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Special Report 43 Part II

ICE THICKNESS OBSERVATIONS, NORTH AMERICAN ARCTIC AND SUBARCTIC 1960-61, 1961-62

U.S. ARMY MATERIEL COMMAND
COLD REGIONS RESEARCH & ENGINEERING LABORATORY
HANOVER, NEW HAMPSHIRE

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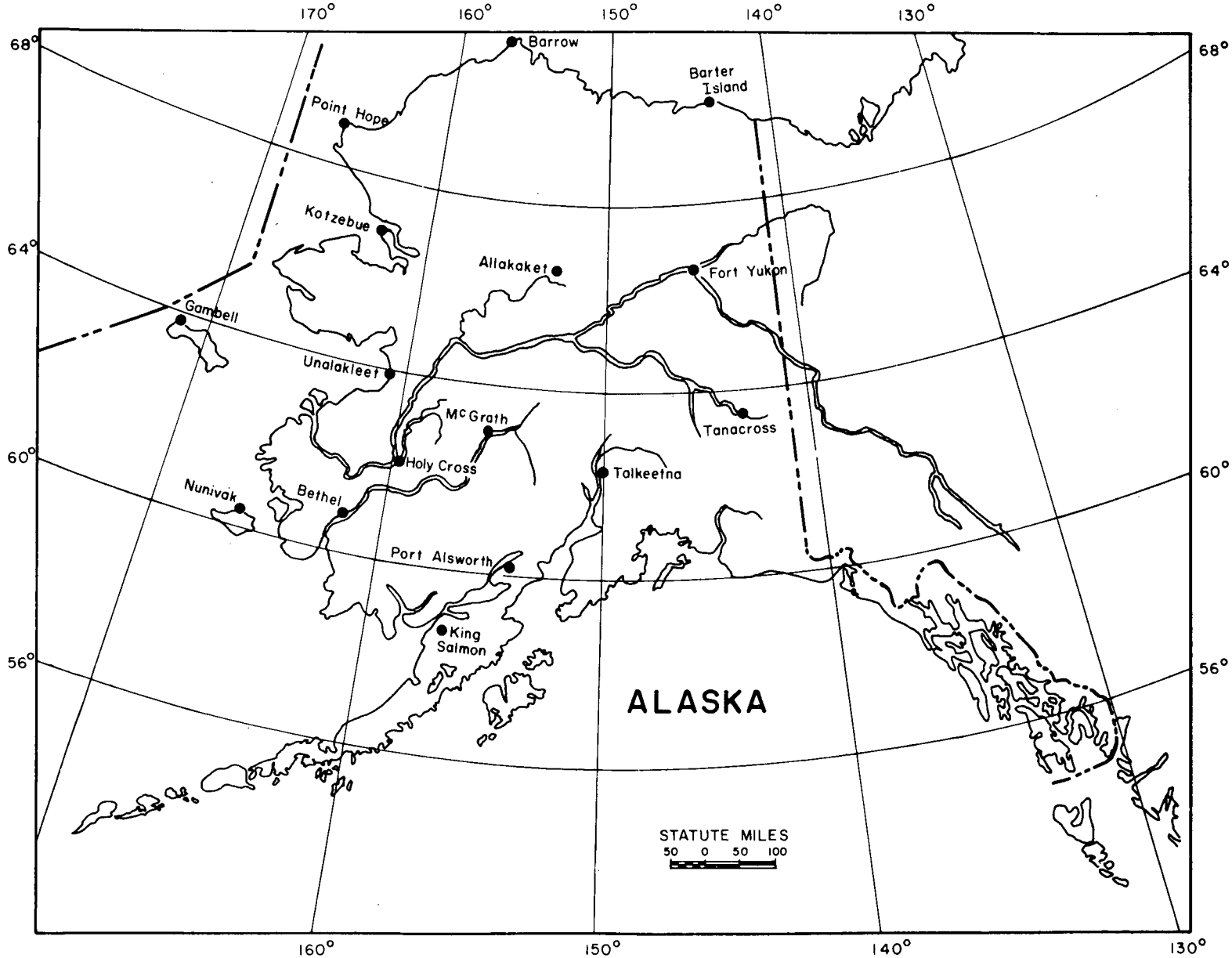


Figure 1. Map of Alaskan stations.

ICE THICKNESS OBSERVATIONS IN THE NORTH AMERICAN ARCTIC AND SUBARCTIC FOR 1960-61, 1961-62

by

Michael A. Bilello

Introduction

The first report in this series (Bilello, 1961) describes the initiation and expansion of the ice thickness measurement network in Canada. By May of 1960, 30 locations throughout Canada were providing complete records and four stations in Alaska and Greenland were providing partial records. In the first report the ice measuring equipment and observational procedures were described, ice thickness measurements from 1958 to 1960 were tabulated, and isoline maps of maximum observed ice thicknesses for this period were presented.

Ryder (1954) conducted a study on ice thickness in the Northern Hemisphere in connection with construction and maintenance of airdromes on ice. His report contained a comprehensive bibliography on lake and river ice, a tabulation of ice thickness data from North America, and brief records on ice thickness for 41 stations in the U.S., 38 stations in Canada (only 6 of which were North of 54° N latitude), and 6 stations in Alaska. Attention was directed to the fragmentary nature of the little ice data available, and the need for a planned program for ice thickness observations was stressed.

Williams (1963), using the data in Ryder's study and recent records of ice thickness in Canada, developed probability charts for predicting ice thickness on a regional basis. The charts can be used to obtain a reasonable estimate of the probable rate of ice growth and ice thickness in Canada, and to relate maximum ice thickness to the length of the period of ice growth.

This second report prepared by USA CRREL is a continuation of the current observational program and presents data on ice thickness during the 1960-61 and 1961-62 seasons. The network has been expanded to Alaska during this period and some station changes have taken place. These changes are discussed and some supplemental ice thickness data for two stations on the east coast of Greenland are presented. The data are presented in their original form, as was done in the previous report, in order to make them fully available to potential users. Analysis has been limited to a study of maximum ice thicknesses.

Network expansion

Attempts to expand the ice thickness network to Alaska were unsuccessful prior to 1961 because observers could not be found. It became apparent that, because of staffing problems at remote locations, an existing network had to be used. Through the cooperation of the Regional Director and State Climatologist, U.S. Weather Bureau, Alaska, an ice thickness program was started in that state during the fall of 1961. The locations selected for these observations depended upon the existence of established weather stations and the availability of local personnel who could be trained to make the measurements. Figure 1 shows the 16 Alaska stations now participating in the program.

A few changes have also been made in the Canadian station network since the first report was published. Aklavik, N.W.T., was abandoned after November 1960 and Inuvik (located a short distance away) was used instead. Hopes Advance Bay was discontinued after 1958-59 and no replacement was made. Five new Canadian stations (Fort Chipewyan, Hopedale (1960-61 only), Knob Lake, South Baymouth and Trout Lake) have been added, so that 35 stations are presently in the program. The locations of the Canadian stations in the network are shown in Figure 2.

The U.S. Coast Guard personnel at Cape Atholl continue to make ice thickness observations at that site and reports of ice conditions have been received from civilian contractors at Chariot Site, Alaska. Reports from Saglek Bay, Newfoundland, and Sondrestrom, Greenland were not received during 1960-62.

A list of all reporting stations for 1960-62, with the location, elevation and period of record is given in Table I.

Figure 3. Ice Thickness Report Form.

Station _____ Month _____ 19____

1. Measurement Site: _____

_____

2.

(a) Day of month	(b) Ice thickness (nearest $\frac{1}{2}$ in.)	(c) Depth of snow directly over point of measurement (nearest $\frac{1}{2}$ in.)	(d) Character of surface	(e) Cracks (nil, few, numerous)	(f) Avg depth of snow cover (nearest $\frac{1}{2}$ in.) and density if possible

3. Leads or Cracks: _____

_____

_____

4. Remarks: _____

_____

_____

_____

_____

_____

Observer _____

Instructions for the Use of Form

1. For "Measurement Site" note bearing and distance from a significant landmark and report any significant change of the site. The ice thickness should be measured near the same spot throughout the ice season.
2. "Character of Surface" is reported as: Smooth, Light Ridging, Moderate Ridging, or Heavy Ridging.
3. Under "Leads or Cracks" when possible, include: location, length and width.
4. In "Remarks", include date when ice first forms, date when the ice first extends from shore to shore or to the horizon, date of first ice movement (or first visible break-up) and date when ice is completely gone. In general, brief descriptions of the ice conditions during the periods of formation and break-up are required.
5. One copy of this form should be forwarded by mail at the end of each month to: Alaska State Climatologist, U. S. Weather Bureau, Anchorage Alaska. One copy should be retained on station files.

Table I. List of participating stations.

Station	Location	Elevation (ft)	Period of record
Aklavik, * N. W. T.	68°14'N 135°00'W	30	18 Nov 1960 - 25 Nov 1960
Alert, N. W. T.	82°30'N 62°20'W	205	15 Oct 1960 - 26 June 1961 31 Aug 1961 - 9 June 1962
Allakaket, Alaska	66°30'N 152°40'W	approx 400	2 Oct 1961 - 21 May 1962
Angmagssalik, Greenland	65°40'N 37°50'W	approx 30	25 Nov 1950 - 3 June 1952 1 Nov 1958 - 30 June 1961
Arctic Bay, N. W. T.	73°00'N 85°18'W	36	28 Oct 1960 - 30 June 1961 13 Oct 1961 - 13 July 1962
Baker Lake, N. W. T.	64°18'N 96°00'W	30	21 Oct 1960 - 7 July 1961 4 Oct 1961 - 11 July 1962
Barrow, Alaska	71°23'N 156°30'W	22	16 Dec 1961 - 2 June 1962
Barter Island, Alaska	70°10'N 143°40'W	39	7 Oct 1961 - 26 May 1962
Bethel, Alaska	60°48'N 161°45'W	10	12 Oct 1961 - 29 May 1962
Brochet, Manitoba	57°53'N 101°40'W	1,150	23 Oct 1960 - 5 June 1961 25 Oct 1961 - 9 June 1962
Cambridge Bay, N. W. T.	69°06'N 105°08'W	74	16 Oct 1960 - 20 July 1961 6 Oct 1961 - 1 July 1962
Cape Atholl, Greenland	76°19'N 69°22'W	unknown	1 Oct 1960 - 31 May 1961 5 Oct 1961 - 31 May 1962
Cape Parry, N. W. T.	70°10'N 124°41'W	53	20 Oct 1960 - 31 May 1961 18 Oct 1961 - 25 May 1962
Cartwright, Newfoundland	53°42'N 57°00'W	34	2 Dec 1960 - 20 May 1961 5 Jan 1962 - 25 May 1962
Chariot Site, Alaska	68°06'N 165°46'W	unknown	26 Nov 1960 - 3 July 1961
Chesterfield Inlet, N. W. T.	63°20'N 90°43'W	13	4 Nov 1960 - 30 June 1961 18 Nov 1961 - 29 June 1962
Churchill, Manitoba	58°45'N 94°04'W	115	17 Oct 1960 - 24 Apr 1961 9 Oct 1961 - 27 Mar 1962

*Replaced by Inuvik, Nov 1960.

Table I. List of participating stations (cont'd).

Station	Location	Elevation (ft)	Period of record
Clyde River, N.W.T.	70°27'N 68°33'W	10	11 Nov 1960 - 22 July 1961 13 Oct 1961 - 20 July 1962
Coppermine, N.W.T.	67°49'N 115°05'W	28	4 Nov 1960 - 9 July 1961 15 Oct 1961 - 31 May 1962
Coral Harbour, N.W.T.	64°12'N 83°22'W	193	2 Oct 1960 - 10 July 1961 13 Oct 1961 - 5 July 1962
Danmarkshavn, Greenland	76°45'N 18°45'W	43	13 Sept 1950 - 31 July 1954 7 Aug 1958 - 30 June 1961
Ennadai Lake, N.W.T.	61°08'N 100°55'W	1,065	18 Oct 1960 - 1 July 1961 7 Oct 1961 - 8 July 1962
Eureka, N.W.T.	80°00'N 85°56'W	8	30 Aug 1960 - 16 June 1961 6 Sep 1961 - 16 June 1962
Fort Chipewyan, Alberta	58°43'N 111°09'W	68	7 Jan 1962 - 30 Apr 1962
Fort Yukon, Alaska	66°34'N 145°18'W	447	10 Oct 1961 - 6 June 1962
Frobisher Bay, N.W.T.	63°45'N 68°33'W	68	31 Dec 1960 - 26 May 1961 31 Oct 1961 - 25 June 1962
Gambell, Alaska	63°40'N 172°48'W	approx 25	25 Nov 1961 - 2 June 1962
Goose Bay, Newfoundland	53°19'N 60°25'W	144	2 Dec 1960 - 28 Apr 1961 15 Dec 1961 - 28 May 1962
Hall Beach, N.W.T.	68°47'N 81°15'W	34	24 Oct 1960 - 23 June 1961 13 Oct 1961 - 1 June 1962
Holman Island, N.W.T.	70°30'N 117°38'W	30	21 Oct 1960 - 31 July 1961 5 Oct 1961 - 22 June 1962
Holy Cross, Alaska	62°12'N 159°47'W	60	12 Oct 1961 - 21 May 1962
Hopedale, Newfoundland	55°28'N 60°12'W	35	13 Dec 1960 - 26 May 1961
Inuvik, N.W.T.	68°13'N 133°29'W	198	12 Nov 1960 - 27 May 1961 16 Oct 1961 - 2 June 1962
Isachsen N.W.T.	78°47'N 103°32'W	83	7 Aug 1960 - 28 July 1961 1 Sept 1961 - 16 June 1962
King Salmon, Alaska	58°09'N 155°25'W	44	2 Dec 1961 - 21 Apr 1962

Table I. List of participating stations (cont'd).

Station	Location	Elevation (ft)	Period of record
Knob Lake (Maryjo Lake) Quebec	54°48'N 66°49'W	1,681	11 Nov 1960 - 13 June 1961 10 Nov 1961 - 24 June 1962
Kotzebue, Alaska	66°52'N 162°38'W	10	27 Nov 1961 - 25 May 1962
McGrath, Alaska	62°58'N 155°35'W	334	9 Oct 1961 - 18 May 1962
Moosonee, Ontario	51°16'N 80°39'W	34	10 Nov 1960 - 1 May 1961 17 Nov 1961 - 4 May 1962
Mould Bay, N.W.T.	76°14'N 119°20'W	50	30 Sept 1960 - 9 June 1961 22 Sept 1961 - 7 June 1962
Nicolet, Quebec	46°14'N 72°36'W	74	8 Dec 1960 - 24 Mar 1961 30 Nov 1961 - 30 Mar 1962
Nitchequon, Quebec	53°12'N 70°54'W	1,690	12 Oct 1960 - 6 June 1961 31 Oct 1961 - 30 June 1962
Norman Wells, N.W.T.	65°17'N 126°48'W	209	11 Nov 1960 - 23 May 1961 10 Nov 1961 - 23 May 1962
Nunivak, Alaska	60°23'N 166°11'W	40	10 Nov 1961 - 31 May 1962
Point Hope, Alaska	68°20'N 166°45'W	approx 20	29 Oct 1961 - 27 May 1962
Port Alsworth, Alaska	60°10'N 154°08'W	approx 400	26 Oct 1961 - 31 May 1962
Port Harrison, Quebec	58°27'N 78°08'W	66	20 Oct 1960 - 24 June 1961 24 Nov 1961 - 15 June 1962
Resolute, N.W.T.	74°43'N 94°59'W	209	8 Aug 1960 - 28 July 1961 26 Sept 1961 - 19 July 1962
Sachs Harbour, N.W.T.	71°57'N 124°44'W	277	31 Oct 1960 - 23 June 1961 13 Oct 1961 - 8 June 1962
South Baymouth, Ontario	45°35'N 81°59'W	596	5 Jan 1962 - 22 Apr 1962
Spence Bay, N.W.T.	69°31'N 93°27'W	44	8 Oct 1960 - 25 July 1961 19 Sept 1961 - 13 Apr 1962
Talkeetna, Alaska	62°19'N 150°08'W	346	4 Nov 1961 - 29 May 1962
Tanacross, Alaska	63°24'N 143°20'W	approx 1,500	8 Oct 1961 - 14 May 1962

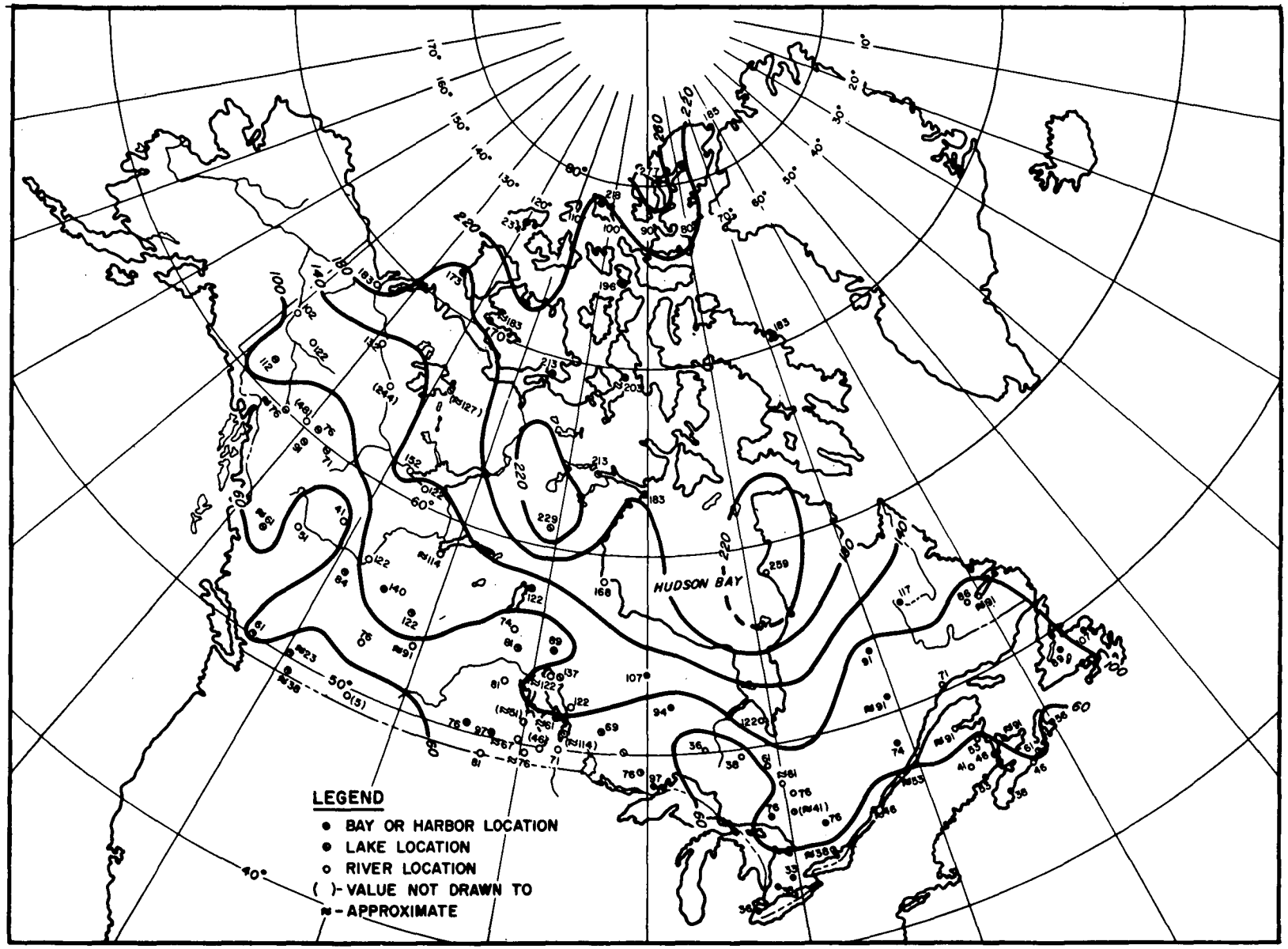


Figure 4. Maximum observed ice thicknesses in cm (1956-57).

