESSEL

KARLUK

TEMPLATE
SIZE

4.6 A70

DATE	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF MEASUREMENTS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS											MAXIMUM INCISION WIDTH	MAXIMUM HEIGHT	MAXIMUM LENGTH	MULTI-INCISION GOUGES				DEPTH TO REFLECTOR	SONAR RANGE
SEGMENT	KM	M	KM	°T	DOH	SUB	VAR	DOH	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION	M	M	REMARKS			
GBHH 33	1119.9	15.3		355	140/170	135	165	M	12	120	14	3	3	2	1	0	0	.6	22	.5		0	-	-	-	-	125			
HHH 34	1227.2	15.3			135/65	130	060	L	36	113	40	17	4	6	5	2	2	1.2	13	.8		3	2	48	130	-				
11JJ 35	1136.5	15.7			140/165	135	160	L	27	120	32	14	8	4	1	0	0	.6	15	.5		3	6	25	135	-				
JJKK 36	1147.0	16.0			140/-	135	-	L	22	120	26	20	1	1	0	0	0	.5	10	.4		1	6	25	160	-				
KLLL 37	1157.0	16.5			50/-	045	-	L	6	108	6.5	-	-	-	-	-	-	20	-		0	-	-	-	-	-				
LLMM 38	1207.6	-			135/-	130	-	L	11	113	12	-	-	-	-	-	-	8	-		0	-	-	-	-	-				
MMNN 39	1218.0	17.1			-/-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-				
NNOO 40	1228.0	17.3			-/-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-				
OO PP 41	1239.4	-			-/-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-				
PPQQ 42	1249.0	-			-/-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-				
QQRK 43	1258.8	18.7			-/-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-				
RRSS 44	1308.2	18.8			-/-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-				
SS TT 45	1318.0	18.7			135/-	130	-	L	18	113	20	16	1	0	1	0	0	.7	10	4.2		0	-	-	-	-				
TTUU 46	1331.0	18.9			115/150	110	145	M	25	99	24	20	3	2	0	0	0	.6	10	.4		0	-	-	-	-				
UUVV 47	1348.0	18.9			120/150	115	145	M	35	101	35	29	6	2	0	0	0	.4	13	.4		0	-	-	-	27.2				
VVWW 48	1356.0	19.0			115/130	110	125	M	45	99	44	33	10	2	0	0	0	.4	22	.5		0	-	-	-	27.5	↓			

ICE GUAGE DATA RECORD

1980

VESSEL

KARLUK

TEMPLATE
SIZE

4.6 HTS

TRACKING		ICE GAUGE DATA RECORD																			1980		VESSEL KARLUK				TEMPLATE SIZE 4.6 HTS					
DATE	253	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GAUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM DEPTH	MAXIMUM LENGTH	MULTI-INCISION GAUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE		
SEGMENT	KM	M	M	KM	°T	DOH	SUB	ORIG. HIGH COR.	OBS	L	FA	NMP	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GAUGE	MAXIMUM DISRUPTION WIDTH (M)	DOMINANT ORIENTATION	M	M	REMARKS
WJXX 49	408.0	18.8			355	120/155	115	150	M	107	.99	105	90	10	5	2	0	0	0	0	0	.6	17	5		3	4	25	150	26.5	125	(1:1106) GAUGES OF OPEN 150°T APPEAR YOUNGER THAN THOSE OF 115°T ORIGIN.
XXVY 50	420.0	18.9				155/115	150	110	M	79	1.54	121	65	13	1	0	0	0	0	0	0	.4	15	2		2	3	16	150	-	-	
VYZZ 51	431.0	18.9				120/150	115	145	L	56	.99	55	44	12	0	0	0	0	0	0	0	.3	13	2		2	4	27	150	-	-	
ZZAA 52	441.2	19.2				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.7	-	-		-	-	-	-	28.0	-	NO SONAR THIS SEGMENT
AAAB 53	449.2	19.5				125/145	120	140	L	44	1.04	95	30	11	3	0	0	0	0	0	0	.5	18	5		0	-	-	-	27.4	-	SEG. SCALE 1:1695
BBBC 54	457.7	19.7				130/-	125	-	L	31	1.08	33	21	8	2	0	0	0	0	0	0	.5	15	3		1	4	20	005	29.7	-	
CCDD 55	506.8	19.7				105/155	100	150	H	23	.97	22	16	6	1	0	0	0	0	0	0	.4	13	5		1	4	20	005	30.6	-	
DEEE 56	513.8	19.4				130/-	125	-	L	9	1.08	9.7	6	3	0	0	0	0	0	0	0	.3	11	2		0	-	-	-	-	-	GAUGES APPEAR TO BE INFILLED.
EEFF 57	522.0	19.3				45/140	140	135	M	2	1.13	2.3	2	0	0	0	0	0	0	0	0	<.2	7	2		0	-	-	-	30.5	-	BLANKET OF RECENT SEDIMENT COVERS BOT TOM 7
FFGG 58	530.0	19.0			347	130/-	110	-	L	4	1.08	4/3	3	1	0	0	0	0	0	0	0	.2	3	2		0	-	-	-	-	-	
GGHH 59	538.0	19.1				130/90	110	070	L	7	1.08	7.6	7	0	0	0	0	0	0	0	0	<.2	13	2		0	-	-	-	-	-	
HHII 60	546.0	20.0			315	140/165	095	120	L	48	1.20	57	45	3	0	0	0	0	0	0	0	.3	18	4		2	2	15	120	30.0	-	
IIJJ 61	554.1	20.5				145/30	100	345	L	75	1.28	96	61	9	5	0	0	0	0	0	0	.5	33	5		1	3	26	155	29.3	-	(1:2008)
JJKK 62	560.8	20.0				120/160	075	115	M	131	1.01	132	99	24	6	2	0	0	0	0	0	.7	15	8		4	3	17	075	29.8	-	SUBBOTTOM HAS SOME CHARACTER (1:1524)
KKLL 63	561.7	20.2			310	125/15	105	355	L	105	1.04	109	77	20	7	1	0	0	0	0	0	.7	10	7		6	4	37	130	27.6	-	
LLMM 64	5620.0	20.2				125/20	105	000	M	87	1.04	90	49	24	10	3	1	0	0	0	0	.9	15	10		4	3	20	105	28.3	-	

1980

KARLUK

412

DATE 253		INCISION DEPTH DISTRIBUTION METERS															MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR		SONAR RANGE		VESSEL TEMPLATE SIZE		KTD		
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	DEPTHS OBSERVED	ADJUSTED DEPTH	INCISION VARIABLE	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	NMP	1-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISTRIBUTION WIDTH	DOMINANT DISTRIBUTION	DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS		
KM	MM	M	KM	°T	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH	DBH
65	1629.0	205	340	115	095	130	L	79	99	78	61	18	7	2	1	0	.8	23	7	1	2	7	105	27.8	125	SUD BOTTOM HAS GOUGE CHARACTER.			
66	1638.0	20.6	358	140	138	043	M	63	120	75	16	37	6	2	2	0	.9	8	12	3	11	45	138	30.4	1				
67	1648.0	21.0	60	115	058	113	L	47	101	47	0	44	7	2	1	0	.8	20	5	1	4	22	113	—	(1:110%) SONAR VERY POOR. NOT SEE ALL GOUGES				
68	1700.0	21.3	105	115	103	143	M	70	197	67	36	28	5	1	0	0	.7	20	12	0	—	—	—	27.0					
END	1710.4	21.5																						27.4					

[illegible]

1980

START SEG. SCALE 1:1695

VESSEL	KARLUK
TEMPLATE SIZE	4.0 NTC

[illegible]

[illegible]

1980

START SEG. SCALE 1:1695

VESSEL

KARLUK

**TEMPLATE
SIZE**

40.

[illegible]

ICE GOUGE DATA RECORD

1980

START SEG. SCALE 1:2008

VESSEL

KARLUK

TEMPLATE
SIZE

4.6 m

60A

DATE

264

SEGMENT

KM

START TIME

START DEPTH

DISTANCE FROM COAST

SHIP'S COURSE

OBSERVED ORIENTATION

ADJUSTED ORIENTATION

ORIENTATION VARIABILITY

NUMBER OF INCISIONS

CORRECTION FACTOR

GOUGE DENSITY

INCISION DEPTH DISTRIBUTION METERS

MAXIMUM INCISION WIDTH

MAXIMUM RIDGE HEIGHT

MAXIMUM SPAN LENGTH

MULTI-INCISION GOUGES

NUMBER

MAXIMUM INCISIONS PER GOUGE

MAXIMUM DISJUNCTION WIDTH

DOMINANT ORIENTATION

DEPTH TO BLAST REFLECTOR

SONAR RANGE

REMARKS

ORIENTATION AND QUALITY MAKE SMALLER GOUGES DIFFICULT TO SEE.

COURSE CHANGE IMPAIRS QUALITY OF SONAR. CAN SEE SOME SMALLER GOUGES.

NO FATHOGRAM UNTIL SEG. END.

NO FATHOGRAM

NO FATHOGRAM

NO FATHOGRAM

NO FATHOGRAM

NO FATHOGRAM

NO FATHOGRAM

NO FATHOGRAM

NO FATHOGRAM

NO FATHOGRAM

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[illegible]

1979

TRACKLINES

ICE GOUGE DATA RECORD

1979

SEGMENT SCALE

1:1695

VESSEL	KARLUK
TEMPLATE SIZE	4.0 MTS

TRACELINE	DATE	SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	OPERATION VARIABILITY	NUMBER OF INCLINATIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WITHIN METER	MAXIMUM RIDGE HEIGHT	MAXIMUM BOW-TO-LEAST	MULTI-INCLINON GOUGES				DEPTH TO REFLECTOR	SONAR RANGE	REMARKS
44	237		KM	M	KM	°T	DOH SUB	DOH SUB	DOH SUB	DOH SUB	DOH SUB	DOH SUB	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISION PER GOUGE	MAXIMUM DISTANCE BETWEEN GOUGES	DOMINANT ORIENTATION	DEPTH TO REFLECTOR	SONAR RANGE	
AB	1	1505.0	3.9	2	306	40	046	—	L	9	120	10.8	8	1	0	0	0	0	.2	2	3	0	—	—	—	—	125		SHOALS. BOTTOM OUTCROPS (POSSIBLY BOULDERS SCATTERED?)
BC	2	1513.3	10.4	1/2	—	—	—	—	—	0	—	0	0	0	0	0	0	0	0	0	0	0	—	—	—	156			BOTTOM OUTCROPS
CD	3	1520.7	12.3	2.2	—	120/40	126	046	L	38	101	38.4	38	0	0	0	0	0	<.2	6	<.2	0	—	—	—	—			SHOAL CREST AT END OF SEGMENT CONTAINS THE GOUGES OBSERVED. BOTTOM OUTCROPS.
DE	4	1528.8	15.5	3.2	—	115	121	—	L	43	99	42.6	43	0	0	0	0	0	<.2	5	<.2	0	—	—	—	19.6			
EF	5	1536.2	16.7	4.2	—	65/125	071	131	M	81	99	80.2	76	5	0	0	0	0	.2	6	3	0	—	—	—	22.9			2 METER BENCH. SMALL INCREASE IN DENSITY AND SIZE OF HOGUES TO SEAWARD.
FG	6	1543.3	19.8	5.2	—	105/60	111	066	M	123	97	119.3	123	0	0	0	0	0	<.2	11	2	3	4	22	041	25.9/28.1			
GH	7	1551.8	20.8	6.2	—	95/80	101	086	M	177	98	173.5	158	12	3	2	2	0	1.0	8	.7	5	4	21	046	27.5			LARGER EDGES (DEEPER) ON SEAWARD SLOPE OF BENCH AT SEGMENT END.
HI	8	1559.8	22.0	7.2	—	50/105	056	111	M	124	108	133.9	45	24	31	14	7	3	1.1	8	.8	5	4	37	041	29.2			END OF UPPER REFLECTOR. 2 METER BENCH. GOUGING DENSITY AND DEPTH INCREASES TO SEAWARD.
IJ	9	1607.2	24.2	8.1	—	105/65	111	071	M	153	97	148.4	55	19	22	7	15	35	1.9	14	1.1	6	11	62	026	37.9			TRAIL OF LOWER REFLECTOR
JK	10	1616.4	26.2	9.1	—	120/50	126	056	M	145	101	146.5	77	17	21	10	7	13	2.0	22	1.0	6	15	81	031	39.0			
KL	11	1624.0	27.6	10.1	—	55/135	061	141	M	128	104	133.1	48	10	19	11	14	26	2.4	19	1.9	7	15	81	066	38.2			
LM	12	1632.0	28.2	11.1	—	50/145	056	151	L	119	108	128.5	37	15	16	11	11	29	3.0	18	1.4	8	5	39	156	37.5			
MN	13	1640.5	29.0	12.1	—	55/120	061	126	M	147	104	152.9	67	16	20	11	13	20	1.6	16	1.0	4	2	15	066	38.0			
NO	14	1648.0	30.0	13.1	—	120/95	126	101	L	93	101	93.9	10	15	18	11	22	17	1.9	12	1.3	4	2	35	126	37.5			
OP	15	1656.0	30.5	14.1	—	95/65	101	071	L	98	98	88.2	6	22	19	12	13	26	2.0	15	1.7	2	2	20	071	40.4			2 MILES OF SONAR MISSING. POINT FORCED
PQ	16	1703.7	31.0	15.1	—	115/50	121	056	L	122	99	66.3	37	17	29	10	12	17	1.5	12	1.3	2	2	10	121	41.1			POINT P ART OF SEAWARD. 9 MILES MISSING FROM SEGMENT. POINT FORCED