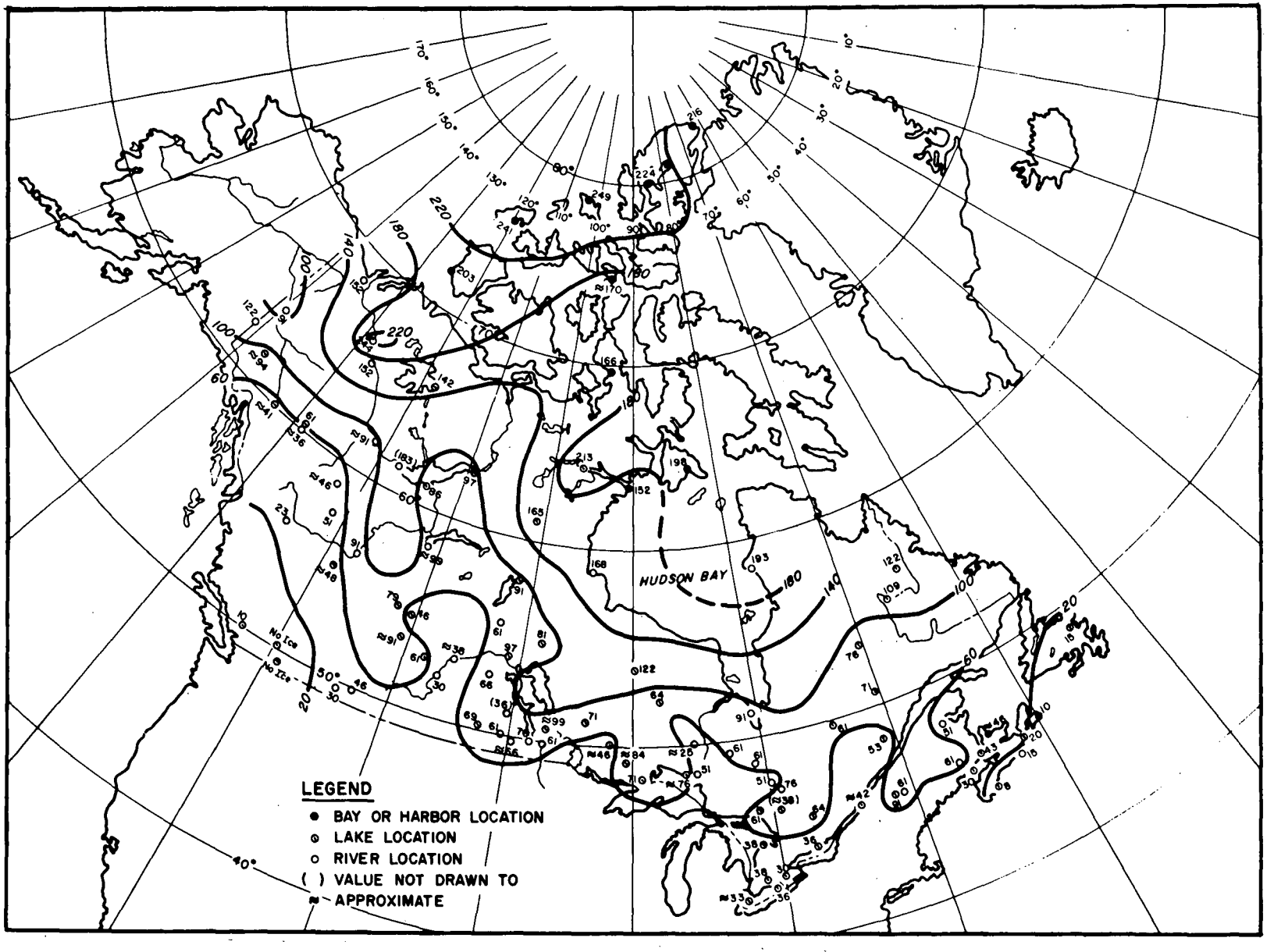


Figure 5. Maximum observed ice thicknesses in cm (1957-58).

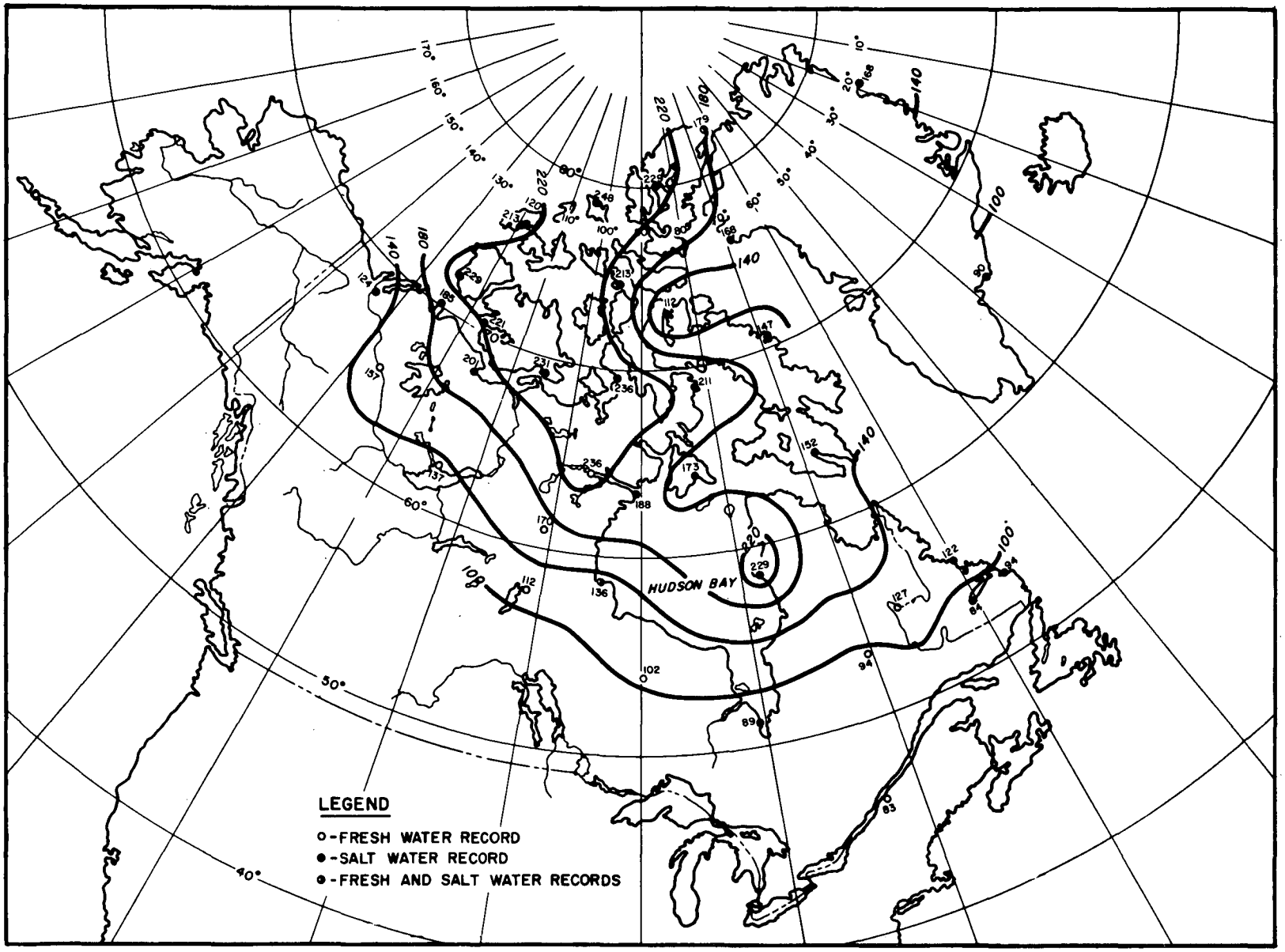


Figure 6. Maximum observed ice thicknesses in cm (1960-61).

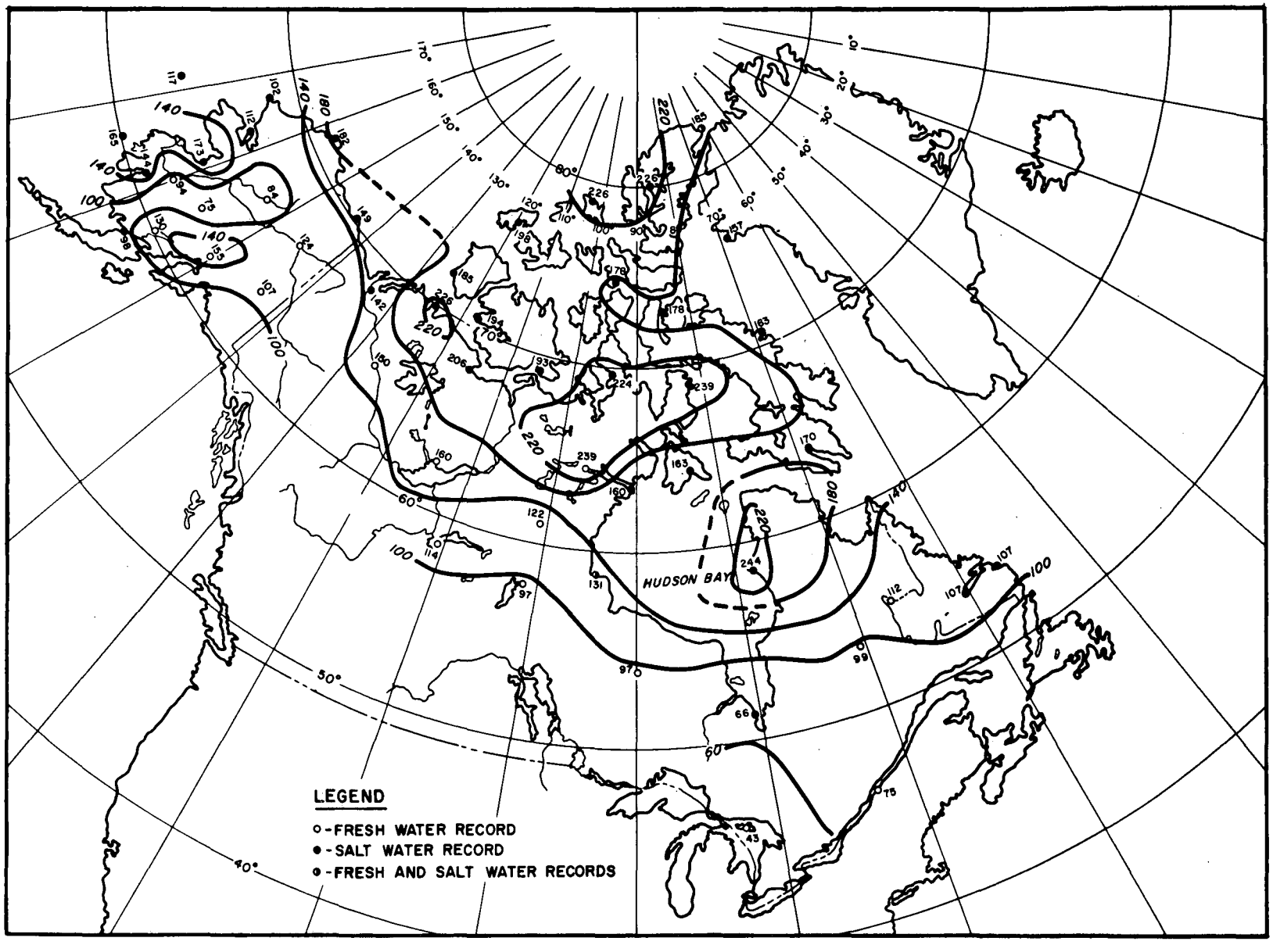


Figure 7. Maximum observed ice thicknesses in cm (1961-62).

Figure 8. Open water in ice on Ruggles River, N. W. T., starting at the junction with Lake Hazen, 13 April 1958.

Figure 9. Typical large area of open water commonly found along the west coast of Greenland up to near Melville Bay, April 1960.

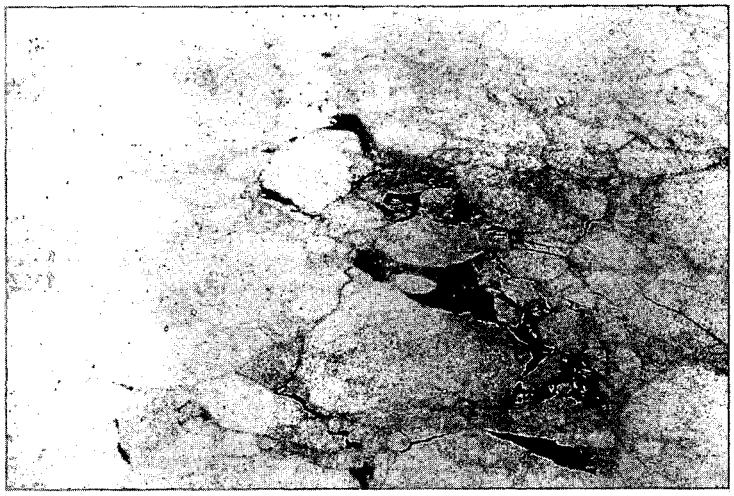


Figure 10. Fracture patterns and indications of recent open water in an otherwise solid cover of ice in northwest Hudson Bay, Canada, 9 April 1962.

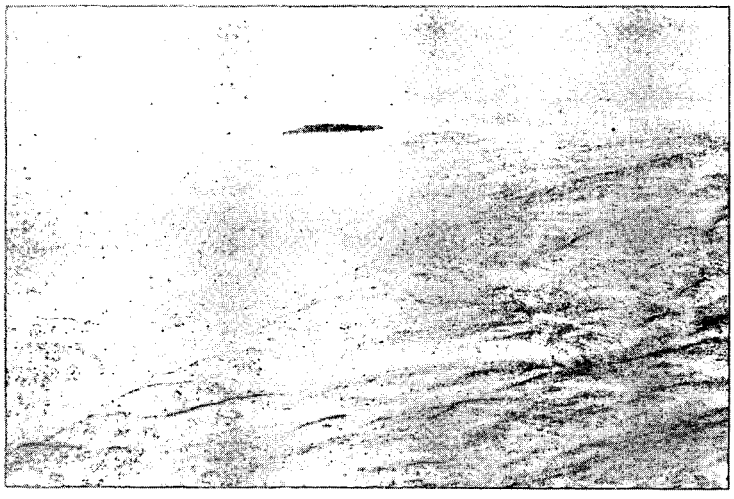


Figure 11. Area of open water offshore from the lowlands of northern Melville Peninsula and the islands in Fury and Hecla Strait, N. W. T., 9 April 1962.

Figure 12. Open water or very thin ice in Arctic pack ice about 200 miles north of Point Barrow, Alaska, 13 June 1962.

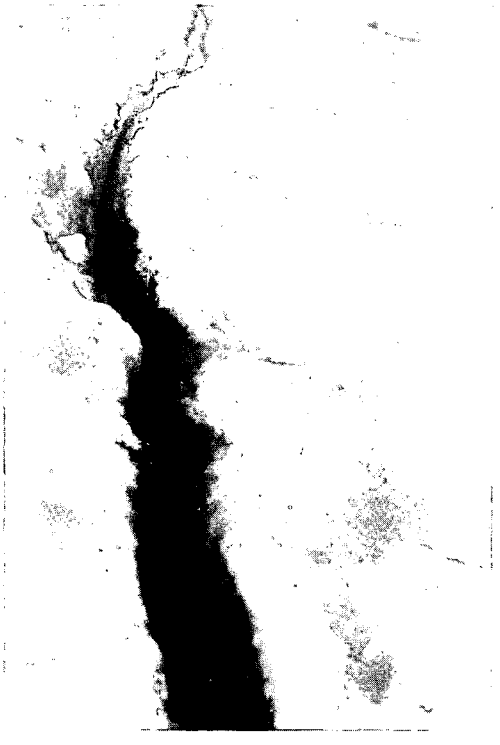


Figure 13. Crack in the sea ice in the vicinity of ice island T-3. Photograph taken from the ice surface on 13 June 1962. A similar but much wider fracture was observed north of Alert, N. W. T. in the Lincoln Sea during a flight in April 1958.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Aklavik:					
1960					
Nov 18	7.	18.	1.	3.	Surface lightly ridged
25	11.	28.	2.	5.	" " "
Alert (Dumbell Bay): Measurements made at about 400 yd off shore in Parr Inlet or Dumbell Bay (Sea Ice Location), see sketch map.					
1960					
Oct 15	15.	38.	6.	15.	First observation taken in interior of Bay.
21	19.	48.	8.	20.	
28	15.	38.	8.	20.	
Nov 4	15.	38.	10.	25.	
11	16.	41.	8.	20.	
19	18.	46.	6.	15.	
26	21.	53.	2.	5.	
Dec 2	24.	61.	2.	5.	
9	28.	71.	6.	15.	
16	34.	86.	6.	15.	
23	31.	79.	10.	25.	
30	33.	84.	6.	15.	Snow density .310
1961					
Jan 6	36.	91.	5.	13.	
13	39.	99.	6.	15.	
21	41.	104.	6.	15.	
29	46.	117.	2.	5.	
Feb 3	46.	117.	6.	15.	
10	48.	122.	6.	15.	
18	50.	127.	6.	15.	
28	51.	130.	6.	15.	
Mar 10	54.	137.	14.	36.	
17	58.	147.	18.	46.	Ice drill lost, observation suspended until new drill received.
Apr 1	No observation taken during this month. Awaiting new ice measurement kit.				
May 3	64.	163.	19.	48.	
12	64.	163.	19.	48.	
20	66.5	169.	14.	36.	
27	66.	168.	18.	46.	
Jun 2	67.	170.	23.	58.	
9	65.	165.	18.	46.	
19	67.5	171.	14.	36.	
26	Ice considered unsafe for further measurement.				
Alert (Dumbell Lake): Measurements made in Dumbell Lake, also called Upper Dumbell Lake. Fresh water location.					
1960					
Oct 15	18.	46.	6.	15.	First observation taken in interior of lake.
21	18.	46.	7.	18.	
28	14.	36.	7.	18.	
Nov 4	18.	46.	8.	20.	
11	14.	36.	8.	20.	
19	17.	43.	7.	18.	
26	24.	61.	6.	15.	
Dec 2	28.	71.	6.	15.	
9	31.	79.	4.	10.	
16	35.	89.	4.	10.	
23	28.	71.	10.	25.	
30	34.	86.	8.	20.	Snow density .200
1961					
Jan 6	37.	94.	6.	15.	
13	40.	102.	4.	10.	
21	46.	117.	2.	5.	
29	47.	119.	1.	3.	
Feb 3	47.	119.	2.	5.	
10	48.	122.	2.	5.	
18	53.	135.	5.	13.	
28	54.	137.	4.	10.	
Mar 10	56.	142.	4.	10.	
17	60.	152.	8.	20.	
31	Auger lost through ice. No observations taken until May.				