[illegible]

ICE GOUGE DATA RECORD

1979

SEG. SCALE 1:1695

VESSEL	KARLUK
TEMPLATE SIZE	4.0 KTS

DATE		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVED ORIENTATION		ADJUSTED ORIENTATION		ORIENTATION VARIABILITY		NUMBER OF INJECTIONS		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MULTI-INCH GOUGES			DEPTH TO FIRST REFLECTOR		SONAR RANGE		REMARKS
246																																							
SEGMENT		TIME		DEPTH		DISTANCE		COURSE		ORIENTATION		ORIENTATION		VARIABILITY		NUMBER		CORRECTION		DENSITY																			
KM		M		M		KM		°T		DOH		SUB		DOH		SUB		DOH		SUB																			
AB		1617.0		5.5		1.0		030		40		070		---		L		26		120																			
BC		1622.0		11.0		1.9		40		070		---		L		66		120																					
CD		1639.0		12.9		2.9		60		090		---		L		38		101																					
DE		1649.0		14.3		3.9		40		070		045		M		51		120																					
EF		1658.5		16.7		4.9		60		090		050		L		97		101																					
FG		1708.4		18.2		5.9		60		090		050		L		72		101																					
GH		1717.2		17.1		6.8		20		050		090		L		107		120																					
HI		1726.5		21.2		7.8		55		085		140		M		91		104																					
IJ		1735.5		22.4		8.8		090		120		090		L		62		100																					
JK		1744.0		24.2		9.8		115		145		080		M		52		99																					
KL		1752.0		25.3		10.7		30		060		015		M		41		138																					
LM		1803.0		26.6		11.7		100		130		070		L		67		97																					
MN		1811.0		26.5		11.6		155		---		---		---		---		---																					
NO		1819.0		25.9		11.0		---		---		---		---		---		---																					
OP		1827.0		24.4		10.5		---		---		---		---		---		---																					
PQ		1835.0		22.7		9.8		40		225		295		M		106		98																					

TRACKLINE

ICE GOUGE DATA RECORD

7979

63

DATE

246

SEGMENT

KM

66
END

START
TIME

2035.5

START
DEPTH

M

DISTANCE
FROM
COAST

KM

SHIP'S
COURSE

°T

OBSERVED
ORIENTATION

°

ADJUSTED
ORIENTATION

°

ORIENTATION
VARIABILITY

°

NUMBER
OF
INCISIONS

085

CORRECTION
FACTOR

J

GOUGE
DENSITY

GRA
MM

INCISION
DEPTH DISTRIBUTION
METERS

NMP

2-4

4-6

6-8

8-10

>1

MAX

MAXIMUM
INCISION
WIDTH

M

MAXIMUM
PROUSE
WEIGHT

M

MAXIMUM
INCISION
LENGTH

M

MULTI-INCISION GOUGES

NUMBER

MAXIMUM
INCISIONS
PER GOUGE

MAXIMUM
DISSECTION
WIDTH

MAXIMUM
DISSECTION
WIDTH

DOMINANT
ORIENTATION

DEPTH TO
FIRST
REFLECTOR

M

SONAR
RANGE

M

REMARKS

9.9 125

VESSEL KARLUK
TEMPLATE SIZE 4.0 MTS

ICE GOUGE DATA RECORD

1977

SEGMENT SCALE 1:1695

VESSEL	KARLUK
TEMPLATE SIZE	4.0 KTS

DATE		START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM PROJECTIONS LENGTH	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS
SEGMENT	KM	HOURS MINUTES SECONDS	M	KM	°T	DOM SUB	DOM SUB	°T	OBS	L	PER KM	1-2	2-4	4-6	6-8	8-10	>10	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISCUSSION WIDTH (M)	MAXIMUM DISCUSSION LENGTH (M)	M	M	
AB	1	1407.0	4.8	1.7	010	35	045	165	M	25	128	32	22	2	1	0	0	0	4	3	3	2	2	5	165	-	125	BOTTOM OUTCROPS. BOULDER ON SEA FLOOR.
BC	2	1415.5	6.5	1.3		35	045	-	L	5	128	6.4	5	0	0	0	0	0	2	3	2	0	-	-	-	11.3		SEDIMENT WAVES. BOTTOM OUTCROP AND BOULDER IN TROUGH. SMOOTH, SOFT TONE RETURN ON CRESTS.
CD	3	1424.7	7.6	2.0		40	050	-	L	2	120	2.4	2	0	0	0	0	0	2	5	2	0	-	-	-	11.5		SEDIMENT RIPPLES (ORIENT. 160°T)
DE	4	1433.4	8.8	2.9		40	050	180	M	14	120	16	14	0	0	0	0	0	2	3	2	0	-	-	-	13.9		15 M SHOAL (3 GOUGES TERMINATE ON CREST) AT PT. D. 15 M SHOAL ON E (GOUGING ON SEAWARD SIDE)
EF	5	1442.3	9.8	3.7		30	040	175	M	25	138	34	24	1	0	0	0	0	2	2	4	2	2	4	010	-		2 M SHOAL AT PT. F (ICE GROUNDED SEAWARD OF CREST).
FG	6	1451.2	11.2	4.8		120	130	030	L	28	101	28	27	1	0	0	0	0	2	4	3	0	-	-	-	15.3		2 M SHOAL AFTER PT. F. (GOUGING ON CREST - ORIENT. 130°T). TROUGH BEFORE SHOAL HAS BOULDERS IN IT. SCATTERED BOULDER BOULDERS SCATTERED ACROSS FLOOR.
GH	7	1500.5	12.6	5.4	255	165	060	260	M	22	2.00	44	22	0	0	0	0	0	2	3	2	0	-	-	-	17.7		BOULDERS SCATTERED ACROSS FLOOR.
HI	8	1509.2	12.4	4.7		165	060	270	M	21	2.00	42	20	1	0	0	0	0	2	6	2	0	-	-	-	16.5		BOULDERS SCATTERED ACROSS FLOOR.
IJ	9	1518.2	11.6	4.2		15	270	-	L	10	2.00	20	10	0	0	0	0	0	2	2	2	0	-	-	-	-		SOME BOULDERS.
JK	10	1529.1	11.1	3.6		25	280	320	L	15	1.54	23	15	0	0	0	0	0	2	4	2	1	2	3	285	-		BOULDERS.
KL	11	1536.3	10.8	2.6		50	305	-	L	7	1.08	7.6	7	0	0	0	0	0	2	3	2	0	-	-	-	-		SEDIMENT WAVES - BOULDERS AND OUTCROP IN TROUGHS. SMOOTH FACES.
LM	12	1543.4	9.5	1.8		60	315	-	L	6	1.01	6.1	6	0	0	0	0	0	2	2	2	0	-	-	-	-		SED. WAVES - BOULDERS AND OUTCROP IN TROUGHS.
NN	13	1552.0	7.7	.8		15	270	-	L	4	2.00	8.0	4	0	0	0	0	0	2	2	2	0	-	-	-	-		SHOALS - BOULDERS IN TROUGHS.
NO	14	1601.0	3.2	.2	325	150	115	345	M	3	1.38	4.1	3	0	0	0	0	0	2	2	2	0	-	-	-	-		SED. WAVES - CREST TROUGHS.
OP	15	1611.0	5.3	.3		140	105	125	L	22	1.20	26	22	0	0	0	0	0	2	4	2	0	-	-	-	-		SED. WAVES - BOULDER AND OUTCROP IN TROUGHS. GOUGING ON CRESTS.
PQ	16	1621.0	5.5	.6		160	125	015	L	16	1.73	27	16	0	0	0	0	0	2	3	2	0	-	-	-	-		SED. WAVES - BOULDERS AND OUTCROP IN TROUGHS. GOUGING ON CRESTS.