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Alert (Dumbell Lake) (cont'd):					
1961					
May 3	71.	180.	14.	36.	
12	70.	178.	14.	36.	
20	70.5	179.	13.	33.	
27	72.	183.	15.	38.	
Jun 2	73.	183.	10.	25.	
9	73.5	187.	12.	30.	
19	69.	175.			Depth of snow missing.
26	Further observations considered unsafe. Lake has 12 in. (30 cm) water on surface of ice and approx. 18 in. (46 cm) of snow.				
Arctic Bay:					
1960					
Oct 28	7.	18.	2.	5.	Surface smooth, no cracks
Nov 4	8.	20.	2.	5.	Snow cover soft, surface smooth
12	10.	25.	1.	3.	Snow hard packed, surface smooth
18	12.	30.	1.	3.	" " " " "
25	14.	36.	4.	10.	Snow cover soft, surface smooth
Dec 2	15.	38.	5.	13.	" " " " " no cracks
9	17.	43.	5.	13.	" " " " " " "
16	19.	48.	6.	15.	" " " " " " "
26	20.	51.	5.	13.	" " " " " " "
1961					
Jan 6	21.	53.	5.	13.	Surface smooth, no cracks
13	22.	56.	5.	13.	" " " "
20	25.	64.	6.	15.	Snow cover soft, surface smooth
27	25.	64.	6.	15.	" " " " "
Feb 3	26.	66.	6.	15.	" " " " " no cracks
10	27.	69.	6.	15.	" " " " " " "
Mar 3	32.	81.	6.	15.	Surface lightly ridged, no cracks
10	34.	86.	6.	15.	" " " " "
31	39.	99.	6.	15.	" " " " "
Apr 11	40.	102.	7.	18.	Surface smooth, no cracks
28	41.	104.	7.	18.	" " " "
May 5	41.	104.	7.	18.	" " " "
13	43.	109.	7.	18.	" " " "
19	43.	109.	7.	18.	" " " "
26	44.	112.	5.	13.	Snow cover hard, surface smooth, no cracks
Jun 2	44.	112.	5.	13.	Surface smooth, no cracks
23	33.	84.			" " " " No snow on ice.
30	27.	69.			" " narrow cracks along shore. No snow on ice.
Baker Lake: Measurements made southwest of station, approx. 150 - 200 yd from shore; see sketch map.					
1960					
Oct 21	2.	5.	Trace		Surface smooth, no cracks
28	8.	20.	Trace		" " " "
Nov 4	15.	38.	Trace		" " few narrow cracks
11	22.	56.	Trace		" " " " "
18	27.	69.	1.	3.	" " few cracks
25	30.	76.	Trace		" " numerous cracks
Dec 2	32.	81.	1.	3.	" " " "
9	41.	104.	Trace		" " " "
16	44.	112.	Trace		" " " "
23	48.	122.	Trace		" " " "
1961					
Jan 6	55.	140.	Trace		" " few cracks
13	59.	150.	Trace		" " " "
20	61.	155.	Trace		" " " "
27	64.	163.	Trace		" " " "
Feb 3	66.	168.	Trace		" " few narrow cracks
10	72.	183.	1.	3.	" " " " "
17	75.	191.	Trace		" " " " "
24	77.	196.	Trace		" " " " "
					Pressure ridge 4 - 6 ft high southeast of measurement site about 2 1/2 miles away.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Baker Lake (cont'd):					
1961					
Mar 3	79.	201.	1.	3.	Surface smooth, few cracks
10	81.	206.	1.	3.	" " " "
17	83.	211.	1.	3.	" " " "
24	85.	216.	Trace		" " " "
31	88.	224.	1.	3.	
Apr 7	90.	229.	1.	3.	" " " "
14	92.	234.	1.	3.	" " " "
21	93.	236.	2.	5.	" " " "
28	93.	236.	1.	3.	" " " "
May 5	93.	236.	1.	3.	" " " "
12	93.	236.	1.	3.	" " " "
19	93.	236.	1.	3.	" " " "
26	93.	236.	Trace		
Jun 2	93.	236.			Surface slightly candled, few cracks
9	90.	229.			" " " numerous cracks
16	79.	201.			" " " " "
23	72.	183.			Surface heavily candled, numerous cracks
30	44.	112.			Surface candled, numerous cracks
Jul 7	Ice free.				

Brochet: Measurements made in Brochet Bay on Reindeer Lake, 135 deg true from station, about 250 - 350 yd off shore; see sketch map.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
1960					
Oct 23	Brochet Bay entirely frozen over.				
Nov 3	5.	13.	1.	3.	Surface smooth
10	13.5	34.	6.	15.	" "
Dec 2	13.	33.	6.	15.	Snow cover crusted, surface smooth, no cracks
9	17.	43.	8.	20.	Surface smooth, no cracks
16	20.	51.	6.	15.	Snow hard packed, surface smooth, no cracks
23	22.	56.			Snow cover 2.5 in. (6 cm) to 10 in. (25 cm). Surface smooth, no cracks
30	24.	61.	6.	15.	" " " " Under surface of ice very uneven. Measurements taken within a close radius shows 6 in. (15 cm) difference in thickness.
1961					
Jan 13	28.	71.	13.	33.	Surface smooth, no cracks
20	33.	84.	16.	41.	" " " "
27	33.5	85.	16.	41.	" " " "
Feb 10	34.	86.	14.	36.	" " " "
24	34.	86.	14.	36.	" " " "
Mar 3	31.	79.	16.	41.	" " " " 2 in. (5 cm) soft snow layer on top, w/ 1/4 in. ice crust below, due to rain. 12 in. (30 cm) snow layer between ice crust and ice sheet.
10	32.	81.	16.	41.	Surface smooth, no cracks
17	41.	104.	14.	36.	" " " "
24	36.	91.	16.	41.	" " " "
31	36.	91.	24.	61.	" " " " It has been noted that ice thickness fluctuates from week to week under reasonably constant temp, possibly explained by flowing currents.
Apr 7	38.	97.	19.	48.	Surface smooth, no cracks
14	43.	109.	26.	66.	" " " "
21	44.	112.	16.	41.	" " " "
28	36.	91.	17.	43.	" " " " Ice covered w/ slush. Measurements apparently taken near a shallow spot.
May 5	41.	104.	10.	25.	Surface smooth, no cracks. Ice covered w/ 9 in. (23 cm) water.
12	36.	91.	4.	10.	" " " "
19	36.	91.			Surface candled, no cracks
26	27.	69.			Ice beginning to open away from shore: 5 to 10 ft of water around shore line. Ice thoroughly candled.
Jun 2	Unsafe to take measurements. Ice began to move. Linklater Bay clear of ice on June 1st.				
4	Ice broken up.				
5	Brochet Bay clear of ice.				

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Cambridge Bay: Measurements made 100 yd southeast of dock on town site side of bay; see sketch map.					
1960					
Oct 16	Bay frozen over.				
17	5 in. (13 cm) of ice within 100 yd southeast side of bay.				
21	7.	18.	2.	5.	Surface lightly ridged, few cracks
29	11.	28.	3.	8.	" " " " "
					Tidal cracks off shore w/ largest one nearest shore.
Nov 6	17.	43.	2.	5.	Surface lightly ridged, few cracks
10	23.	58.	2.	5.	" " " " "
					Snow cover varies from 1 in. (2 cm) to 10 in. (25 cm) drifts near shore. Snow completely covers ice, no bare spots visible.
17	26.	66.	2.	5.	Surface lightly ridged, few cracks
24	32.	81.	2.	5.	" " " " "
					Several large cracks across bay. Largest one has an opening at surface 3 to 4 in. (8 to 10 cm) in width and penetrates into the ice.
Dec 2	35.	89.	4.	10.	Surface lightly ridged, few cracks
8	37.	94.	4.	10.	" " " " "
15	38.	97.	5.	13.	" " " " "
21	38.	97.	5.	13.	" " " " "
1961					
Jan 5	43.	109.	4.	10.	" " " " "
12	46.	117.	4.	10.	" " " " "
19	46.	117.	4.	10.	" " " " "
					Small tidal cracks near shore.
26	52.	132.	4.	10.	Surface lightly ridged, few cracks
Feb 3	57.	145.	4.	10.	" " " " "
9	60.	152.	5.	13.	" " " " "
17	61.	155.	5.	13.	" " " " "
23	65.	165.	5.	13.	" " " " "
Mar 2	68.	173.			" " " " "
10	72.	183.	5.	13.	" " " " "
17	74.	188.	5.	13.	" " " numerous cracks
					Numerous small cracks near shore. Few large cracks east of dock, estimated width 8 in. (20 cm).
23	78.	198.	5.	13.	Surface lightly ridged, numerous cracks
30	78.	198.	5.	13.	" " " " "
					Numerous small cracks near shore. Few large cracks east of dock, estimated width 8 in. (20 cm).
Apr 7	84.	213.	5.	13.	Surface lightly ridged, numerous cracks
14	87.	221.	5.	13.	" " " " "
					No noticeable change in cracks along shore or around dock.
21	87.	221.	4.	10.	Surface lightly ridged, numerous cracks
28	87.	221.	5.	13.	" " "
					Numerous cracks in ice, covered w/ 5 to 10 in. of snow.
May 5	88.	224.	5.	13.	Surface lightly ridged, numerous cracks
12	89.	226.	5.	13.	" " "
					Numerous cracks in ice, covered w/ 5 to 10 in. (13 to 25 cm) of snow.
19	89.	226.	4.	10.	Surface lightly ridged, numerous cracks
26	91.	231.	5.	13.	" " " " "
					Numerous cracks, ice becoming saturated. Cracks still covered w/ snow 4 to 6 in. (10 to 15 cm) in depth.
Jun 2	87.	221.	1.	3.	Surface lightly ridged, numerous cracks
9	87.	221.	1.	3.	" " "
					Cracks wider, snow and ice saturated w/ water.
16	86.	218.	Trace		Surface moderately ridged, numerous cracks.
23	82.	208.	Trace		" " "
					Cracks much wider, 10 to 18 in. (25 to 46 cm) in places, ice starting to rot. Water on ice increasing rapidly, 4 to 8 in. (10 to 20 cm) along shore.
29	78.	198.			Surface moderately ridged, numerous cracks Ice thickness estimated, as ice considered unsafe. Water along shore.
Jul 7	25.	64.			Surface smooth, few cracks Ice thickness estimated as ice considered unsafe. Open water along shore.
14	Bay clear of ice, but occasional floes of drift ice still can be seen farther out.				
20	Lead 50 yd wide from village side of bay to opposite shore.				

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Cape Atholl, Site 1:	Measurement sites 1, 2, 3 and 4 (at Cape Atholl) all located in Quaratit Bay; see sketch map for exact location.				
1960					
Oct 1	No ice formation has occurred.				
26	Slush ice, 3 in. (8 cm) thick covering 50% of Quaratit Bay.				
Nov 1	Slush ice returned.				
6	Ice became solid.				
10	Ice broke into lily pads, about 6 in. (15 cm) thick.				
11	Ice refroze.				
14	Ice frozen solid to the horizon. Loran operations indicate Baffin Bay not completely covered.				
Dec 1	8.	20.			Some leads evident about 3 miles from shore.
9	Loran operations indicate center of Baffin Bay freezing solid.				
13	Warm surface air apparently caused ice to open up again and it has not refrozen.				
15	21.8	55.	2.8	7.	Last 4 in. (10 cm) of ice were soft but not slushy. Snow depth given in table is amount directly over the ice measurement. Avg depth of snow in area 2.8 in. (7 cm).
22	24.2	61.	2.2	5.	Last 6 in. (15 cm) of ice were soft but not slushy. Avg depth of snow in area 2.0 in. (6 cm).
29	27.5	70.	1.5	4.	Avg depth of snow in area 2.0 in. (6 cm)
1961					
Jan 5	30.5	77.	2.5	6.	" " " " " " " " (5 cm)
16	34.5	88.	2.	5.	" " " " " " 1.5 in. (4 cm)
23	38.	97.	2.	5.	" " " " " " " " "
Feb 1	41.5	105.	1.5	4.	" " " " " " 2.0 in. (5 cm)
7	43.2	109.	1.5	4.	" " " " " " " " " "
15	46.5	118.	1.	3.	" " " " " " " " " "
23	50.	127.	1.	3.	" " " " " " " " " "
Mar 3	53.5	136.	1.	3.	" " " " " " " " " "
10	56.	142.	1.5	4.	" " " " " " " " " "
17	59.5	151.	1.	3.	" " " " " " " " " "
25	62.5	159.	1.	3.	" " " " " " " " " "
Apr 1	63.8	163.	4.5	11.	" " " " " " 3.0 in. (8 cm)
					Fresh fallen snow during past 5 days.
8	66.2	168.	3.2	8.	Avg depth of snow in area 2.0 in. (5 cm)
15	68.2	173.	3.8	10.	" " " " " " " " " "
22	69.8	178.	3.5	9.	" " " " " " " " " "
					Snow began to melt; had pockmarked appearance.
29	70.5	179.	2.8	8.	Avg depth of snow in area 1.5 in. (4 cm)
					Entire snow cover pitted by melting.
May 6	71.2	180.	6.	15.	Avg depth of snow in area 5.0 in. (13 cm)
13	71.	180.	8.	20.	" " " " " " 7.0 in. (18 cm)
20	70.8	180.	4.5	11.	" " " " " " 3.0 in. (8 cm)
27	70.5	179.	11.	28.	" " " " " " 9.0 in. (23 cm)
31	Large leads running the length of the horizon becoming larger. Expect ice to break up in near future. No further ice observations will be taken.				
Cape Atholl, Site 2:					
1960					
Dec 15	19.	48.	2.8	7.	Avg depth of snow in area 2.8 in. (7 cm)
22	23.5	60.	1.5	4.	" " " " " " 2.0 in. (5 cm)
29	26.2	66.	1.5	4.	" " " " " " " " " "
1961					
Jan 5	28.5	72.	2.2	5.	" " " " " " 2.5 in. (6 cm)
16	33.5	85.	1.	3.	" " " " " " 2.0 in. (5 cm)
23	36.2	92.	1.2	3.	" " " " " " " " " "
Feb 1	37.8	96.	1.8	5.	" " " " " " " " " "
7	39.8	101.	1.8	5.	" " " " " " " " " "
15	42.5	106.	1.2	3.	" " " " " " " " " "
23	46.2	117.	1.2	3.	" " " " " " " " " "
Mar 3	48.5	123.	1.2	3.	" " " " " " " " " "
10	50.8	129.	1.8	4.	" " " " " " " " " "
17	54.	137.	1.2	3.	" " " " " " " " " "
25	57.5	146.	1.2	3.	" " " " " " " " " "
Apr 1	59.2	150.	2.5	6.	" " " " " " 3.0 in. (8 cm)
8	61.5	156.	1.5	4.	" " " " " " 2.0 in. (5 cm)
15	63.	160.	1.5	4.	" " " " " " " " " "
22	63.8	162.	1.5	4.	" " " " " " " " " "
29	64.5	164.	1.	3.	" " " " " " 1.5 in. (4 cm)