ICE GOUGE DATA RECORD

1979

VESSEL	KARLUK
TEMPLATE SIZE	4.0 HTG

SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM RIDGE HEIGHT	MAXIMUM SLOPE	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS		
											N	M	P	2-4	4-6	6-8	8-10	>1	MAX	M	M	M										
65	247																															
GR 17	1630.5	8.1	1.2	325	50	130	015	095	L	7	108	7.6	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	SED. WAVES - BOULDERS AND OUTCROP
RS 18	1641.0	11.0	1.7		150	40	115	005	M	63	138	86	54	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
ST 19	1651.7	12.6	2.4		140	165	105	130	M	68	120	81	64	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217		
TU 20	1702.2	13.0	3.1		145	165	110	130	L	54	128	69	53	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
END	1712.0	13.1	3.8																													

TRK MARK (1) ORIGIN: 570°T L: 36 M
W: 4 M

TRACKLINE		ICE GOUGE DATA RECORD																		SEGMENT SCALE 1:2526										
66		1979																		VESSEL		KARLUK								
248																				TEMPLATE SIZE		5.4 ATB								
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	GOUGE ORIENTATION	ADJUSTED DEPRESSION	T	ORIENTATION	NUMBER OF OBS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GOUGES				DEPTH REFLECTOR	SONAR RANGE			
KM	TIME	M	KM	T	SUB	DOM	SUB	2-4	5-6	7-8	9-10	11	MAX	M	M	M	NUMBER	MAXIMUM INCISION DEPTH PER GOUGE	MAXIMUM DISTANCE FROM COAST	MAXIMUM DISTANCE FROM COAST	MAXIMUM DISTANCE FROM COAST	DEPTH REFLECTOR	SONAR RANGE	REMARKS						
AB 1	1120.0	3.1	—	270	—	—	—	—	0	—	0	0	0	0	0	0	0	0	—	—	—	—	125							
BC 2	1128.3	2.8	—	000	—	—	—	—	0	—	0	0	0	0	0	0	0	0	—	—	—	—								
CD 3	1136.0	3.5	—	35	—	035	—	L	9	1.28	11.5	9	0	0	0	0	0	0	0	0	0	0	0	WEST END OF FLAMEN ISLAND SEEN ON SONAR. BOTTOM OUTCROPS DOMINANT LONG PERIOD SEDIMENT WAVES.						
DE 4	1145.0	5.1	2.0	40	—	040	—	L	11	1.20	13.2	11	0	0	0	0	0	0	0	0	0	0	0	SEDIMENT WAVES. BOTTOM OUTCROPS						
EF 5	1153.2	7.6	2.4	40	—	040	—	L	9	1.20	10.9	9	0	0	0	0	0	0	0	0	0	0	0	SED. WAVES. BOTTOM OUTCROPS						
FG 6	1201.0	9.4	2.9	155	—	155	020	L	5	1.54	17.1	5	0	0	0	0	0	0	0	0	0	0	0	SEDIMENT RIPPLES (OF 10 CM) 100%.						
GH 7	1208.4	12.3	3.5	155	—	155	—	L	3	1.54	4.6	3	0	0	0	0	0	0	0	0	0	0	0							
HI 8	1216.5	14.8	4.3	165	—	165	—	L	11	2.00	22.0	11	0	0	0	0	0	0	0	0	0	0	0	POSSIBLE GROUNDING. 10 CM MULTI-INCISION GOUGE. 10 CM TO 10 CM GROUNDING BEHIND 12 M BATHY ALSO.						
IJ 9	1225.0	17.3	5.2	160	—	160	055	L	28	1.73	48.14	27	1	0	0	0	0	0	0	0	0	0	0	SMALL SEA SWELL IS REFLECTED IN BATHYGRAPH. SONOGRAPH QUALITY POOR (SWELL ~ 10 CM).						
JK 10	1233.6	19.5	6.0	150	—	150	055	M	39	1.04	40.16	36	3	0	0	0	0	0	0	0	0	0	0	EXPENSE 11 GOUGE DENSITY AT 20 MINT.						
KL 11	1242.2	21.2	6.7	70	—	070	—	L	65	.98	63.14	63	1	1	0	0	0	0	0	0	0	0	0							
LM 12	1250.6	21.7	7.6	110	—	110	050	M	85	.98	83.13	70	10	5	0	0	0	0	0	0	0	0	0	ONLY 10 CM OF SONAR THIS SEGMENT						
MA 13	1259.0	22.2	8.4	125	—	125	070	M	23	1.04	86.13	64	17	2	0	0	0	0	0	0	0	0	0							
MB 14	1307.0	23.3	9.2	135	—	135	085	M	118	1.08	127.14	77	17	10	7	6	1	1.2	15	1.2	15	1.2	4	6	29	145	—	—	—	FRONTAL SONAR. 10 CM
MC 15	1315.5	23.3	10.0	120	—	120	155	M	147	1.01	148.15	92	26	17	6	5	1	1.0	14	.8	14	.8	5	11	54	155	—	—	—	1/2 PM MISSING. 10 CM SONOGRAPH. 10 CM ADJUSTED TO 1 PM. SONOGRAPH QUALITY POOR.
MD 16	1323.7	26.6	11.0	135	—	135	040	L	65	1.13	72.15	18	23	13	9	2	0	.8	15	1.0	15	1.0	2	5	130	135	—	—	—	SONAR AND SONOGRAPH QUALITY POOR. NUMBERS INDICATE REPRESENTATIVE IN TRUE VALUES.

ICE GOUGE DATA RECORD

1979

VESSEL	AM JK
TEMPLATE SIZE	5.4/10

TRACELINE		ICE GOUGE DATA RECORD																			1979		VESSEL					AM JK											
DATE		START TIME		START DEPTH		DISTANCE FROM COAST		SHIP'S COURSE		OBSERVATION		ADJUSTED ORIENTATION		ORIENTATION		NUMBER OF READING		CORRECTION FACTOR		GOUGE DENSITY		INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GAUGES		DEPTH TO REFLECTOR		SONAR		PAGE	
248																																							
SEGMENT		TIME		M		KM		°T		°		°		°		°		°		°																			
KM		M		M		M		M		M		M		M		M		M		M																			
OR 17		1332.1	27.0	11.9	000	140	155	L	78	120	93	50	12	12	2	1	1	1.1	18	.7	2	3	35	130	-	125	SONAR AND FATHOGRAM QUALITY POOR. NUMBERS MAY NOT BE REPRESENTATIVE.												
RS 18		1340.3	28.7	12.9		125	125	M	74	104	77	38	23	10	2	1	0	.9	10	1.2	0	-	-	-	-	1	SONAR QUALITY POOR. NUMBERS MAY NOT BE REPRESENTATIVE. SMALLER GOUGES ARE MASKED BY SWELL.												
ST 19		1349.5	29.0	13.9		130	130	L	55	108	59	9	17	16	5	6	2	1.2	17	.8	1	2	75	140	-		SONAR QUALITY POOR. NUMBERS MAY NOT BE REPRESENTATIVE. SWELL GETTING BIGGER.												
TU 20		1357.5	29.3	14.7		125	-	L	53	104	55	6	20	17	8	2	0	1.0	14	.9	1	3	140	130	-		SONAR QUALITY POOR. SMALLER GOUGES ARE MASKED DUE TO QUALITY AND SWELL.												
UV 21		1407.2	30.3	15.6		125	125	L	60	104	62	20	12	14	6	4	4	1.3	13	.8	1	3	35	145	-		SONAR POOR. LARGE SEA SWELL. NUMBERS ARE NOT RELIABLE.												
VW 22		1417.2	31.0	16.6		110	-	L	66	98	64	39	11	6	3	3	4	1.3	26	.8	1	5	32	000	-		SONAR POOR. LARGE SWELL. SMALLER NUMBERS. SMALLER GOUGES CAN NOT BE SEEN ON EITHER RECORD.												
WX 23		1425.6	31.0	17.3	210	20	-	L	80	173	138	33	13	21	8	3	2	1.3	9	.7	3	7	43	275	-		CHANGE IN COURSE IMPROVES SONAR DEFINITION. THIS MAY ACCOUNT FOR HIGHER NUMBERS. FATHOGRAM V. POOR.												
XY 24		1435.0	30.9	17.0		20	280	L	147	173	234	68	37	24	10	7	1	1.2	18	1.0	1	16	95	070	-		FATHOGRAM V. POOR. DIFFICULT TO SEPARATE MULTI-LINE GOUGES FROM OTHERS.												
YZ 25		1446.2	30.4	16.9		20	280	L	134	173	231	60	34	16	6	9	9	1.6	38	.8	2	17	63	260	-		FATHOGRAM POOR.												
ZAA 26		1455.0	29.6	16.7		20	280	L	114	173	197	44	28	16	10	9	4	1.3	15	1.1	1	2	33	300	-		FATHOGRAM POOR. DIFFICULT TO SEE MULTI-LINE GOUGES.												
AARB 27		1502.6	29.0	16.4	230	50	280	L	88	108	95	35	26	11	7	8	1	1.2	23	.6	2	6	34	250	-		CHANGE IN COURSE MAKES GOUGES DIFFICULT TO COUNT ON SWATH. FATHOGRAM POOR.												
BBCC 28		1508.3	29.0	16.1		15	245	M	113	200	226	43	14	15	7	4	0	.9	10	.7	3	9	54	245	-		FATHOGRAM POOR. SONAR POOR.												
CCDD 29		1517.5	28.2	15.4		40	240	L	70	120	84	9	26	14	6	8	7	1.4	62	1.4	0	-	-	-	-		SONAR POOR. CAN NOT SEE SMALL GOUGES.												
DD EE 30		1526.3	27.8	14.6		60	290	L	98	101	97	32	23	17	5	11	10	1.3	11	1.0	2	7	38	265	-														
EE FF 31		1535.0	26.8	13.9		55	285	M	120	101	121	69	20	16	5	5	5	2.0	25	.9	4	12	65	285	-														
FF GG 32		1543.1	25.6	13.0		65	295	M	131	99	129	68	21	18	7	7	10	1.5	12	.6	4	12	65	255	31.1														