ICE THICKNESSES. (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Cape Atholl, Site 2 (cont'd):					
1961					
May 6	64.5	164.	6.5	17.	Avg depth of snow in area 5.0 in. (13 cm)
13	64.5	164.	6.	15.	" " " " " " 7.0 in. (18 cm)
20	64.	163.	3.	8.	" " " " " " 3.0 in. (8 cm)
27	63.5	161.	10.5	27.	" " " " " " 9.0 in. (23 cm)
Cape Atholl, Site 3:					
1960					
Dec 22	17.8	45.	1.8	5.	" " " " " " 2.0 in. (5 cm) Large crack 20 ft past hole 3, running parallel to shore about 3 ft wide.
29	21.2	53.	2.2	5.	Avg depth of snow in area 2.0 in. (5 cm)
1961					
Jan 5	23.	58.	3.5	9.	" " " " " " 2.5 in. (6 cm)
16	28.	71.	2.2	5.	" " " " " " 2.0 in. (5 cm)
23	30.2	76.	2.2	5.	" " " " " " 2.0 in. (5 cm)
Feb 1	32.5	83.	3.2	8.	" " " " " " " " " "
7	33.8	86.	3.	8.	" " " " " " " " " "
15	36.	91.	3.2	8.	" " " " " " " " " "
23	39.	99.	3.	8.	" " " " " " " " " "
Mar 3	42.2	107.	3.5	9.	" " " " " " " " " "
10	44.5	113.	3.2	8.	" " " " " " " " " "
17	48.2	122.	3.	8.	" " " " " " " " " "
25	51.	130.	3.	8.	" " " " " " " " " "
Apr 1	52.5	133.	2.2	5.	" " " " " " 3.0 in. (8 cm)
8	54.5	138.	1.8	5.	" " " " " " 2.0 in. (5 cm)
15	55.8	142.	1.5	4.	" " " " " " " " " "
22	56.8	145.	1.2	3.	" " " " " " " " " "
29	57.	145.	1.2	3.	" " " " " " 1.5 in. (4 cm)
May 6	57.2	145.	3.	8.	" " " " " " 5.0 in. (13 cm)
13	57.	145.	4.5	11.	" " " " " " 7.0 in. (18 cm)
20	56.5	144.	2.	5.	" " " " " " 3.0 in. (8 cm)
27	56.	142.	8.	20.	" " " " " " 9.0 in. (23 cm)
Cape Atholl, Site 4:					
1960					
Dec 15	23.	58.	2.5	6.	" " " " " " 2.8 in. (7 cm)
22	29.2	74.	2.5	6.	" " " " " " 2.0 in. (5 cm)
29	32.	81.	.5	1.	" " " " " " 2.0 in. (5 cm)
1961					
Jan 5	33.5	85.	.8	2.	" " " " " " 2.5 in. (6 cm)
16	39.	99.	.5	1.	" " " " " " 2.0 in. (5 cm)
23	41.2	104.	.8	2.	" " " " " " " " " "
Feb 1	44.2	112.	1.	3.	" " " " " " " " " "
7	48.5	123.	.5	1.	" " " " " " " " " "
15	51.2	130.	.5	1.	" " " " " " " " " "
23	55.	140.	.5	1.	" " " " " " " " " "
Mar 3	57.5	146.	.5	1.	" " " " " " " " " "
10	59.	150.	.5	1.	" " " " " " " " " "
17	62.	157.	.5	1.	" " " " " " " " " "
25	64.5	164.	.5	1.	" " " " " " " " " " The ice at hole 4 has begun to "raft" and at times is depressed or raised up to 2 ft above normal.
Apr 1	66.	168.	1.8	5.	Avg depth of snow in area 3.0 in. (8 cm)
8	68.	173.	.5	1.	" " " " " " 2.0 in. (5 cm)
15	69.2	175.	.5	1.	" " " " " " " " " " Ice at hole 4 continues to "raft", tidal cracks now 10 ft beyond this hole.
22	70.2	178.	.5	1.	Avg depth of snow in area 2.0 in. (5 cm)
29	70.8	180.	.5	1.	" " " " " " 1.5 in. (4 cm)
May 6	71.5	182.	1.	3.	" " " " " " 5.0 in. (13 cm)
13	71.8	183.	3.	8.	" " " " " " 7.0 in. (18 cm)
20	71.5	182.	.5	1.	" " " " " " 3.0 in. (8 cm)
27	71.8	183.	7.	18.	" " " " " " 9.0 in. (23 cm)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Cape Parry: Measurements made on Amundsen Gulf, 1 mile due west of the Department of Transport surface weather observing station. Approx. 500 ft from shore; see sketch map.					
1960					
Oct 20	Amundsen Gulf began freezing.				
Nov 7	12.	30.	1.	3.	Surface smooth, few narrow cracks
					No observations made prior this date (no auger).
11	13.	33.	1.	3.	Surface smooth, few narrow cracks
18	19.	48.	1.	3.	" " " " "
25	22.	56.	1.	3.	" " " " "
					Few open patches observed.
Dec 2	26.	66.	2.	5.	Surface smooth, few cracks
9	31.	79.	2.	5.	" " " "
					Open water distant north quadrangle.
16	33.	84.	3.	8.	Surface smooth, few cracks
24	35.	89.	3.	8.	" " " "
30	35.	89.	3.	8.	" " " "
1961					
Jan 6	36.	91.	4.	10.	" " " "
12	38.	97.	4.	10.	" " " "
19	39.	99.	4.	10.	" " " "
26	47.	119.	5.	13.	" " no cracks
Feb 2	50.	127.	5.	13.	" " " "
9	52.	132.	5.	13.	" " " "
16	55.	140.	5.	13.	" " few cracks
23	58.	147.	6.	15.	" " " "
Mar 2	60.	152.	6.	15.	" " " "
9	63.	160.	6.	15.	" " " "
17	65.	165.	6.	15.	" " " "
23	67.	170.	5.	13.	" " " "
30	70.	178.	5.	13.	" " " "
31	Entrance in strong current area gradually opening. Snow hard packed throughout month.				
Apr 6	71.	180.	5.	13.	Surface moderately ridged, few cracks
13	73.	185.	5.	13.	" " " " "
20	73.	185.	6.	15.	" " " " "
27	71.	180.	6.	15.	" " " " "
					Snow hard packed throughout month.
May 4	71.	180.	6.	15.	Surface heavily ridged, few cracks
					Snow hard packed
11	70.	178.	6.	15.	Surface heavily ridged, " "
13	Open water reported all quads, distant. Open water on surface 4 miles north.				
18	70.	178.	5.	13.	Surface heavily ridged, few cracks
25	69.	175.	5.	13.	" " " " "
					Lead running east, west approx. 1 mile wide, 6 miles north of observation point.
31	Unable to continue surface observation as 8 to 10 in. (20 to 25 cm) run-off water has formed at the ocean edge.				
Cartwright: Measurements made 300 - 350 yd south of radio station on harbour.					
1960					
Dec 2	Surface unfrozen.				
9	Surface frozen, but thickness unknown. Surface smooth, no cracks.				
16	3.	8.	6.	15.	Surface smooth, no cracks
23	5.	13.	6.	15.	Surface smooth, no cracks
30	7.	18.	5.	13.	" " " "
					This area probably has the thinnest ice in the harbor as this spot usually is last to freeze.
1961					
Jan 6	8.	20.	8.	20.	Surface smooth, no cracks
13	10.	25.	9.	23.	" " " "
20	14.	36.	8.	20.	" " " "
27	19.	48.	6.	15.	" " " "
Feb 3	21.	53.	7.	18.	" " " "
10	23.	58.	5.	13.	" " " "
17	24.	61.	6.	15.	" " " "
24	25.	64.	5.	13.	" " " "
Mar 3	27.	69.	7.	18.	" " " "
10	28.	71.	7.	18.	" " " "
17	31.	79.	8.	20.	" " " "
24	34.	86.	10.	25.	" " " "
31	35.	89.	5.	13.	" " " "

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Cartwright (cont'd):					
1961					
Mar 31					Cartwright entrance gradually opening in strong current area.
Apr 7	33.	84.	1.	3.	Surface lightly ridged, no cracks
14	34.	86.	1.	3.	" " " " "
21	37.	94.	1.	3.	" " " " "
28	34.	86.			Surface smooth, no cracks
May 5	32.	81.			" " " "
12	26.	66.			Surface slushy, several cracks
19	Ice unsafe to go on for measuring, surface soft.				
20	Ice moved out of harbor night of 19th.				
Chariot Site:					
1960					
Nov 26	Thin ice.				
28	Pressure ridges in ice.				
30	Sea open				
Dec 1	Slush on water 2 in. (5 cm) thick.				
10	Slush ice forming				
11	Sea frozen to horizon				
20	100 ft lead opened 60 ft offshore.				
21	Sea open Cape Thompson to Kivalina.				
25	Sea open, steaming.				
30	Sea frozen to horizon.				
1961					
Jan 6	Sea 1/2 covered w/ ice.				
10	Sea frozen since 7th.				
19	Sea calm, glassy since 15th.				
24	Sea frozen since 20th.				
25	Sea ice moving south.				
26	Sea frozen.				
Feb 1	Sea ice blown out past horizon.				
6	Sea frozen.				
Mar 31	Sea frozen since 26th. Some leads 3 miles southeast.				
Apr 30	Sea frozen with occasional leads.				
May 13	Small lead 1 mile offshore parallel to coast.				
14	Many small leads.				
16	Lead 10 miles wide, 2 miles offshore ice at Kivalina.				
18	Open water visible to south.				
25	Ice moved back in during day				
28	Numerous small leads. No open water visible.				
Jun 4	Ice started moving out.				
6	Shore ice out 1 mile.				
7	Large floes near shore.				
10	Sea open to 2 miles offshore since 8th.				
11	Sea open 5 miles out.				
12	Sea clear.				
15	Few floes visible.				
16	Sea ice moved back in.				
20	Ice moved 5 miles out w/ northwest winds.				
26	Ice within 1/2 mile of shore since 22nd.				
27	Ice back in.				
28	Ice out.				
30	Ice piling on beach.				
Jul 1	Ice along shore.				
3	Open water.				
Chesterfield Inlet:	Measurements made 500 yd and about 090° from operations building.				
1960					
Nov 4	4.	10.			
11	8.	20.			
18	14.	36.	1.	3.	
25	20.	51.	2.	5.	
Dec 2	23.	58.	2.	5.	No cracks
9	25.	64.	2.	5.	" "
16	29.	74.	3.	8.	" "
23	31.	79.	3.	8.	" "

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Chesterfield Inlet (cont'd):					
1960					
Dec 30	33.	84.	3.	8.	No cracks, many snow drifts, some 1 ft thick.
1961					
Jan 6	36.	91.	3.	8.	" "
13	40.	102.	4.	10.	" " Snow drifts hard packed.
20	44.	112.	4.	10.	No cracks Snow drifts hard packed.
26	46.	117.	4.	10.	No cracks Snow drifts hard packed.
Feb 3	49.	124.	5.	13.	Few cracks
10	53.	135.	6.	15.	" "
17	55.	140.	6.	15.	" "
24	57.	145.	6.	15.	" "
Mar 3	58.	147.	6.	15.	" "
10	63.	160.	6.	15.	" "
17	64.	163.	6.	15.	" "
24	67.	170.	6.	15.	" "
31	69.	175.	6.	15.	" " Many large snow drifts across runway area.
Apr 7	71.	180.	6.	15.	Few cracks
14	73.	185.	10.	25.	" " Many large soft snow drifts.
21	73.	185.	12.	30.	Few cracks
28	73.	185.	14.	36.	" " Many large soft snow drifts.
May 5	74.	188.	12.	30.	Surface smooth, few cracks
12	74.	188.	10.	25.	" " " "
19	74.	188.	10.	25.	" " " "
26	73.	185.	8.	20.	" " " " Brisk northwest winds have broken up the ice offshore and open water lies approx. 1 mile offshore and extends as far as visible.
Jun 2	69.	175.	4.	10.	Small drifts on surface, few cracks
9	57.	145.	3.	8.	Water and slush on surface, few cracks
16	54.	137.			Water covered surface, numerous cracks
23	52.	132.			" " " " "
30	49.	124.			" " " " " Last measurement this season. Ice unsafe. Ice extends approx. 1/4 mile offshore.
Churchill, Site 1: Measurement site number 1, off Farnworth Lake jetty, water depth 54 in.; see sketch map.					
1960					
Oct 17	Slush ice 10 ft. from shore.				
19	95% of lake covered w/ ice, 2 in. (5 cm) at site.				
20	100% ice cover, 4 in. at site.				
24	7.	18.			
27	3 in. (8 cm) snow cover at site.				
31	8.	20.	6.	15.	
Nov 7	8.	20.	8.	20.	
16	11.	28.	12.	30.	
21	11.	28.	10.5	27.	
28	11.	28.	10.5	27.	
Dec 5	12.	30.	11.5	29.	
12	15.	38.	12.5	32.	
20	15.	38.	13.	33.	
27	17.	43.	14.	36.	
1961					
Jan 3	18.	44.	14.	36.	
9	19.	48.	18.	44.	
17	21.	53.	23.	58.	
23	21.	53.	23.	58.	
30	23.	58.	23.	58.	
Feb 7	24.	61.	23.	58.	
14	25.	64.	24.	61.	
20	26.	66.	26.	66.	
27	27.	69.	27.	69.	

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Churchill, Site 1 (cont'd):					
1961					
Mar 6	28.	71.	26.	66.	
13	29.	74.	26.	66.	
20	30.	76.	27.	69.	
Apr 3	32.	81.			
10	32.	81.	36.	91.	
17	32.	81.	34.	86.	
24	32.	81.	50.	127.	
Churchill, Site 2: Measurement center of Farnworth Lake, approx. 1/2 mile from jetty, water depth 78 in.; see sketch map.					
1960					
Nov 16	18.	46.			Ice thickness probe installed.
21	21.	53.	1.	3.	
28	24.	61.	1.	3.	
Dec 5	27.	69.	1.5	4.	
12	30.	76.	2.5	6.	
20	32.	81.	2.	5.	
27	35.	89.			
1961					
Jan 3	38.	97.	2.	5.	
9	40.	102.	1.5	4.	
17	43.	109.	6.	15.	
23	44.	112.	6.	15.	
30	47.	119.	6.	15.	
Feb 27	52.	132.	9.5	24.	
Mar 6	53.	135.	10.	25.	
13	55.	140.	10.	25.	
20	55.	140.	10.	25.	
Apr 3	57.	145.			
10	57.	145.	17.	43.	
17	58.	147.	19.	48.	
24	58.	147.	14.	36.	
Churchill, Site 3: Measurements made in Churchill River off Dracham Pt., water depth 80 in.; see sketch map.					
1960					
Nov 10	13.	33.	1.	3.	River surface quite rough.
Dec 9	27.	69.	Trace		
1961					
Jan 6	39.	99.	1.	3.	
Feb 1	48.	122.	10.	25.	
Mar 10	48.	122.	12.	30.	
Apr 6	49.	124.	19.	48.	
Churchill, Site 4: Measurements made mouth of Churchill River, water depth (tidal) 30 ft; see sketch map.					
1961					
Jan 11	37.	94.			
18	38.5	98.			
25	40.	102.			
Feb 1	49.5	126.	Trace		
13	53.	135.	Trace		
27	60.	152.	Trace		
Mar 6	60.	152.	1.	3.	
13	60.	152.	1.	3.	
20	65.	165.	3.	8.	
27	65.	165.	4.	10.	
Apr 17	67.	170.	16.	41.	
24	73.	185.	7.	18.	
Churchill, Site 5: Measurements made in Button Bay, water depth (tidal) 30 ft; see sketch map.					
1961					
Jan 16	33.	84.	8.	20.	
25	38.	97.	12.	30.	

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Churchill, Site 5 (cont'd):					
1961					
Feb 1	41.	104.	12.	30.	
13	42.5	108.	14.	36.	
20	43.	109.	16.	41.	
27	45.	114.	16.	41.	
Mar 6	48.	122.	17.	43.	
13	51.	130.	20.	51.	
20	49.	124.	24.	61.	
Apr 17	56.	142.	27.	69.	
24	51.	130.	33.	84.	
Clyde River: Measurements made 150 yd from shore on Patricia Bay, 250 yd west of living quarters; see sketch map.					
1960					
Nov 11	6.	15.			Surface smooth
18	11.	28.	1.	3.	" "
25	15.	38.	2.	5.	" "
Dec 2	15.	38.	2.	5.	" " no cracks
9	19.	48.	3.	8.	" " " "
16	18.	46.	4.	10.	" " " "
23	21.	53.	7.	18.	" " " "
1961					
Jan 6	25.	64.	7.	18.	" " " "
13	29.	74.	6.	15.	" " " "
20	31.	79.	10.	25.	" " " "
27	33.	84.	13.	33.	" " " "
Feb 3	35.	89.	12.	30.	" " " "
10	37.	94.	14.	36.	" " " "
17	40.	102.	14.	36.	" " " "
24	40	102.	14.	36.	" " " "
Mar 3	42.	107.	15.	38.	" "
10	46.	117.	14.	36.	" " " "
17	46.	117.	15.	38.	" " " "
24	46.	117.	14.	36.	" " " "
31	48.	122.	14.	36.	" " " "
Apr 7	49.	124.	14.	36.	" " " "
14	55.	140.	12.	30.	" " " "
21	56.	142.	13.	33.	" " " "
28	54.	137.	13.	33.	" " " "
May 5	55.	140.	12.	30.	" " " "
12	58.	147.	15.	38.	" " " "
19	55.	140.	16.	41.	" " " "
26	56.	142.	20.	51.	" " " "
Jun 2	57.	145.	22.	56.	" " " "
9	54.	137.	22.	56.	" " " "
14	Melt water from surrounding land covers surface of bay to a depth of 10 in.				
16	54.	137.	10.	25.	Snow slushy, surface smooth, no cracks
20	Melt water all drained away.				
23	55.	140.	1.	3.	" " " " " "
30	44.	112.			Surface smooth, few cracks
Jul 7	28.	71.			" " " "
10	Small area in northeast corner of bay broken up.				
14	Section measuring 1 mile by 1/2 mile broken up, including measuring site.				
21	1/3 of bay broken up at north end. Gradual.				
22	Whole bay now broken up.				
Coppermine: Measurements made in Coppermine River approx. 150 ft from department of transport dock.					
1960					
Nov 4	10.	25.	Trace		Surface smooth
11	12.	30.	1.	3.	" "
18	18.	46.	1.	3.	" "
25	26.	66.	1.	3.	" "
Dec 2	28.	71.	1.	3.	" " no cracks
9	32.	81.	3.	8.	" " " "
16	36.	91.	3.	8.	" " " "
30	41.	104.	Trace		" " " "
1961					
Jan 8	45.	114.	1.	3.	" " " "

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Coppermine (cont'd):					
1961					
Jan 13	48.	122.	1.	3.	Surface smooth, no cracks
20	50.	127.	Trace		" " " "
27	52.	132.	Trace		" " " "
Feb 3	54.	137.	1.	3.	" "
10	57.	145.	3.	8.	" "
17	59.	150.	3.	8.	" "
24	60.	152.	3.	8.	
Mar 3	60.	152.	3.	8.	" "
10	61.	155.	3.	8.	" "
17	62.	157.	3.	8.	" "
24	64.	163.	3.	8.	" "
31	64.	163.	3.	8.	" "
Apr 2	70.	178.	3.	8.	" " no cracks
9	74.	188.	3.	8.	" " " "
16	76.	193.	2.	5.	" " " "
23	78.	198.	2.	5.	" " " "
30	79.	201.	2.	5.	" " " "
Jun 2	75.	191.	1.	3.	" " " "
9	70.	178.			" " numerous deep cracks
					Last measurement for the season.
Coral Harbour: Measurements made 1/2 mile from Eskimo settlement southward into South Bay; see sketch map.					
1960					
Oct 2	Fast ice along shore, inland lakes frozen.				
28	4.	10.	4.	10.	
Nov 4	6.	15.	4.	10.	Surface smooth
11	12.	30.	5.	13.	" "
17	16.	41.	4.	10.	" "
25	20.	51.	5.	13.	" " few cracks
Dec 2	22.	56.	4.	10.	" " no cracks
9	23.	58.	5.	13.	" " " "
16	28.	71.	3.	8.	" " " "
23	28.	71.	4.	10.	" " " "
					Scattered patches of rough ice.
30	30.	76.	4.	10.	Surface smooth, few small cracks
					Scattered patches of rough ice.
1961					
Jan 6	33.	84.	4.	10.	Surface smooth, no cracks
13	35.	89.	4.	10.	Surface lightly ridged, few cracks
20	39.	99.	6.	15.	Surface heavily ridged, numerous cracks
27	42.	107.	6.	15.	" " " " "
Feb 3	44.	112.	6.	15.	" " " " "
10	47.	119.	9.	23.	" " " " "
17	49.	124.	8.	20.	" " " " "
24	52.	132.	8.	20.	" " " " "
Mar 3	54.	137.	8.	20.	" " " " "
10	56.	142.	9.	23.	" " " " "
17	57.	145.	10.	25.	" " " " "
18	59.	150.	10.	25.	" " " " "
31	62.	157.	12.	30.	" " " " "
Apr 7	65.	165.	11.	28.	" " " " "
14	66.	168.	12.	30.	" " " " "
21	63.	160.	12.	30.	" " " " "
28	66.	168.	11.	28.	" " " " "
May 5	67.	170.	11.	28.	" " " " "
12	67.	170.	9.	23.	" " " " "
19	67.	170.	11.	28.	" " " few cracks
26	68.	173.	13.	33.	" " " " "
					Patches of open water sighted w/ binoculars approx. 15 - 20 miles from shore.
Jun 10	The first 6 in. (15 cm) layer of slush above ice. Inland rivers began to break-up.				
16	68.	173.			Surface slushy, few cracks
23	56.	142.			" " " "
					Unable to measure at marker, as marker had disappeared.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Coral Harbour (cont'd):					
1961					
Jun 23					There are two layers of ice. The first approx. 2 ft deep and the ice is very easy to drill through.
30	Ice measurement approx. 18 to 30 in. Surface slushy. Ice has melted from 10 to 30 ft from shore. Numerous large cracks have developed. Last measurement, ice is breaking up.				
Jul 10	Open water extends approx. 1/2 mile from shore. Open water commences approx. 5 miles out.				
Ennadai Lake: Measurements made on Ennadai Lake between 245 and 270 deg true from station 100 yd from shore. Station is located 100 yd from lake.					
1960					
Oct 18	Shore ice began.				
19	Lake completely frozen over.				
21	3.	8.	1.	3.	Surface lightly ridged, numerous slight cracks
28	11.	28.	3.	8.	" " " no cracks
					Snow cover varies from 2 to 12 in. (5 to 30 cm) in drifts.
Nov 4	14.	36.	3.	8.	Surface lightly ridged.
11	22.	56.	2.	5.	" " "
18	25.	64.	2.	5.	" " "
25	30.	76.	2.	5.	" " "
Dec 2	33.	84.	3.	8.	" " " no cracks
9	37.	94.	5.	13.	" " " " "
16	38.	97.	4.	10.	" " " " "
24	38.	97.	5.	13.	" " " few cracks
30	42.	107.	4.	10.	" " " " "
					No leads visible. Snow varies from few bare spots to 20 in. (51 cm).
1961					
Jan 6	43.	109.	4.	10.	Surface lightly ridged, few cracks
13	49.	124.	6.	15.	" " " " "
20	50.	127.	6.	15.	" " "
27	50.	127.			Surface moderately ridged, few cracks
Feb 3	53.	135.			" " " " "
10	61.	155.	7.	18.	" " " " "
17	62.	157.	7.	18.	" " " " "
Mar 3	53.	135.	9.	23.	" " " " "
10	52.	132.	9.	23.	Surface lightly ridged, few cracks
17	59.	150.	10.	25.	" " " numerous cracks
24	61.	155.	10.	25.	" " " " "
31	62.	157.	14.	36.	" moderately ridged, numerous cracks
Apr 7	63.	160.	15.	38.	" " " " "
14	64.	163.	21.	53.	" heavily ridged
21	65.	165.	18.	46.	" " "
28	66.	168.	16.	41.	" " "
May 5	65.	165.	13.	33.	Surface moderately ridged
12	66.	168.	14.	36.	" lightly ridged
19	67.	170.	11.	28.	" smooth
26	63.	160.	7.	18.	" " numerous cracks
					Approx. 5 in. of water under the snow.
30	Ice began candling.				
Jun 1	A 2 ft lead running east to west, 250 yd from operation building extends from the point of an esker completely across the lake. Ponds and inlets free of ice.				
2	67.	170.	1.	3.	Few open holes observed. Surface temp reading 32.3F bottom of lake 33.4F. Depth of lake estimated 9 ft indicating approx. 2 ft water exists under the ice sheet. Surface smooth, numerous cracks.
9	49.	124.			Surface smooth, numerous cracks
16	Surface candled, numerous cracks. Shore water approx. 40 ft in width around lake. Ice unsafe. Estimate 3 ft ice at marker near runway.				
23	Surface candled, numerous cracks.				
24	Ice break-up started.				
30	Surface candled, numerous cracks				
Jul 1	Lake completely clear of ice.				

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Eureka: Measurements made on Slidre Fiord.					
1960					
Aug 30					1/10 ice coverage consisting of floes 5 to 10 ft across.
Sep 13					No ice visible
20					7/10 slush on fiord. Numerous leads and open pools. Leads slightly whiter than sea. Surface smooth except where broken by scattered floes of old ice. 3 bergs, 6 growlers in vicinity.
24					9/10 coverage; appears to be 5/10 crust and 4/10 slush. Small cracks appearing along shore. Long leads near shore extend toward center of fiord and are of slightly whiter color than sea. Surface smooth, 2 bergs, 1 growler.
25					10/10 coverage. Small cracks along shore. Color almost white. Surface smooth. 3 bergs, 3 growlers.
27					10/10 coverage, shore fast. Small tidal cracks along shore. Ice covered with light snow. Surface smooth. 3 bergs, 3 growlers.
29					Snow cover 2 in. 10/10 coverage sea ice, shore fast. Small tidal cracks along shore. Surface smooth. 3 bergs, 3 growlers.
Oct 4	8.	20.	.5	1.	Surface smooth
8	12.	30.	1.	3.	" " tidal cracks along shore
14	15.	38.	2.	5.	" " " crack 4 in. wide along shore line
21	18.	46.	3.	8.	Ice and snow surface smooth. Snow well packed. Tidal crack 1 ft across from shore. No other cracks noted.
28	23.	58.	3.	8.	4 in. tidal crack extending along shore line. Snow well packed, surface smooth.
Nov 4	23.	58.	3.	8.	Snow cover packed, 1/4 in. tidal crack extending along shore line.
11	26.	66.	4.	10.	Snow cover packed " " " " " " " line.
18	29.	74.	4.	10.	Snow cover packed
25	31.	79.	4.	10.	" " "
Dec 2	36.	91.	4.	10.	" " "
9	40.	102.	4.	10.	Surface moderately ridged, no cracks visible
16	42.	107.	5.	13.	" lightly ridged, no cracks visible
23	43.	109.	6.	15.	" " " Snow density .305
30	47.	119.	6.	15.	Surface lightly ridged, few narrow cracks Snow density .336
1961					
Jan 6	50.	127.	6.	15.	Surface lightly ridged, few narrow cracks Snow density .304
13	53.	135.	6.	15.	Surface lightly ridged, few narrow cracks Snow density .380
22	55.	140.	6.	15.	Surface lightly ridged, few narrow cracks Snow density .337
27	55.	140.	7.	18.	Surface moderately ridged, few narrow cracks Snow density .310
Feb 3	57.	145.	7.	18.	Surface moderately ridged, few narrow cracks Snow density .334
10	60.	152.	7.	18.	Surface moderately ridged, no cracks visible Snow density .370
17	60.	152.	7.	18.	Surface moderately ridged, " " " Snow density .350
24	62.	157.	7.	18.	Surface moderately ridged, few narrow cracks Snow density .324
Mar 3	68.	173.	11.	28.	Surface moderately ridged, numerous cracks Snow density .330
10	67.	170.	10.	25.	Surface moderately ridged, numerous cracks Snow density .360
17	68.	173.	10.	25.	Surface moderately ridged, numerous cracks Snow density .336
24	68.	173.	10.	25.	Surface moderately ridged, numerous cracks Snow density .304
31	70.	178.	10.	25.	Surface moderately ridged, numerous cracks Snow density .354
Apr 7	72.	183.	10.	25.	Surface moderately ridged, numerous cracks Snow density .308
15	78.	198.	9.	23.	Surface moderately ridged, numerous cracks Snow density .400
21	77.	196.	11.	28.	Surface moderately ridged, numerous cracks Snow density .418
27	83.	211.	14.	36.	Surface moderately ridged, no cracks visible Snow density .326

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Eureka (cont'd):					
1961					
May 5	84.	213.	14.	36.	Surface moderately ridged, no cracks visible Snow density .372
12	85.	216.	14.	36.	Surface moderately " " " " Snow density .334
19	87.	221.	14.	36.	Surface moderately " numerous cracks Snow density .368
27	88.	224.	14.	36.	Surface moderately " " " Snow density .384
Jun 2	90.	229.	12.	30.	Surface moderately " " " Snow density .438
9	88.	224.	8.	20.	Surface moderately " " " Snow density .394
16	84.	213.	2.	5.	Surface lightly ridged, numerous cracks Snow mixed w/ water. Ice program completed for this year as water and cracks make measurements unsafe.
Frobisher Bay: Measurements made halfway between Department of Transport Causeway and Long Island; see sketch map.					
1960					
Dec 31	No ice thickness reports from Frobisher Bay for November or December, because of dangerous tidal ridging close to shore.				
1961					
Jan 5	27.	69.	7.	18.	Surface smooth, few cracks
14	31.	79.	7.	18.	" " " "
21	34.	86.	4.	10.	" " " "
26	32.	81.	4.	10.	" " " "
Feb 4	38.	97.	4.	10.	" " " "
10	40.	102.	5.	13.	" " no cracks
18	42.	107.	4.	10.	" " " "
24	48.	122.	4.	10.	" " " " Tidal ridging 7 to 8 ft high close to shore.
Mar 3	48.	122.	5.	13.	Surface smooth, no cracks
10	50.	127.	5.	13.	" " " " Tidal ridging 200 ft from shore.
18	52.	132.	5.	13.	Surface smooth, no cracks
24	53.	135.	5.	13.	" " " " Tidal ridging 200 ft from shore.
31	58.	147.	6.	15.	Surface smooth, no cracks
Apr 8	55.	140.	9.	23.	" " numerous cracks
15	55.	140.	12.	30.	" " " "
21	57.	145.	12.	30.	" " " "
28	57.	145.	7.	18.	" " " " Tidal ridging continues to build.
May 5	56.	142.	7.	18.	Surface smooth, numerous cracks
12	56.	142.	7.	18.	" " " "
20	57.	145.	8.	20.	" " " "
26	60.	152.	9.	23.	" " " "
Goose Bay: Measurements made 100 yd in northwesterly direction from the northwest end of main dock.					
1960					
Dec 2	11.	28.	3.	8.	Surface smooth, no cracks First report received.
9	11.	28.	8.	20.	Surface lightly ridged, no cracks Slush ice along shoreline due to tidal action.
16	12.	30.	6.	15.	Surface smooth, no cracks
23	16.	41.	5.	13.	" " " "
30	19.	48.	5.	13.	" " " "
1961					
Jan 6	19.	48.	8.	20.	" " " "
13	20.	51.	10.	25.	" " " "
20	21.	53.	13.	33.	" " " "
27	26.	66.	9.	23.	" " " "
Feb 3	26.	66.	10.	25.	" " " "
10	28.	71.	11.	28.	" " " "
17	30.	76.	12.	30.	" " " "
24	30.	76.	8.	20.	" " " "
Mar 3	30.	76.	10.	25.	" " " "
13	31.	79.	11.	28.	" " " "
17	32.	81.	14.	36.	" " " "

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Goose Bay (cont'd):					
1961					
Mar 24	32.	81.	13.	33.	Surface smooth, no cracks
31	32.	81.	9.	23.	" " " "
					Slush under snow along shoreline due to tidal action.
Apr 7	33.	84.	3.	8.	Ice covered w/ snow and slush. No cracks
14	32.	81.			Ice covered w/ frozen slush. No cracks
21	32.	81.			Surface smooth, few cracks
28	Ice considered unsafe for obs due to open cracks and pools of water along shoreline and near wharf.				
Hall Beach:	Measurements made about 500 yd offshore northeast of the dock in line w/ the hydrogen shed and maintenance buildings.				
1960					
Oct 24	Slush 1/2 mile offshore.				
28	Fast ice forming along shore.				
Nov 4	Less than 1 in. (3 cm) ice.				
11	8.	20.	Trace		Surface smooth, few cracks
18	18.	46.	6.	15.	" " " "
25	19.	48.	12.	30.	" lightly ridged, few cracks
30	Because of tide action an open lead about 1/2 mile from shore forms and disappears from day to day. Considerable piling up of ice along edge of lead. Open water to horizon past the edge of ice most of the time. No bergs sighted. There has been ice over part of the sea since November 2. No bergs embedded in the ice, as was the case last year.				
Dec 2	39.	99.	6.	15.	Surface smooth, few cracks, no leads visible
5	Pressure ridge beginning to build up about 1 mile from shore.				
9			6.	15.	Surface lightly ridged, few cracks, no leads visible
					Ice chisel snapped off after going through 35 in. of ice. No thickness measurements made until April.
16			10.	25.	Surface moderately ridged, few cracks, no leads visible
					Surface heavily ridged about 1500 ft from shore.
23			12.	30.	Snow cover drifted, surface moderately ridged, few cracks
					Fog steaming out of open cracks. No leads visible.
30	No measurements taken.				
1961					
Jan 6			10.	25.	Snow cover drifted, surface smooth, few cracks
13			10.	25.	" " " " " " "
20			10.	25.	" " " " " " "
27			11.	28.	" " " " " " "
					Open lead seen on occasion, a large pressure ridge building up about 1 mile from shore. Beyond this ridge the sea has been open occasionally, but, the area usually is covered to the horizon w/ broken ice.
Mar 3			8.	20.	Surface moderately ridged, few cracks
10			8.	20.	" " " " "
17			7.	18.	" " " " "
24			7.	18.	" " " numerous cracks
31			6.	15.	" " " " "
					Open lead about 1 mile offshore fills periodically w/ drift ice. Pressure ridge along edge of open lead is not as large as in past years. No bergs embedded in the ice this year, either.
Apr 7	76.	193.	5.	13.	Surface moderately ridged, few cracks
14	74.	188.	4.	10.	" " " numerous cracks
21	77.	196.	6.	15.	" " " " "
					Occasional leads forming approx. 1/2 mile from shore running north - south, 2 miles long.
28	78.	198.	4.	10.	Surface moderately ridged, numerous cracks
May 5	80.	203.	2.	5.	Surface lightly ridged, numerous cracks
					Lead about 1/2 mile offshore, 200 - 300 ft wide running length of shore beyond line of sight. Slush and water on top of ice near shore, surface heavily ridged 3/4 mile from shore, numerous large cracks.
12	80.	203.	2.	5.	Surface lightly ridged, numerous cracks
					Lead alternately frozen over, during past week.
19	80.5	204.	3.	8.	Surface lightly ridged, numerous cracks
					Open lead past week. Ice very soft and rotten throughout depth of drill hole.
26	81.	206.	5.	13.	Snow cover drifted, surface heavily ridged, numerous cracks
					Ice soft and rotten, leads about 3/4 mile out throughout most of week, about 1/2 mile wide, and as far as visible.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Hall Beach (cont'd):					
1961					
Jun 2	81.	206.	6.	15.	Snow cover drifted, surface heavily ridged, numerous cracks
9	81.	206.	2.	5.	Surface heavily ridged, numerous cracks. Open water 3/4 mile from shore. Small drifting ice floes. Open for past 2 weeks. A separate message reported 12 in. depth of snow cover.
16	93.	236.	Note - - - - - - - - -		This observation appears doubtful, estimate ice thickness to be 83 in. (211 cm) instead. Author. Surface heavily ridged, numerous cracks. Open water 3/4 mile from shore. Small drifting ice floes. Ice rotten and covered w/ slush and water.
23	Surface heavily ridged, 8 to 10 in. (20 to 25 cm) water and slush on ice. Ice soft and rotten, numerous open cracks. Open water 3/4 mile from shore. Small drifting ice floes. Ice unsafe for further observations.				
Holman Island: Measurements made 120 ft from shore tidal crack, due west of the Hudson Bay Company warehouse.					
1960					
Oct 21	2.	5.			Surface smooth, few cracks
28	9.	23.	1.	3.	" " no cracks
Nov 4	14.	36.	1.	3.	" "
11	20.	51.	1.	3.	" "
18	25.	64.	1.	3.	" "
25	29.	74.	1.	3.	" "
Dec 2	32.	81.	1.	3.	" " " "
9	35.	89.	2.	5.	" " " "
16	38.	97.	2.	5.	" " " "
23	40.	102.	1.	3.	" " " "
1961					
Jan 6	45.	114.	1.	3.	" " " "
14	49.	124.	1.	3.	" " " "
20	52.	132.	1.	3.	" " " "
27	56.	142.	1.	3.	" " " "
Feb 3	59.	150.	2.	5.	" " " "
9	61.	155.	4.	10.	Surface lightly ridged
17	63.	160.	4.	10.	" " "
24	65.	165.	4.	10.	" " " no cracks
Mar 3	68.	173.	4.	10.	" " " " "
10	70.	178.	3.	8.	" " " " "
17	73.	185.	1.	3.	" smooth, no cracks
24	74.	188.	1.	3.	" " " "
31	77.	196.	1.	3.	" " " "
Apr 7	79.	201.	1.	3.	" " " "
14	81.	206.	1.	3.	" " " "
21	83.	211.	3.	8.	" " " "
28	84.	213.	4.	10.	" " " "
May 5	85.	216.	3.	8.	Surface lightly ridged, no cracks
12	85.	216.	3.	8.	" " " " "
19	86.	218.	2.	5.	" " " " "
26	87.	221.			" " " few cracks
Jun 2	86.	218.			" " " numerous cracks
9	73.	185.			" " " " "
16	62.	157.			Surface moderately ridged, numerous cracks
23	35.	89.			" " " few cracks, cracks refrozen
25	Ice free from shore. Wide crack across entrance of harbor.				
30	10.	25.			Surface smooth, no cracks
Jul 31	Ice free.				
Hopedale: Measurements made near the center of the harbour approx. 1/2 mile due south from Department of Transport weather station. Site is in the ships channel and is also the air strip area for ski equipped aircraft.					
1960					
Dec 13	2.	5.			Surface smooth, no cracks
16	5.	13.			" " " "
1961					
Jan 6	16.	41.	1.	3.	" " " "
13	20.	51.	2.	5.	" " " "
20	23.	58.	2.	5.	" lightly ridged, no cracks
27	26.	66.	6.	15.	" moderately ridged, no cracks
Feb 3	29.	74.	6.	15.	" lightly ridged
10	31.	79.	6.	15.	" " "