1979

VESSEL	MARLUK
TEMPLATE SIZE	5.4 mtr

DATE		START TIME	START DEPTH	DISTANCE FROM SHIP'S COAST	SHIP'S COURSE	OBSERVATION	ADJUSTED ORIENTATION	T	VARIABLE	NUMBER OF OBS.	CORRECTION FACTOR	DOUSE DENSITY	INCISION DEPTH DISTRIBUTION METERS										M	M	M	MULTI-INCISION DATA				DIST TO FIRST ALLEGATOR	SOURCE	REMARKS
248	248												KM	M	KM	T	DOM SUB	DOM SUB	HEAT LOSS COR.	OBS	L	PSS KM				NMP	2-4	4-6	6-8			
GCHH 33	1551.4	24.2	12.3	Z30		50/35	280	265	M	122	108	131.8	66	24	17	7	6	2	1.1	7	10		3	2	13	260	330	125				
NHII 34	1559.5	23.0	11.7			25/40	255	270	M	172	154	261.9	89	39	22	6	6	10	1.7	8	12		8	7	90	245	339					
IITJ 25	1606.5	21.6	10.9			20/55	250	285	M	159	173	275.1	94	22	9	11	14	9	1.4	13	.9		4	5	19	235	307					
JTKK 26	1613.9	20.4	10.2			50/170	280	040	M	95	108	102.6	58	21	6	5	4	1	1.0	10	.5		4	6	23	040	30.8					
KRLC 27	1621.7	20.2	9.4			50/15	280	245	L	86	108	92.9	75	9	2	0	0	0	.5	6	.3		2	4	14	245	26.6					
LLMM 28	1629.0	18.8	8.6			50/170	280	040	M	176	108	190.1	112	31	3	0	0	0	.5	5	.3		4	4	17	240	24.5					
MMNN 29	1638.0	17.3	8.0			25/165	255	135	L	101	154	155.5	91	9	1	0	0	0	.5	3	.3		3	2	8	255	22.7					
NNOO 40	1646.0	16.7	7.3			45/10	275	240	M	95	113	107.4	89	5	0	1	0	0	.8	6	.8		6	3	10	240	26.9					
OOPP 41	1655.0	14.8	6.8			30/85	260	235	L	57	138	78.7	54	3	0	0	0	0	.3	4	.3		1	2	7	235	11.9					
PPQQ 42	1703.5	13.0	6.3			15/165	245	035	L	15	200	30.0	13	2	0	0	0	0	.3	4	.6		1	2	3	235	17.4					
QQRR 43	1712.0	11.5	6.0			25/-	255	-	L	12	159	18.5	11	1	0	0	0	0	.2	5	.2		0	-	-	-	16.0					
RRSS 44	1719.2	10.7	5.9			20/160	260	020	L	51	173	88.2	50	1	0	0	0	0	.2	3	.2		0	-	-	-	15.1 18.0		✓			
SSTT 45	1727.2	9.2	5.8			160/22	030	245	M	41	173	79.7	41	0	0	0	0	0	.2	3	.2		0	-	-	-	27.7					
TTTT 46	1736.0	7.7	5.7			20/145	240	015	M	32	173	50.4	31	1	0	0	0	0	.2	4	.2		0	-	-	-	12.3 15.0					
VVVV 47	1744.2	7.0	4.8			155/15	025	245	M	15	154	29.1	14	1	0	0	0	0	.2	2	.2		1	2	8	020	16.5					
WWWW 48	1747.2	6.5	4.8			20/175	250	045	M	32	173	55.4	32	0	0	0	0	0	.2	2	.2		0	-	-	-	13.0					

REMARKS

DEPTH (M) - CHANGE IN DENSITY
AND MAX. DEPTH.

Bottom outcrops consist of beds on
subbottom reflector.

BUTTON HITCHES, THE BOTTOM HITCH
BANDS FOR EYE, EAR AND MOUTH
VERTICAL HITCH.

LONG RANGE SIG. TALKS
POSITION OVERCROWD

SECRETARY HAVE BEEN THE
VERY FIRST IN THE BOTTOM BOY

BOTTOM SURFACE OF WALLS, FINE
RODS ON SURFACING. IN BOTTOM, WITH
SMALL SILLI CONCRETE. 50 CM. SURFACES

ENTERED OUTDOOR

NO. 1000-100000

[illegible]

[illegible]

TRACKLINE		ICE GOUGE DATA RECORD															SEGMENT NAME 1:1695										
77		1979															VESSEL		KARLUK								
253																	TEMPLATE		4.0 KTS								
SEGMENT	START TIME	START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF RECORDS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SOURCE RANGE	REMARKS
											NMP	2-4	5-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH	DOMINANT ORIENTATION			
KM	TIME	M	KM	T	DOM	SUB	HIGH	OBS	L	PER	NMP	2-4	5-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISRUPTION WIDTH	DOMINANT ORIENTATION	M	M	
AB	0920.0	11.0	3.8	028	40	068	093	L	52	120	62	44	8	0	0	0	.3	10	.3		0	-	-	-	-	125	SONAR RECORD FAIR - 5 NM SONAR RANGE COUNT CORRECTED.
BC	0929.5	12.7	4.7		45	073	-	L	17	113	19	17	0	0	0	0	<.2	3	<.2		0	-	-	-	-		POINT B NOT ON SONAR. 3.5 MIN. OF SONAR MISSING FROM 5 NM COUNT CORRECTED.
CD	0939.7	12.8	5.6		40	078	073	L	30	98	29	1	0	0	0	0	.2	5	<.2		0	-	-	-	-		
DE	0946.5	14.7	6.6		40	078	-	L	29	98	28	29	0	0	0	0	<.2	11	<.2		1	2	6	178	-		20 CM SW. LL - UNABLE TO SEE SMALL GOUGES ON FATHOM L.
EF	0955.0	16.1	7.5		15	043	-	L	9	200	18	9	0	0	0	0	<.2	2	<.2		2	2	8	043	-		SHORT PERIOD ALL - POOR J. POOR.
FG	1005.0	18.1	8.5		30	058	028	M	147	138	202	120	17	9	2	0	1.1	6	.4		3	9	53	068	-		1 M. BEACH - CHANGED TO DEPTH IN. GROUND. DEPTH - 2 NM. OF SONAR MISSING. COUNT CORRECTED.
GH	1016.0	19.8	9.4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	RECORDED 200 YDS. TO COUNT.
HI	1024.9	22.7	10.2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	
IJ	1041.0	23.6	11.2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	
JK	1052.8	26.4	12.1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	
KL	1104.0	27.2	13.1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	
LM	1115.0	27.6	14.1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	
NO	1124.5	28.0	15.1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	
OP	1138.5	27.2	16.0		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	SONAR NOT ON - 1 NM.
Q	1150.0	20.0	16.9		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	2.5 NM MISSING FROM 5 NM COUNT.
PO	1201.7	20.3	17.9		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	5.5 NM MISSING FROM 5 NM COUNT.