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Hopedale (cont'd):					
1961					
Mar 3	36.	91.	6.	15.	Surface lightly ridged, no cracks
10	38.	97.	6.	15.	" " " " "
17	44.	112.	8.	20.	" moderately ridged, no cracks
24	48.	122.	10.	25.	" " " " "
31	48.	122.	12.	30.	" " " " "
Apr 7	46.	117.	1.	3.	" smooth, no cracks
14	44.	112.			" " " "
21	42.	107.			" " " "
28	40.	102.			" " " "
May 5	40.	102.			" " few cracks
12	37.	94.			" " narrow cracks on north shore of harbor.
19	Ice not considered safe for measurements, very rotten w/ numerous cracks.				
26	Ice very rotten, approx. 8/10 of harbor still covered w/ ice.				
Inuvik:	**Measurement site not reported.**				
1960					
Nov 12	11.	28.	5.	13.	
19	15.	38.	4.	10.	
26	17.	43.	4.	10.	
Dec 4	18.	46.	4.	10.	Surface smooth
11	19.	48.	5.	13.	" "
17	20.	51.	5.	13.	" "
26	23.	58.	5.	13.	" "
1961					
Jan 7	26.	66.	6.	15.	" " no cracks
15	28.	71.	6.	15.	" " " "
21	30.	76.	6.	15.	" " " "
29	33.	84.	6.	15.	" " " "
Feb 4	35.	89.	7.	18.	" " " "
12	38.	97.	6.	15.	" " " "
18	38.	97.	6.	15.	" " " "
26	44.	112.	7.	18.	" " " "
Mar 4	43.	109.	7.	18.	" " " "
11	42.	107.	7.	18.	" " " "
19	45.	114.	9.	23.	" " " "
25	45.	114.	10.	25.	" " " "
Apr 2	48.	122.	10.	25.	" " " "
9	47.	119.	9.	23.	" " " "
16	48.	122.	8.	20.	" " " "
23	49.	124.	10.	25.	" " " "
30	46.	117.	18.	46.	" " " "
May 6	47.	119.	18.	46.	" " " "
13	47.	119.	18.	46.	" " " "
20	49.	124.	1.	3.	" " " "
27	Ice conditions unsafe, readings discontinued.				
Isachsen:	**Measurement site not reported.**				
1960					
Aug 7	East end of bay partly open. Rest of bay appears to be solid w/ broken and packed ice.				
14	Bay open. Some ice appears at entrance of bay.				
21	Bay open.				
Sep 4	Bay open.				
11	Bay started to freeze September 7. Not completely covered. Ice thickness 2 to 3 in. (5 to 8 cm). Open leads along shore line.				
18	6.	15.			Few cracks. Bay completely covered. Several small cracks along shore.
25	9.5	24.	1.	3.	
Oct 2	12.	30.	1.	3.	
9	14.	36.	5.5	14.	Snow density .113. Ice reports taken each Sunday w/ area well marked w/ flags.
14	18.	46.	6.	15.	Snow cover packed. Few cracks. Snow density .188. Very small cracks appear along shore line and further out in bay.
21	24.	61.	1.	3.	Few cracks along shore.
28	32.	81.	3.	8.	Snow cover packed. Snow density .092.
Nov 5	28.	71.			Snow depth 2 to 5 in. (5 to 13 cm) and hard packed.

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Isachsen (cont'd):					
1960					
Nov 11	32.	81.	3.	8.	Snow cover hard packed
18	35.	89.	5.	13.	4 in. (10 cm) hard packed, 1 in. (3 cm) new snow on top, density .178.
25	37.	94.	6.	15.	
Dec 6	40.	102.	5.	13.	Snow cover hard packed, density .188
9	42.	107.	8.	20.	" " " "
16	45.	114.	7.	18.	" " " "
23	50.	127.	4.5	11.	" " " " " .178
30	52.	132.	4.5	11.	" " " " " .184
1961					
Jan 6	54.	137.	5.	13.	" " " " " .182
13	56.	142.	6.	15.	" " " " " .184
21	61.	155.	5.5	13.	" " " " " .189
29	62.	157.	6.	15.	" " " " " .198 (Trace fresh snow)
					Densities appear to be too low for "hard packed", Oct. 1960 through Jan. 1961, Author.
Feb 3	64.	163.	7.5	19.	Snow cover hard packed, density .10. 1/2 in. (1 cm) new soft snow on top.
10	68.	173.	6.5	17.	Snow cover hard packed, density .392
17	71.	180.	3.5	9.	" " " " " .340
25	74.	188.	4.	10.	" " " " " .372
					(Density on 2/3/61 appears to be too low for "hard-packed", Author.)
Mar 3	78.	198.	5.	13.	Snow cover hard packed, density .380
10	80.	203.	4.5	11.	" " " " " .392, snow ridged and drifted.
17	81.	206.	5.5	14.	" " " " " .376
25	83.	211.	4.	10.	" " " " " .384
31	87.	221.	3.	8.	" " " " " .394
Apr 7	91.	231.	4.	10.	" " " " " .360
14	93.5	237.	4.	10.	2 in. (5 cm) hard packed and 2 in. (5 cm) newly fallen snow, density .436.
21	93.5	237.	7.	18.	3 in. (8 cm) " " " 4 in. (10 cm) newly fallen soft snow, density .396
28	96.5	245.	6.	15.	3 in. (8 cm) hard packed and 3 in. (8 cm) " " " snow, density .386
May 13	97.5	248.	7.	18.	4 1/2 in. (11 cm) hard packed and 2 1/2 in. (6 cm) soft new snow, density .356
22	4.5 in. (11 cm) hard packed snow, 2.5 in. (6 cm) new soft snow, density .335				
23	94.	239.	7.	18.	
Jun 10	96.	244.	6.	15.	Snow density .386. 3.5 in. (9 cm) hard packed snow, 2.5 in. (6 cm) new soft snow.
20	96.	244.			Slush covered ice surface of 1.5 in. (4 cm)
27	96 in. (244 cm) slush ice. Numerous large puddles on surface.				
Jul 7	Surface soft, large puddles and large bands of water on shore line, ice considered unsafe.				
14	67.	170.			Apparently open water w/ exception of raft ice approx. 3 miles from shore.
21	53.	135.			20% pooled water to 3 in. deep.
28	43.	109.			5% pooled water to 2 in. deep. Surface soft, large band water on shore line. 12 to 16 in. crack 50 yd north side of bay.
Knob Lake: Measurements made in Knob Lake. See sketch map for east, center and west locations					
1960					
Nov 11	8.	20.	2.	5.	Surface smooth, east - west cracks
18	10.	25.	6.	15.	" " " " "
25	11.	28.	7.	18.	" "
Dec 2	14.	36.	11.5	29.	" " Depth of snow cover variable. Avg snow amounts are given in the column and extremes are given in remarks. Snow depth variable 9 to 14 in. (23 to 36 cm).
9	16.	41.	9.5	24.	Surface smooth. 1 to 5 in. (3 to 14 cm) slush under snow.
16	18.	46.	5.	13.	" "
23	21.	53.	6.	15.	" " few cracks
1961					
Jan 6	25.	64.			Depth of snow cover variable, 4 to 8 in. (10 to 20 cm) Surface smooth, few cracks
13	28.	71.			Depth of snow cover variable, 4 to 12 in. (10 to 30 cm) Surface smooth, numerous cracks
20	29.	74.			Depth of snow cover variable, 4 to 24 in. (10 to 61 cm) Surface smooth, numerous cracks
27	31.	79.			Depth of snow cover variable 6 to 24 in. (15 to 61 cm) Surface lightly ridged, few cracks

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Knob Lake (cont'd):					
1961					
Feb 3	36.	91.	13.	33.	Surface moderately ridged, few cracks Ice thickness measurements were taken at the center, west and east side of lake. The obs taken at the center site are given in the column and the other two values in remarks. Depth of snow cover variable. Avg snow amounts are given in the column and the extremes given in remarks. Ice thickness west side 33 in. (84 cm), east side 31 in. (79 cm) snow depth variable 6 to 20 in. (15 to 51 cm). Drifted snow.
10	39.	99.	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 36 in. (91 cm), east side 33 in. (84 cm) snow depth variable 5 to 18 in. (13 to 46 cm).
17	41.	104.	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 37 in. (94 cm), east side 36 in. (91 cm) snow depth variable 5 to 18 in. (13 to 46 cm).
24	42.	107.	11.5	29.	Surface moderately ridged, numerous cracks Ice thickness west side 40 in. (102 cm), east side 38 in. (97 cm) snow depth variable 5 to 18 in. (13 to 46 cm). Numerous multi-directional cracks.
Mar 3	44.	112.	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 43 in. (109 cm), east side 38 in. (97 cm) snow depth variable 5 to 18 in. (13 to 46 cm). Newly fallen snow on snow crust.
10	46.	117.	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 43 in. (109 cm), east side 39 in. (99 cm) snow depth variable 5 to 18 in. (13 to 46 cm). New snow on snow crust.
17	47.	119.	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 45 in. (114 cm), east side 40 in. (102 cm) snow depth variable 5 to 18 in. (13 to 46 cm).
24	48.	122.	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 46 in. (117 cm), east side 42 in. (107 cm) snow depth variable 5 to 18 in. (13 to 46 cm).
31	48.	122.	8.5	21.	Surface moderately ridged, numerous cracks Ice thickness west side 48 in. (122 cm), east side 44 in. (112 cm) snow depth variable 2 to 15 in. (5 to 38 cm). Crusted snow and areas of frozen slush. Numerous multi-directional cracks up to 1 1/2 in. wide.
Apr 7	48.	122.	7.	19.	Snow depth variable 1 to 14 in. (3 to 36 cm). Surface moderately ridged, numerous cracks Areas of slush 4 in. (10 cm) deep, thin slush under soft snow.
14	46.	117.	5.	14.	Surface moderately ridged, few cracks Snow depth variable 1 to 10 in. (3 to 25 cm). Areas of frozen slush, thin crusted snow.
21	47.	119.	4.	11.	Surface moderately ridged, few cracks Snow depth variable 1 to 8 in. (3 to 20 cm). Crystalline wet snow, numerous areas of slush w/ thin ice crust.
28	44.	112.	2.	6.	Surface moderately ridged, few cracks Snow depth variable 1 to 4 in. (3 to 10 cm). Crystalline snow, 40% slush cover under thin ice crust, slush up to 8 in. (20 cm) deep.
May 5	39.	99.	Trace		Surface moderately ridged, few cracks Slush 6 to 8 in. (15 to 20 cm) deep and thin water layer beneath.
12	37.	94.	Trace		Surface moderately ridged, few cracks 100% frozen slush cover, ice thin along the lake shore.
19	34.	86.			Surface smooth, few cracks Approx. 3 ft open water along the shore. Ice very wet.
26	31.	79.			Surface smooth, few cracks 10 to 15 ft open water along shore line. Ice very soft in places and about 15 in. (38 cm) thick.
Jun 2	18.	46.			Surface smooth, numerous cracks Ice candled, considered unsafe for measurement. Ice cover 80% concentrated at south end of lake. Numerous cracks, east - west.
9	10.	25.			Surface smooth, numerous cracks Ice cover 40%. Ice at south end of lake. Cracks and leads east - west.
11	Lake ice free.				

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Knob Lake (Maryjo Lake): Measurements made in Maryjo Lake. See sketch map for east, center and west locations.					
1961					
Feb 3	36.	91.	10.5	27.	Surface moderately ridged, few cracks Ice thickness measurements were taken at the center, west and east side of lake. The obs taken at the center site are given in the column and the other two values in remarks. Depth of snow cover is variable. Avg snow amounts are given in the column and the extremes are given in remarks. Ice thickness west side 38in. (97 cm), east side 39 in. (99 cm) snow depth variable 3 to 18 in. (8 to 46 cm).
10	36.	91.	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 41 in. (104 cm), east side 39 in. (99 cm) snow depth variable 5 to 18 in. (13 to 46 cm).
17	42.	107	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 41 in. (104 cm), east side 41 in. (104 cm) snow depth variable 5 to 18 in. (13 to 46 cm).
Mar 3	47.	119.	10.5	27.	Surface moderately ridged, few cracks Ice thickness west side 47 in. (119 cm), east side 48 in. (122 cm) snow depth variable 3 to 18 in. (8 to 46 cm).
10	47.	119.	10.5	27.	Surface moderately ridged, few cracks Ice thickness west side 47 in. (119 cm), east side 48 in. (122 cm) snow depth variable 3 to 18 in. (8 to 46 cm). Newly fallen snow.
17	51.	130.	11.5	29.	Surface moderately ridged, few cracks Ice thickness west side 51 in. (130 cm), east side 51 in. (130 cm) snow depth variable 3 to 20 in. (8 to 51 cm). Cracks up to 3/4 in. wide.
24	52.	132.	9.5	24.	Surface moderately ridged, few cracks Ice thickness west side 54 in. (137 cm), east side 49 in. (124 cm) snow depth variable 3 to 16 in. (8 to 41 cm).
31	54.	137.	8.	20.	Surface moderately ridged, numerous cracks Ice thickness west side 55 in. (140 cm), east side 50 in. (127 cm) snow depth variable 2 to 14 in. (5 to 36 cm). Crusted snow and areas of frozen slush.
Apr 7	53.	135.	8.	20.	Surface moderately ridged, few cracks Ice thickness west side 54 in. (137 cm), east side 50 in. (127 cm) snow depth variable 2 to 14 in. (5 to 36 cm). Slush area up to 8 in. deep near south end of lake.
14	53.	135.	5.	13.	Surface moderately ridged, few cracks Ice thickness west side 54 in. (137 cm), east side 50 in. (127 cm) snow depth variable 0 to 10 in. (0 to 25 cm). Extensive area of frozen slush. 8 in. of slush under snow at south end of lake. Crusted snow.
21	51.	130.	1.5	4.	Surface moderately ridged, few cracks Ice thickness west side 54 in. (137 cm), east side 51 in. (130 cm) snow depth variable 0 to 3 in. (0 to 8 cm). 50% snow coverage. Free water at south end of lake. Patches of slush.
28	48.	122.	1.5	4.	Surface moderately ridged, few cracks Ice thickness west side 51 in. (130 cm), east side 48 in. (122 cm) snow depth variable 0 to 3 in. (0 to 8 cm). 50% frozen slush under ice crust.
May 5	43.	109.			Surface lightly ridged, numerous cracks Ice thickness west side 47 in. (119 cm), east side 43 in. (109 cm). 80% free water on top of ice, rest slush. 12 in. slush and water in places.
12	38.	97.	Trace		Surface lightly ridged, few cracks Ice thickness west side 41 in. (104 cm), east side 37 in. (94 cm). Open water around most of shore. Surface honeycombed.
19	36.	91.			Surface smooth, few cracks Ice thickness west side 38 in. (97 cm), east side 34 in. (86 cm). Ice wet, 3 - 4 ft open water around shore.
26	Ice thickness estimated 30 in. (76 cm). Surface smooth, few cracks. Ice considered unsafe to be measured. 10% open water around shore and at south end.				
Jun 2	Ice thickness estimated 16 in. (41 cm). Ice considered unsafe to be measured. Ice cover 85%, surface smooth, no snow on ice. South end lake open, few cracks east - west.				
9	Ice thickness estimated 12 in. (30 cm). Surface smooth, few cracks. Ice cover 50%. Ice separated into 3 large pans.				
13	Break-up complete.				

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Moosonee: Measurement site Moose River. Directly in front of the Hudson Bay store and 250 ft from shore; see sketch map.					
1960					
Nov 10					First complete ice coverage occurred, but was broken up by wind and tides. Large floating pans persisted all day. The ice was 1/4 to 1 in. (.5 to 3 cm) thick, soft and rubbery.
11					Surface lightly ridged, numerous cracks. Ice thickness estimated 1 in. (3 cm), depth of snow estimated 1 in. (3 cm). 300 - 400 yd lead in mid-river becoming wider towards river mouth.
17					All ice completely taken out by storm.
24					Thin ice coverage similar to that of November 10 w/ large mid-river lead developed by mid-day due to wind and tide.
25					Surface smooth, few tidal cracks. Ice thickness estimated 1/2 to 2 in. (1 to 5 cm). Trace or no snow cover. Tidal crack less than 1 in. wide w/ water seeping through in places. Freeze up almost complete, but small blind leads and widespread puddling persisting for a few days.
Dec 2	7.	18.	3.	8.	Surface smooth, tidal cracks
9	12.	30.	2.	5.	" " " "
16	15.	38.	2.	5.	" " " "
					Tidal crack parallel to shore, 12 in. of water along the tidal crack at the high tide.
23	17.	43.	2.	5.	Surface smooth, tidal cracks
30	22.	56.	2.	5.	" " " "
1961					
Jan 6	24.	61.	4.	10.	" " " "
13	26.	66.	4.	10.	" " " "
20	26.	66.	7.	18.	" " " "
27	27.	69.	3.	8.	" " " "
Feb 3	30.	76.	3.	8.	Snow cover packed, surface lightly ridged, tidal cracks
10	28.	71.	4.	10.	Surface lightly ridged, tidal cracks
17	29.	74.	7.	18.	" " " " "
24	32.	81.	7.	18.	" smooth, tidal cracks
Mar 3	31.	79.	7.	18.	" " few cracks
10	34.	86.	10.	25.	" " " "
17	35.	89.	12.	30.	" " tidal cracks
					8 in. slush ice included in thickness measurement.
24	31.	79.	7.	18.	Surface smooth, few cracks
31	32.	81.	7.	18.	" " " "
					8 in. slush ice included in thickness measurement. Light hummocks along tidal crack.
Apr 7	28.	71.			Surface smooth, 8 in. (20 cm) slush, few tidal cracks
14	28.	71.			" " " " " " " " " "
					Heavy puddling and tidal water on surface.
21	29.	74.	2.	5.	Surface smooth, few tidal cracks, heavy puddling.
28	No measurement due to unfavorable ice conditions.				
May 1	Moose River breaking up, first boat crossed.				
Mould Bay: Measurement site not reported.					
1960					
Sep 30	8.	20.	.5	1.	Exact day of bay freeze up not recorded. Freeze up in September started several times, but was broken up by winds.
Oct 16	20.	51.	1.	3.	Surface smooth
21	20.	51.	4.	10.	" "
31	30.	76.	1.	3.	Fresh water ice 24 in. (61 cm), snow depth 2 in. (5 cm).
Nov 11	29.	74.	1.5	4.	3 in. tidal crack 1/4 mile offshore. Measurement taken within 5 ft of previous site.
18	33.	84.	3.	8.	
25	36.	91.	4.	10.	A separate message recorded 34 in. (86 cm) ice, snow depth 6 in. (15 cm).
Dec 2	38.	97.	5.	13.	Snow cover semi-hard
9	44.5	112.	1.5	4.	
16	46.	117.	5.	13.	
23	47.	119.	7.5	19.	Snow density .400. Avg surface temp for week -15F recorded within 1 in. of snow surface.
30	50.	127.	6.	15.	Snow density .452. (Densities seem to be too high, Author) Avg surface temp over ice approx. -13F.
1961					
Jan 6	53.	135.	6.	15.	Snow density .404. Avg air temp over ice -31F.
13	56.	142.	6.	15.	" " .416. " " " " " -35.8F, at 6 in. over ice.
20	59.	150.	6.5	17.	Snow density .418. " " " " " -25.7F.
27	60.	152.	5.5	14.	" " .436. " " " " " -17.1F.

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Mould Bay (cont'd):					
1961					
Jan 27					(Densities appear to be too high, Author)
Feb 3	63.5	161.	5.5	14.	Snow density .430. Avg air temp over ice -15F.
10	65.5	166.	7.5	19.	" " .404. " " " " " -22.2F.
17	68.	173.	7.	18.	" " .450.
24	70.	178.	6.5	17.	" " .392. " weekly temp over ice -27F.
Mar 3	68.	173.	7.	18.	Snow density .352. Avg temp over ice w/ sensing element snow covered -29F. Tidal crack approx. 200 ft offshore, several non-uniform cracks on either side.
17	73.	185.	7.	18.	Snow density .394. Previous observation taken 8 ft from usual site would have to be 71.5 in. for steady ice growth. Avg weekly temp at ice surface -34.4F.
24	77.5	197.	7.	18.	Snow density .400. Pressure ridge 1/2 mile offshore, 4 1/2 ft high w/ 23 in. opening at crest of ridge.
31	78.	198.	7.	18.	Snow density .421.
Apr 7	79.	201.	7.	18.	" " .346.
14	80.	203.	8.	20.	" " .356.
22	81.	206.	8.5	22.	" " .352.
28	81.	206.	9.	23.	" " .454.
May 5	79.	201.	8.5	22.	" " .435.
12	82.	208.	8.	20.	" " .451.
19	83.	211.	8.	20.	" " .400.
26	84.	213.	7.	18.	" " .430.
Jun 2	84.	213.	7.	18.	" " .547. Snow becoming very coarse. Ice from the drilled hole mushy. Appears that growth has stopped.
9	Measurements discontinued. Water in large area up to 2 in. deep covering dangerous cracks out to measurement site, 1 mile from camp.				
Nicolet: Measurements made at site "A" in Lake St. Peter (46°12'45"N 72°39'54"W); see sketch map.					
1960					
Dec 8	Freeze up.				
23	Ice still unsafe for vehicle. Sites "A" & "B" will be obs regularly. Site C will be obs and reported when practicable.				
29	5.	13.	8.	20.	Surface moderately ridged, no cracks
1961					
Jan 6	5.	13.	7.	18.	" " " " "
13	18.	46.	7.	18.	" lightly ridged
					Water under snow along shore since the 6th.
20	19.	48.	3.	8.	Surface lightly ridged, cracks frozen
27	24.	61.	4.	10.	" " "
Feb 3	29.	74.	2.	5.	Surface smooth
10	27.	69.	3.	8.	" " few cracks
17	29.	74.	2.	5.	" lightly ridged, few cracks
24	36.	91.	2.	5.	" " "
Mar 3	29.	74.	8.	20.	" smooth, no cracks. 1 in. water in lower 8 in. of snow.
10	No observation taken.				
17	29.	74.	10.	25.	Surface smooth, no cracks
24	30.	76.	9.	23.	" " " "
					1 in. water in lower 8 in. of snow.
Nicolet: Measurements made at site "B" in Lake St. Peter (46°13'01"N 72°42'00"W); see sketch map.					
1960					
Dec 29	9.	23.	8.	20.	Surface moderately ridged, no cracks
1961					
Jan 6	Observation site unreachable.				
13	14.	36.	20.	51.	Surface lightly ridged
20	23.	58.	6.	15.	" " "
					Frozen cracks along shore.
27	19.	48.	5.	13.	Surface lightly ridged.
Feb 3	22.	56.	4.	10.	Surface smooth
10	28.	71.	3.	8.	" " few cracks
17	28.	71.	4.	10.	" lightly ridged, few cracks
24	25.	64.	4.	10.	" " " " "
					Long crack running in a north - south direction located at about 300 ft west of site "B".
Mar 3	22.	56.	13.	33.	Surface smooth, no cracks
					8 in. water in lower 5 in. of snow.

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Nicolet (site "B" cont'd):					
1961					
Mar 10	No observation taken				
17	32.	81.	10.	25.	Surface smooth, no cracks
24	31.	79.	8.	20.	" " " "
Nicolet: Measurements made at site "C" in Lake St. Peter (46 10'54"N 72 46'09"W); see sketch map.					
1961					
Jan 6	15.	38.	8.	20.	4 in. water under snow.
13	No observation taken.				
20	18.	46.	12.	30.	Surface lightly ridged
27	18.	46.	10.	25.	" " "
Feb 3	22.	56.	10.	25.	" smooth
10	20.	51.	11.	28.	" " few cracks Large crack 4 in. wide running in a north - south direction located about 500 ft west of site "C".
17	No observation taken due to poor visibility.				
24	" " " " " "				"
Mar 3	23.	58.	10.	25.	Surface smooth, no cracks 3 in. water in lower 7 in. of snow.
10	No observation taken.				
17	20.	51.	10.	25.	Surface smooth, no cracks 12 in. (30 cm) of soft ice above solid ice.
24	30.	76.	7.	18.	Surface smooth, no cracks 2 in. layer water, 10 in. below the ice surface.
Nitchequon: Measurements made approx. 150 ft south of landing dock. Dock runs due north - south; see sketch map.					
1960					
Oct 12	Small lake in vicinity of station frozen.				
Nov 7	Freeze up complete.				
11	2.	5.	1.	3.	Surface smooth, few cracks
18	5.	13.	3.	8.	Snow cover slushy, surface lightly ridged, few cracks
25	5.5	14.	3.	8.	" " " " " " " "
Dec 2	9.	23.	5.	13.	Surface moderately ridged, few cracks
9	12.	30.	3.	8.	" " " " "
17	15.	38.	9.	23.	" " " " " Small bay northeast corner of main lake frozen over.
23	17.	43.	10.	25.	Surface moderately ridged, few cracks
30	18.	46.	11.	28.	" " " " " Many large snow drifts on all portions of lake.
1961					
Jan 6	23.	58.	11.	28.	Surface moderately ridged, few cracks
13	24.	61.	9.	23.	" " " " "
20	25.	64.	11.	28.	" " " " "
28	27.	69.	13.	33.	" " " " "
Feb 3	27.	69.	13.	33.	" " " " "
10	29.	74.	14.	36.	" " " " "
17	30.	76.	15.	38.	" " " " "
24	32.	81.	14.	36.	" " " " "
Mar 3	33.	84.	15.	38.	" " " " "
10	33.	84.	15.	38.	" " " " "
17	35.	89.	16.	41.	" " " " "
24	36.	91.	16.	41.	" " " " "
31	36.	91.	16.	41.	" " " " "
Apr 7	37.	94.	10.	25.	" " " " " 1 in. (3 cm) of slush.
14	36.	91.	8.	20.	Surface moderately ridged, " " 2 in. (5 cm) of slush.
21	35.	89.	7.	18.	Surface moderately ridged, " " 3 in. (8 cm) of slush.
28	35.	89.	6.	15.	Surface moderately ridged, " " 3 in. (8 cm) of slush.
May 5	32.	81.			Surface heavily ridged, few cracks 2 in. (5 cm) slush on surface.
12	28.	71.			Surface heavily ridged, few cracks 1 in. (3 cm) slush on surface.
19	25.	64.			Surface heavily ridged, few cracks
26	Ice conditions along shoreline unsafe, unable to take exact readings, thickness estimated to be 18 to 20 in. (46 to 51 cm). Surface heavily ridged, numerous cracks.				

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Nitchequon (cont'd):					
1961					
Jun 2	10.	25.			Surface heavily ridged, numerous cracks Large leads along shoreline.
6	Break-up complete.				
Norman Wells: Measurements made on the Mackenzie River approx. 1 mile from the surface weather obs station. Bearing is estimated to be 195 deg true; see sketch map.					
1960					
Nov 11	Freeze up at 2300 P.S.T. Maximum coverage 99%.				
16	River completely frozen over.				
18	7.	18.	1.	3.	Surface lightly ridged
25	11.	28.	2.	5.	" " "
Dec 2	15.	38.	2.	5.	" " " no cracks
9	21.	53.	2.	5.	" " " " "
16	23.	58.	3.	8.	" " " " "
23	27.	69.	8.	20.	" " " " "
30	28.	71.	6.	15.	" " " " "
1961					
Jan 6	34.	86.	5.	13.	" " " " "
13	37.	94.	6.	15.	" " " " "
20	40.	102.	6.	15.	" " " " "
27	37.	94.	6.	15.	" " " " "
Feb 3	40.	102.	6.	15.	" " "
11	45.	114.	6.	15.	" " "
17	40.	102.	6.	15.	" " "
24	43.	109.	6.	15.	" " "
Mar 3	51.	130.	6.	15.	" " " " "
10	55.	140.	6.	15.	" " " " "
17	54.	137.	2.	5.	" " " " "
24	57.	145.	3.	8.	" " " " "
31	57.	145.	2.	5.	" " " " "
Apr 7	59.	150.	3.	8.	" " " few cracks
14	61.	155.	3.	8.	" " " " "
21	62.	157.	3.	8.	" " " " "
28	62.	157.			" " " " "
May 23	Ice break-up.				
Port Harrison: Measurements made approx. 200 - 350 yd southwest of Radiosonde Office; see sketch map.					
1960					
Oct 20	First ice forming.				
Nov 3	No ice.				
7	Ice across river below falls.				
13	Ice across from dock to mission.				
29	No change in ice conditions.				
Dec 7	Bay frozen				
15	Open lead from HBC dock to mission since the 7th.				
16	8.	20.			3 in. (8 cm) loose snow. 7 in. (18 cm) hard packed snow. Surface lightly ridged, no cracks. Lead along west bank from HBC dock to mission refrozen.
23	16.	41.	1.	3.	Surface lightly ridged, no cracks
30	30.	76.	1.	3.	" " " " "
1961					
Jan 6	44.	112.	1.	3.	" " " " "
13	49.	124.	2.	5.	" " " " "
20	47.	119.	2.	5.	" " " " "
27	65.	165.	1.	3.	" " " " "
Feb 3	62.	157.	1.	3.	" " "
10	64.	163.	1.	3.	" " "
17	60.	152.			" " "
24	65.	165.	1.	3.	" " "
Mar 3	70.	178.	2.	5.	" " " " "
10	75.	191.	2.	5.	" " " " "
17	79.	201.	2.	5.	" " " " "
24	74.	188.	3.	8.	" " " " "
31	77.	196.	3.	8.	" " " " "

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Port Harrison (cont'd):					
1961					
Apr 7	80.	203.	3.	8.	Surface lightly ridged, no cracks
14	90.	229.	3.	8.	" " " " "
21	89.	226.	3.	8.	" " " " "
28	85.	216.	1.	3.	" " " " "
May 5	78.	198.	1.	3.	" " " " "
12	84.	213.	1.	3.	" " " " "
19	84.	213.	1.	3.	" " " " "
26	76.	193.	1.	3.	" " " " "
Jun 2	51.	130.	1.	3.	" " " " "
9	65.	165.			" " " " "
16	52.	132.			" " " " "
					Difference in thickness may be due to undercutting.
21	Ice began to break-up.				
24	Main channel clear. Fast ice in shallows still solid.				
Resolute:	Measurements made at the center of Resolute Bay, 1/2 mile from shore. Site is relocated yearly by triangulation on shore survey markers.				
1960					
Aug 8	Bay 7/10 covered w/ small and medium floes. Bay continuously covered during past week.				
24	Bay 3/10 covered w/ small floes.				
Sep 11	Isolated small floes along north shore.				
26	Thin film of slush along shoreline.				
27	Few narrow east - west belts of slush about 20 ft offshore.				
29	Bay 100% covered. 1/2 in. (1 cm) thick sludge and pancake extend 500 ft from shore.				
Oct 11	3.	8.	3.	8.	Few cracks
14	7.	18.	3.	8.	Few cracks, northern half of Bay ice-covered. Numerous leads along shore.
15	Young ice covers all Resolute Bay. Somerset Island.				New ice w/ several cracks covers Barrow Strait across to
22	15.	38.	2.	5.	Snow cover soft, surface smooth, many cracks Bay completely ice-covered. Numerous cracks along bay edge. Snow density .272. Open water discernible in Barrow Strait.
28	19.	48.	2.	5.	Snow cover hard packed, surface smooth. Numerous open leads visible in Barrow Strait. Snow density .333.
Nov 4	20.	51.	2.	5.	Snow cover hard packed, snow density .329.
11	24.	61.	2.	5.	" " " " " " .341.
19	26.	66.	2.	5.	" " " " " " .335.
24	30.	76.	2.	5.	" " " " " " .375.
Dec 1	34.	86.	2.	5.	" " " " " " .400.
9	41.	104.	2.	5.	" " " " " " .393.
16	42.	107.	3.	8.	" " " " " " .380.
23	43.	109.	3.	8.	" " " " " " .330.
30	44.	112.	3.	8.	" " " " " " .340.
1961					
Jan 6	47.	119.	3.	8.	" " " " " " .344.
13	48.	122.	3.	8.	" " " " " " .400.
22	50.	127.	3.	8.	" " " " " " .378.
27	51.	130.	4.	10.	" " " " " " .323.
Feb 3	55.	140.	4.	10.	" " " " " " .355.
10	59.	150.	4.	10.	" " " " " " .309.
17	61.	155.	4.	10.	" " " " " " .401.
24	62.	157.	4.	10.	" " " " " " .362.
Mar 3	65.	165.	4.	10.	" " " " " " .420.
10	67.	170.	4.	10.	" " " " " " .331.
17	68.	173.	5.	13.	" " " " " " .400.
24	68.	173.	5.	13.	" " " " " " .403.
Apr 1	72.	183.	6.	15.	" " " " " " .380.
7	75.	191.	6.	15.	" " " " " " .415.
14	72.	183.	8.	20.	" " " " " " .412.
23	74.	188.	10.	25.	" " " " " " .425.
28	77.	196.	10.	25.	" " " " " " .440.
May 5	76.	193.	13.	33.	Surface lightly ridged, tidal cracks along shore. 9 in. (23 cm) hard packed snow, density .425, and 4 in. (10 cm) powdered snow.

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Resolute (cont'd):					
1961					
May 12	78.5	199.	19.	48.	Surface lightly ridged, tidal cracks along shore. 13 in. (33 cm) hard packed snow, density .450, and 6 in. (15 cm) powdered snow.
19	80.	203.	19.	48.	Surface lightly ridged, tidal cracks along shore. Density of snow at the surface .320.
27	78.	198.	18.	46.	Surface lightly ridged, tidal cracks along shore. Snow hard packed, density .460.
Jun 2	83.	211.	18.	46.	Snow density .421, snow cover hard packed.
10	80.	203.	16.	41.	" " .404 " " " "
16	84.	213.	14.5	37.	Surface puddled. Snow from bottom hole 3 in. (8 cm) snow, 1/2 in. (1 cm) ice, 11 in. (28 cm) wet-packed snow. Density of wet-packed snow .545.
23	81.	206.			Obs site covered w/ 7 in (18 cm) water-slush. Bay 60% surface pooled water 3 to 5 in. deep. No leads, no new cracks or holes.
30	76.	193.			Lead 2 miles away 600 yd wide running east to vision limits. Slush on top of ice to vision limits. Bay surface 60% pooled water to 5 in. deep.
Jul 7	Ice thickness variable 68 to 74 in. (173 to 188 cm), snow cover 40% water, tidal cracks. Estimated 5 mile wide lead, 2 miles due south of bay entrance and running east - west to vision limits.				
14	Ice thickness variable 54 to 67 in. (137 to 170 cm), snow cover 40% water, cracks along shore. Barrow Strait completely open w/ raft ice 3 miles offshore of Cornwallis - Somerset Islands.				
21	Ice thickness variable 46 to 53 in. (117 to 135 cm), snow cover 20% water, cracks along shore. Barrow Strait completely open, open water surrounding Griffith - Cornwallis Islands. Ice visible approx. 5 miles offshore of Somerset Island.				
28	Ice thickness variable 35 to 43 in. (89 to 109 cm), snow cover 5% water, numerous cracks along shore. Only ice visible is landfast ice in inner bay w/ approx. 10 acres open water along shore at creek entrance.				
Sachs Harbour: Measurements made 3/4 mile from beach, bearing south, southwest from RCMP detachment.					
1960					
Oct 31	15.	38.	1.	3.	Surface smooth
Nov 15	25.	64.	1.	3.	" " Open water approx. 5 miles from shore.
30	32.	81.	2.	5.	Surface lightly ridged
Dec 15	42.	107.	2.	5.	Snow cover hard packed, surface smooth
31	58.	147.	5.	13.	Surface ridged, w/ small hard snow drifts.
1961					
Jan 7	48.	122.			
13	53.	135.	7.	18.	Surface lightly ridged, no cracks, snow cover hard packed.
27	57.	145.			Snow cover variable 4 to 8 in. (10 to 20 cm), hard packed. Surface smooth, no cracks
Feb 15	58.	147.	6.	15.	Surface lightly ridged, few cracks
28	68.	173.	7.	18.	" " " " "
Mar 16	72.	183.	4.	10.	No cracks
31	79.	201.	2.	5.	" " Snow cover drifted and hard packed.
Apr 14	84.	213.			Snow cover variable 2 to 4 in. (5 to 10 cm), surface smooth no cracks
21	83.	211.			Snow cover variable 2 to 4 in. (5 to 10 cm), surface smooth no cracks
28	83.	211.			Snow cover variable 3 to 5 in. (8 to 13 cm), surface smooth no cracks
May 5	81.	206.			Snow cover variable 3 to 4 in. (8 to 10 cm), surface smooth no cracks
12	87.	221.			Snow cover variable 1 to 3 in. (3 to 8 cm), surface smooth few cracks
19	90.	229.			Snow cover variable 2 to 3 in. (5 to 8 cm), surface smooth few cracks
26	89.	226.			Snow cover variable 1 to 2 in. (3 to 5 cm), surface smooth few cracks
27	Sea water visible on horizon since the 18th.				
Jun 2	88.	224.	1.	3.	Numerous cracks
9	73.	185.			" " Sea water visible from station.
16	60.	152.			Numerous cracks
22	Ice breaking due to strong southeast winds.				
23	Ice moving in bay.				