TRACKLINE

77

ICE GOUGE DATA RECORD

1979

VESSEL

KARLUK

TEMPLATE
SIZE

4.0 KTB

DATE

253

SEGMENT

KM

START
TIMESTART
DEPTHDISTANCE
FROM
COASTSHIP'S
COURSEOBSERVED
ORIENTATIONADJUSTED
ORIENTATIONORIENTATION
VARIABILITYNUMBER
OF
OBSERVATIONSCORRECTION
FACTORGOUGE
DENSITYINCISION DEPTH DISTRIBUTION
METERSFOR TIE
INCISION
WIDE
HEIGHTFOR TIE
INCISION
WIDE
HEIGHTFOR TIE
INCISION
WIDE
HEIGHT

MULTI-INCISION GOUGES

NUMBER

MAXIMUM
INCISIONS
PER GOUGEMAXIMUM
DISRUPTION
WIDTHDOMINANT
ORIENTATIONDEPTH TO
FIRST
REFLECTORSONAR
RANGE

REMARKS

R
END

1213.0

31.4

18.9

028

-

125

78

ICE GOUGE DATA RECORD

1979

S.S. SCALE 1:1524

1:2326

DATE

1979

253

SEGMENT

START TIME

START DEPTH

DISTANCE FROM COAST

SHIP'S COURSE

OBSERVER'S ORIENTATION

ADJUSTED ORIENTATION

ORIENTATION VARIABILITY

NUMBER OF OBS.

CORRECT OR FACTOR

GOUGE DENSITY

INCISION DEPTH DISTRIBUTION METERS

MAXIMUM INCISION DEPTH

MAXIMUM RIDGE HEIGHT

MAXIMUM PLATE LENGTH

MULTI-INCISION GOUGES

NUMBER

MAXIMUM INCISION DEPTH PER GOUGE

MAXIMUM RIDGE HEIGHT

MAXIMUM PLATE LENGTH

DOMINANT ORIENTATION

DEPTH TO FIRST REFLECTOR

SONAR RANGE

AB

1

1219.0

31.4

11.0

240

25

265

295

M

149

154

229

92

24

16

8

6

3

11

13

7

2

4

21

265

125

BC

2

1227.4

30.7

18.1

45

20

285

260

L

115

113

130

81

12

10

5

6

1

1.2

15

1.0

3

3

23

25

CD

3

1232.9

30.9

17.4

40

160

280

040

L

123

120

147

81

26

10

4

2

0

1.0

19

1.0

5

7

33

040

DE

4

1239.3

30.5

16.8

40

10

280

250

L

116

120

139

72

23

16

1

2

2

1.4

23

1.0

6

5

32

250

EF

5

1246.0

30.2

16.0

45

20

285

260

L

106

113

119

60

27

15

4

1

0

.8

15

1.3

4

4

22

045

FG

6

1253.5

29.8

15.0

55

130

295

010

L

119

104

123

66

19

22

8

3

1

1.1

16

.8

4

8

35

250

GH

7

1302.0

28.6

11.0

50

30

290

270

L

122

108

131

62

35

11

8

5

1

1.3

17

.8

4

8

38

270

HI

8

1310.0

27.0

13.0

60

25

300

265

L

107

101

108

54

27

16

4

4

2

1.6

15

1.1

6

4

49

265

IJ

9

1317.4

27.0

12.1

60

25

300

265

L

121

101

122

53

20

15

10

8

7

1.3

10

1.2

4

4

32

290

JK

10

1325.0

27.0

11.1

65

20

305

270

L

167

99

165

75

26

21

8

10

7

1.3

10

1.0

6

4

27

285

KL

11

1333.2

26.6

10.1

65

30

305

270

L

201

99

199

120

33

22

12

8

6

1.4

11

1.0

6

5

22

270

LM

12

1342.0

23.5

9.1

75

25

315

265

M

165

97

160

91

33

13

9

10

9

1.8

12

.6

7

11

47

265

MN

13

1347.3

21.5

9.1

60

165

300

045

L

194

101

199

131

32

13

7

3

11

1.5

9

.6

5

7

30

045

N

14

1357.0

19.6

7.1

<

VESSEL	KARLUK
TEMPLATE SIZE	1.5 KTS

REMARKS

1.5 MIN. MISSING FROM SONAR RANGE CORRECTED

Point L. NOT ON Sonar. E. All MISSING. CORRECTED 1:2326

1.5 MIN. MISSING FROM SONAR RANGE CORRECTED

[illegible]

TRACE LINE

ICE GOUGE DATA RECORD

1979

VESSEL

KARLUK

TEMPLATE
SIZE

4.0 KTS

DATE		START TIME		START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS										MAXIMUM INCISION WIDTH	MAXIMUM DEPTH	MAXIMUM LENGTH	MULTI-INCISION GOUGES					DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS
SEGMENT	KM	MM	SS	M	KM	°T	DOH	SUB	DOH	SUB	DOH	SUB	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISSECTION WIDTH	MAXIMUM DISSECTION DEPTH	DOMINANT ORIENTATION	M	M				
QR 17	1526.0	12.1	8.2	305	35	340	-	1	5	1.28	6.4	4	0	0	0	0	0	0	0	3	4.2		0	-	-	-	16.7	125	2.5 M SHAL - 1. AREA OF KE POSSIBLY GROUNDED ON SHOAL. 5 M HUNG IN SUB BOTTOM BELOW SHOAL.				
RS 18	1533.3	12.3	9.2		135	080	335	M	11	1.13	12.4	11	0	0	0	0	0	0	0	3	4.7		0	-	-	-	20.1						
ST 19	1540.8	12.6	8.5		155	100	325	M	12	1.54	18.5	12	0	0	0	0	0	0	0	3	4.2		1	2	15	320	16.4						
TU 20	1548.2	12.6	9.6		140	-	085	-	L	20	1.20	24.0	20	0	0	0	0	0	0	4	4.2		0	-	-	-	18.6						
UV 21	1556.0	12.6	6.7		135	080	320	L	30	1.15	33.9	30	0	0	0	0	0	0	0	3	4.2		0	-	-	-	19.2		2 MIN. OF RATHBONE. POSSIBLE.				
VU 22	1603.4	-	5.8		30	335	075	L	39	1.38	52.8	39	0	0	0	0	0	0	0	3	4.2		0	-	-	-	-		PL. V HUNG ON THE 15.00M. 3 MIN. OF RATHBONE. POSSIBLE. 500. RIPPLES COULD BE SEEN.				
WY 23	1611.5	13.5	5.7		135	080	345	M	35	1.13	39.6	32	2	0	0	0	0	0	0	3	4.2		0	-	-	-	17.7						
XY 24	1617.8	14.3	4.7		155	100	340	M	38	1.54	58.5	36	2	0	0	0	0	0	0	3	4.2		0	-	-	-	7.0		3 MIN. OF RATHBONE. POSSIBLE. 500. RIPPLES COULD BE SEEN.				
YZ 25	1626.1	16.0	4.2		150	075	320	L	37	1.38	51.1	34	3	0	0	0	0	0	0	2	4.2		1	2	8	325	21.5						
ZX 26	1634.0	16.3	3.2		140	085	320	L	51	1.20	61.2	46	5	0	0	0	0	0	0	2	4.2		1	2	12	090	23.0		BOTTOM CHANGES.				
AA 27	1644.5	15.1	3.3		30	335	090	M	103	1.38	142.1	92	11	0	0	0	0	0	0	3	4.2		3	2	4	115			1 M. 15 MIN. OF RATHBONE.				
BB 28	1649.2	14.3	2.9		130	075	325	M	132	1.08	142.6	117	14	1	0	0	0	0	0	4	5.5		1	2	7	045	26.0						
CC 29	1659.5	18.1	2.5		125	080	105	M	128	1.13	144.6	108	15	4	1	0	0	0	0	6	6.5		6	4	20	105	22.6						
DD 30	1705.6	18.3	2.7		130	095	332	M	96	1.38	132.5	79	16	1	0	0	0	0	0	5	11.4		2	5	27	110	24.0						
EE 31	1714.0	18.5	2.1		155	100	075	L	151	1.51	222.5	127	21	3	0	0	0	0	0	12	15.5		1	3	10	215	24.9		POSSIBLE PRESENCE OF RATHBONE. 1 M. 15 MIN. OF RATHBONE.				
FF END	1722.5	18.5	2.9																														

POSSIBLE PRESENTATION OF DATA

ICE GOUGE DATA RECORD

1979

SEGMENT SCALE 1:1645
111524VESSEL KARLUK
TEMPLATE SIZE 4.0 KTS

TRACKLINE		ICE GOUGE DATA RECORD														1979		SEGMENT SCALE 1:1695 111524										VESSEL KARLUK		
DATE 263		START TIME		START DEPTH	DISTANCE FROM COAST	SHIP'S COURSE	OBSERVED ORIENTATION	ADJUSTED ORIENTATION	T	ORIENTATION VARIABILITY	NUMBER OF INCISIONS	CORRECTION FACTOR	GOUGE DENSITY	INCISION DEPTH DISTRIBUTION METERS							MAX. DEPT. INCISION WIDTH	MAXIMUM DEPTH	MAXIMUM DISTANCE BETWEEN GOUGES	MULTI-INCISION GOUGES				DEPTH TO FIRST REFLECTOR	SONAR RANGE	REMARKS
SEGMENT	KPI	HOURS MINUTES SECONDS	M	KM	*T	DOM	SUB	HIGH MED LOW	OB3	L	PER KM	NMP	2-4	4-6	6-8	8-10	>1	MAX	M	M	M	NUMBER	MAXIMUM INCISIONS PER GOUGE	MAXIMUM DISTANCE BETWEEN GOUGES	DOMINANT ORIENTATION	M	M			
AB	1	1414.0	11.8	4.5	356	90	086	-	L	14	100	44	33	11	0	0	0	0	.3	11	.3		0	-	-	-	-	125	~20 CM SWELL. DEPT - 5 ARE CONNECTED SWELL. GOUGES 12 FEET DEPT. BUT TO CORRELATIONS	
BC	2	1423.0	11.7	5.3		80	076	-	L	58	97	56	47	11	1	0	0	0	.9	5	.3		0	-	-	-	18.3		SMALL SWELL - THE 12 FEET DEPT. SWELL. GOUGES 12 FEET DEPT. BUT TO CORRELATIONS	
CD	3	1432.5	13.0	6.2		-	-	-	0	-	0	0	0	0	0	0	0	0	0	0	0		0	-	-	-	19.8		3 METER SWELL IN MID	
DE	4	1442.0	14.5	7.2		130	126	-	L	5	108	54	5	1	0	0	0	0	.2	3	.2		0	-	-	-	-			
EF	5	1450.6	15.0	8.2		145	141	-	L	5	128	64	5	1	0	0	0	0	.2	5	.2		0	-	-	-	22.0			
FG	6	1500.0	17.7	9.3		80	076	116	L	56	97	54	51	4	1	0	0	0	.5	12	.3		0	-	-	-	23.2			
GH	7	1510.6	20.5	10.3		100	076	-	L	110	97	106	97	11	2	0	0	0	.4	40	.5		1	3	25	031	26.8			
HI	8	1520.8	21.9	11.4		110	106	-	L	174	98	178	57	12	5	0	0	0	.4	18	.3		0	-	-	-	28.4			
IJ	9	1531.2	22.2	12.5		115	111	-	L	108	97	106	83	14	7	2	1	0	.8	18	.4		1	8	43	116	28.7			
JK	10	1541.0	24.1	13.6		120	111	-	L	96	98	94	73	21	2	0	0	0	.5	9	.4		0	-	-	-	-			
KL	11	1551.0	22.6	14.7		125	121	-	L	146	104	149	45	18	12	0	0	0	.5	6	.4		0	-	-	-	29.0			
LM	12	1601.8	22.1	15.8		115	111	097	L	124	97	125	100	17	9	0	1	0	.8	21	.4		2	4	22	121	28.7			
NO	13	1612.0	23.8	16.7		111	076	-	L	114	97	131	114	25	5	0	0	0	.5	10	.3		2	2	31	021	29.1		THE GOUGES (12) ARE CONNECTED SWELL	
OP	14	1622.8	20.6	18.0		120	116	066	L	221	98	234	161	25	30	12	5	0	.9	20	.5		6	12	55	126	29.5		THE 12 FEET DEPT. SWELL. GOUGES 12 FEET DEPT. BUT TO CORRELATIONS	
PQ	15	1634.7	23.2	19.1		120	121	076	L	165	101	171	96	22	20	16	9	2	1.2	19	.7		6	4	22	126	-		THE 12 FEET DEPT. SWELL. GOUGES 12 FEET DEPT. BUT TO CORRELATIONS	
VO	16	1645.2	24.1	20.2		120	121	140	L	162	101	168	60	30	21	17	13	6	1.5	14	.7		4	3	23	146	-		THE 12 FEET DEPT. SWELL. GOUGES 12 FEET DEPT. BUT TO CORRELATIONS	