ICE THICKNESSES (1960-1961)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Spence Bay: Measurements made in Spence Bay Harbour, about 200 yd south of north shore; see sketch map.					
1960					
Oct 8	6.	15.			Surface smooth
14	7.	18.	.5	1.	" "
21	13.	33.	.5	1.	" "
28	17.	43.	1.	3.	" "
Nov 4	19.	48.	4.	10.	" "
11	23.	58.	4.	10.	" "
18	28.	71.	4.	10.	" "
25	30.	76.	4.	10.	" lightly ridged
Dec 2	34.	86.	5.	13.	" " "
9	38.	97.	6.	15.	" " "
16	40.	102.	6.	15.	" smooth
23	42.	107.	7.	18.	" "
1961					
Jan 6	48.	122.	7.	18.	" " no cracks
16	56.	142.	7.	18.	" " " "
20	60.	152.	7.	18.	" " " "
30	60.	152.	7.	18.	" " " "
Feb 5	66.	168.	6.	15.	" "
10	69.	175.	6.	15.	" "
18	65.	165.	6.	15.	" "
Mar 10	75.	191.	6.	15.	" "
Apr 7	84.	213.	6.	15.	" " " "
14	87.	221.	6.	15.	" " " "
21	89.	226.	8.	20.	" " " "
28	91.	231.	8.	20.	" " " "
May 5	92.	234.	8.	20.	" " " "
12	93.	236.	10.	25.	" " " "
19	93.	236.	9.	23.	" " " "
26	93.	236.	8.	20.	" " " "
Jul 7	50.	127.			" " few cracks
14	24.	61.			" " numerous cracks
					All harbor ice floating free.
20	Harbor ice broken up.				
25	Harbor cleared.				
Trout Lake: Measurements made approx. 100 yd offshore south of the Radiosonde Building; see sketch map.					
1960					
Nov 25	13.	33.	2.	5.	Surface smooth
Dec 2	16.	41.	3.	8.	" " no cracks
9	17.	43.	3.	8.	" " " "
16	20.	51.	5.	13.	" " " "
23	22.	56.	5.	13.	" " " "
30	24.	61.	5.	13.	" " " "
1961					
Jan 6	26.	66.	4.	10.	" " " "
13	29.	74.	8.	20.	" " " "
20	29.	74.	9.	23.	" " " "
27	29.	74.	7.	18.	" " " "
Feb 3	30.	76.	8.	20.	" "
10	30.	76.	8.	20.	" "
17	33.	83.	10.	25.	" "
24	36.	91.	9.	23.	" "
Mar 3	37.	94.	10.	25.	" " " "
10	39.	99.	9.	23.	" " " "
17	39.	99.	14.	36.	" " " "
25	34.	86.	8.	20.	" " " "
31	35.	89.	9.	23.	" " " "
Apr 7	38.	97.	8.	20.	" " " "
14	40.	102.	7.	18.	" " " "
21	35.	89.	2.	5.	" " " "
					Wet snow.
28	39.	99.			Surface smooth, no cracks

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Trout Lake (cont'd):					
1961					
May 5	34.	86.			Surface smooth
19	22.	81.			" " few cracks
Yellowknife: Measurements made approx. 150 yd northwest of Pacific Western Airlines and Wardair Docks on the southeast shore of 'Back Bay'; see sketch map.					
1960					
Oct 22	Bay now completely frozen over.				
25	5.	13.	4.	10.	Surface smooth, no cracks
Nov 4	6.	15.	3.	8.	" " " "
10	10.	25.	3.	8.	Snow cover drifted, surface smooth
18	13.	33.	6.	15.	" " " " "
25	15.	38.	8.	20.	" " " " " Site subject to considerable drifting and snow compacted by ski-equipped aircraft.
Dec 2	17.	43.	10.	25.	Surface smooth, no cracks
9	19.	48.	10.	25.	" " " "
16	21.	53.	10.	25.	" " " "
23	24.	61.	8.	20.	" " " "
30	25.	64.	8.	20.	" " " "
1961					
Jan 6	26.	66.	9.	23.	
13	30.	76.	9.	23.	
20	30.	76.	10.	25.	
27	31.	79.	10.	25.	Surface smooth, no cracks
Feb 3	35.	89.	10.	25.	" "
10	36.	91.	10.	25.	" "
17	37.	94.	9.	23.	" "
24	40.	102.	9.	23.	" "
Mar 3	44.	112.	9.	23.	" " " "
10	46.	117.	9.	23.	" " " "
17	46.	117.	11.	28.	" " " "
24	50.	127.	11.	28.	" " " "
31	46.	117.	12.	30.	" " " "
Apr 7	49.	124.	12.	30.	" " " "
14	47.	119.	12.	30.	" " " "
21	50.	127.	10.	25.	" " " "
28	51.	130.	8.	20.	" " " "
May 5	51.	130.	6.	15.	" " " "
12	54.	137.	6.	15.	" " " "
19	51.	130.			Few patches of snow cover, surface smooth, no cracks
26	40.	102.			Surface candled, open water along shore. No further measurements possible this season.

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Alert (Dumbell Bay): Measurements made 50 yd from edge of bay, located due east of Administration Building, salt water location.					
1961					
Aug 31	New ice forming - less than 6 in. (15 cm).				
Sep 11	8.	20.	6.	15.	
16	10.	25.	2.	5.	
25	10.	25.	5.	13.	
Oct 3	8.	20.	10.	25.	Surface smooth, no cracks. 3 in. water, 10 in. (25 cm) snow.
9	16.	41.	1.	3.	" " " "
13	17.	43.	1.	3.	" " " "
23	16.	41.	4.	10.	" " " "
27	22.	56.	1.	3.	" " " "
Nov 3	28.	71.	1.	3.	" " " " Observation point moved closer to the center of the bay to attain more representative measurements.
10	18.	46.	4.	10.	Surface smooth, no cracks
21	19.	48.	2.	5.	" " " "
26	19.	48.	2.	5.	" " " "
Dec 1	25.	64.	2.	5.	
10	23.	58.	1.	3.	" " " "
18	27.	69.	6.	15.	
24	28.	71.			Snow report missing.
1962					
Jan 1	First two observations of month were missing because the replacement for the drill damaged last December hadn't arrived.				
22	38.	97.	6.	15.	Surface smooth, no cracks
28	39.	99.	6.	15.	" " " " No leads.
Feb 5	38.	97.	12.	30.	" " " "
12	40.	102.	15.	38.	" " " "
16	41.	104.	14.	36.	" " " "
23	43.	109.	16.	41.	" " " "
Mar 3	45.	114.	15.	38.	" " " "
9	46.	117.	13.	33.	" " " "
16	48.	122.	13.	33.	" " " "
25	50.	130.	12.	30.	Surface rippled, no cracks
30	51.	132.	10.	25.	" " " "
Apr 6	52.	132.	20.	51.	" "
13	53.	135.	10.	25.	" "
22	55.	140.	15.	38.	Snow density .446.
28	54.	137.	15.	38.	
May 7	52.	132.	11.	28.	Surface smooth, no cracks. Snow density .377.
12	58.	147.	11.	28.	" " " "
18	60.	152.	11.	28.	" " " "
26	63.	160.	12.	30.	" " " "
Jun 2	60.	152.	18.	46.	" "
9	Winds and warm temp caused an early and rapid thaw. Presently 1 to 2 ft of water and slush on the bay. Measurements discontinued.				
Alert (Dumbell Lake): Measurements made in Dumbell Lake, also called Upper Dumbell Lake.					
1961					
Aug 31	Ice free				
Sep 11	Young lake ice, no thickness observation taken, depth of snow 6 in. (15 cm).				
16	2.	5.	6.	15.	
25	7.	18.	10.	25.	Snow cover actually slush.
Oct 3	8.	20.	10.	25.	Surface smooth, no cracks. 4 in. (10 cm) of slush and 6 in. (15 cm) of snow on top of ice.
9	12.	30.	2.	5.	Surface smooth, no cracks
13	14.	36.	1.	3.	" " " "
23	19.	48.	1.	3.	" " " "
27	21.	53.	1.	3.	" " " "
Nov 3	24.	61.	1.	3.	" " " " Observation point moved closer to the center of lake to attain more representative measurements. Location at Dumbell Lake is 50 yd from shore, east of pump house.
10	28.	71.	2.	5.	Surface smooth, no cracks
21	30.	76.	2.	5.	" " " "
26	28.	71.	2.	5.	" " " "
Dec 1	31.	79.	2.	5.	
10	37.	94.	1.	3.	" "
18	41.	104.	2.	5.	
24	41.	104.	3.	8.	

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Alert (Dumbell Lake) (cont'd):					
1962					
Jan 1	First two observations of month were missing because the replacement for the drill damaged last December hadn't arrived.				
22	47.	119.	2.	5.	Surface smooth, no cracks
28	57.	145.	2.	5.	" " " " No leads.
Feb 5	59.	150.	2.	5.	" " " "
12	60.	152.	7.	18.	" " " "
16	61.	155.	8.	20.	" " " "
23	65.	165.	14.	36.	" " " "
Mar 3	67.	170.	12.	30.	" " " "
9	79.	201.	8.	20.	" " " "
16	79.	201.	7.	18.	" " " "
25	68.	173.	8.	20.	Surface rippled, no cracks
30	70.	178.	6.	15.	" " " "
Apr 6	74.	188.	12.	30.	
13	75.	191.	14.	36.	
22	76.	193.	8.	20.	Snow density .348.
28	80.	203.	7.	18.	
May 7	68.	173.	8.	20.	Surface smooth, no cracks. Snow density .346. Ice thickness observation appears to be incorrect. (Author).
12	79.	201.	10.	25.	Surface smooth, no cracks
18	80.	203.	8.	20.	" " " "
26	83.	211.	11.	28.	" " " "
Jun 2	82.	208.	8.	20.	Surface rippled, no cracks
9	Observation discontinued because of rapid disintegration of the ice.				
Allakaket: Measurements made in front of the Church of St. John's in the Wilderness.					
1961					
Oct 2	First ice.				
13	River frozen over.				
16	4.	10.	2.	5.	Surface heavily ridged. 1 lead about 1/4 mile above measurement site about 6 ft wide, 200 ft long extending from the middle of the river to the south bank.
23	6.5	17.	.3	1.	Lead 5 ft wide and 150 ft long on the south side of the bank.
30	8.	20.	2.3	6.	Surface roughly ridged
Nov 6	10.	25.	3.	8.	" " " Lead on south bank is about 125 ft long and 4 1/2 ft wide.
13	11.	28.	5.	13.	Surface roughly ridged. Same lead is about 3 ft wide, 25 ft long.
20	12.5	32.	11.	28.	
27	13.	33.	9.5	24.	
Dec 4	16.	41.	8.	20.	
11	16.	41.	16.	41.	
18	18.	46.	14.	36.	
26	18.	46.	11.	28.	2 in. of water on the ice.
1962					
Jan 2	16.	41.	16.	41.	2 in. " " " " "
8	13.	33.	9.	23.	6 in. " " " " "
15	18.	46.	15.	38.	
22	14.	36.	14.	36.	10 in. " " " " "
29	14.	36.	10.	25.	11 in. " " " " "
Feb 5	13.	33.	9.	23.	15 in. overflow
12	13.	33.	9.	23.	14 in. "
19	12.	30.	10.	25.	13 in. "
26	18.	46.	14.	36.	10 in. "
Mar 5	18.	46.	10.	25.	3 in. "
12	22.	56.	16.	41.	2 in. "
19	13.	33.	8.	20.	3 in. "
26	12.	30.	8.	20.	4 in. "
Apr 2	33.	84.	9.	23.	
9	33.	84.	12.	30.	
16	33.	84.	12.	30.	
23	33.	84.	12.	30.	
30	33.	84.	9.	23.	
May 7	32.	81.	8.	20.	
14	32.	81.	1.	3.	Open water about 300 ft up river, 3/ft wide and 600 ft long. Overflow on the ice about 1 in.

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Allakaket (cont'd):					
1962					
May 21	Ice went out 10:35 P.M. on May 20th.				
Arctic Bay: Measurements made 1/2 mile southwest of station.					
1961					
Oct 13	4.	10.			Surface smooth, no cracks
20	10.	25.	1.	3.	Surface lightly ridged, no cracks
27	15.	38.	1.	3.	" " " " "
Nov 3	18.	46.	2.	5.	" " " " "
10	20.	51.	2.	5.	" " " " "
17	23.	58.	3.	8.	" " " " "
24	26.	66.	3.	8.	" " " " "
Dec 7	30.	76.			" " " " "
14	33.	84.	4.	10.	" " " " "
21	34.	86.	6.	15.	" " " " "
28	36.	91.	6.	15.	" " " " "
1962					
Jan 12	39.	99.	6.	15.	" " " " "
26	42.	107.	6.	15.	" " " " "
Feb 2	46.	117.	6.	15.	" " " " "
9	50.	127.	6.	15.	" " " " "
16	51.	130.	6.	15.	" " " " "
28	53.	135.	6.	15.	" " " " "
Mar 2	55.	140.	6.	15.	" " " " "
9	58.	147.	6.	15.	" " " " "
23	62.	157.	6.	15.	" " " " "
Apr 6	64.	163.	7.	18.	" " " " "
20	67.	170.	7.	18.	Surface heavily ridged, no cracks
May 4	69.	175.	9.	23.	Surface lightly ridged, no cracks
11	70.	178.	10.	25.	" heavily ridged, " "
25	70.	178.	9.	23.	" " " " "
Jun 1	68.	173.	5.	13.	Surface lightly ridged, no cracks
8	65.	165.	7.	18.	" " " " "
15	60.	152.			Surface smooth, few cracks
22	45.	114.			" " numerous cracks
Jul 6	33.	84.			" " Ice breaking up.
13	Ice clearing from bay.				
Baker Lake: Directly in front of Meteorological establishment due southwest from shoreline and approx. 200 yd out from shore. The area consists of a 20 ft diam circle which is marked in red paint.					
1961					
Oct 4	First ice forming.				
6	Lake half frozen over, ice remained hereafter.				
13	12.	30.	Trace		Surface smooth, few cracks
20	16.	41.	Trace		" " " "
27	19.	48.	Trace		" " no cracks
Nov 3	21.	53.	1.	3.	" " " "
10	24.	61.	1.	3.	" " few cracks
17	29.	74.	1.	3.	" " " "
24	33.	84.	1.	3.	" " " "
Dec 1	36.	91.	1.	3.	" " " "
8	39.	99.	1.	3.	" " " "
15	44.	112.	.5	1.	" " " "
22	47.	119.	.5	1.	" " " "
1962					
Jan 5	54.	137.	.5	1.	" " few narrow cracks
12	57.	145.	.5	1.	" " " " "
19	60.	152.	.5	1.	" " " " "
26	64.	163.	.5	1.	" " " " " No leads.
	There are at present two ice runway strips serviceable for ski- or wheel-equipped aircraft. Runway 11-29 7000 ft in length, 200 ft wide, compacted snow w/ bare patches of ice. Runway 17-35 built December 1961 4000 ft in length, 200 ft wide, compacted snow w/ bare patches of ice.				

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Baker Lake (cont'd):					
1962					
Feb 2	69.	175.	.5	1.	Surface smooth, few narrow cracks
9	73.	183.	1.	3.	" " " " "
16	76.	193.	1.	3.	" " " " "
23	78.	198.	.5	1.	" " " " " No leads.
Mar 2	80.	203.	1.	3.	Surface smooth, few narrow cracks
9	82.	208.	2.	5.	" " " " "
16	88.	224.	2.	5.	" " " " "
23	94.	239.	2.	5.	" " " " "
30	91.	231.	2.	5.	" " " " "
Apr 6	92.	234.	2.	5.	" " few cracks
13	92.	234.	1.	3.	" " narrow cracks
20	92.	234.	1.	3.	" " " " "
27	92.	234.	2.	5.	" " " " "
					No leads. Slight ridging southeast from measurement site. Runway serviceable for all types aircraft.
May 4	90.	231.	3.	8.	Surface smooth, few cracks
11	90.	231.	2.	5.	" " " "
18	92.	234.	1.	3.	" " " "
25	94.	239.	2.	5.	" " " "
					Snow becoming slushy on surface of lake.
Jun 1	94.	239.	1.	3.	Surface smooth, few narrow cracks
8	92.	234.	Trace		Surface candled, numerous cracks
9	Pools of water seeped into ice due to candling.				
11	Ice on airstrip, closed to all wheeled aircraft.				
15	87.	221.			Surface candled, numerous cracks
22	66.	168.			" " " "
29	57.	145.			Surface heavily candled, numerous cracks. Shore leads around northwest and west end of lake, 40 to 100 ft in width.
30	Ice surface moved to northwest shore of lake and ice was thereafter unsafe to walk upon.				
Jul 5	Breakup began.				
11	Northern half south bay open. Pack ice eight miles from shore.				
Barrow:	Measurements made 1/4 mile northwest of ANS Hospital 500 yd off beach.				
1961					
Dec 16	34.	86.	10.	25.	Surface smooth, no cracks. Avg snow depth 5 in. (13 cm). No leads. Ice measurement location is between pressure ridge 1 mile from beach. This will be the permanent site until breakup in June or July unless broken by an unusually bad storm. Part of the ice on this location is bare of snow. This pressure ridge drifted to shore during November and indications are that this ice first formed in September.
23	35.	89.	10.	25.	Surface smooth, no cracks. Avg snow depth 5 in. (13 cm).
30	37.	94.	10.	25.	" " " " " " " " " "
1962					
Jan 6	39.	99.	10.	25.	" " " " " " " " " " Same location in January as in December 1961.
13	43.	109.	11.	28.	Surface smooth, no cracks. Avg snow depth 5 in. (13 cm). Lead 500 yd northwest of ice hole.
20	45.	114.	4.	10.	Surface smooth, no cracks. Avg snow depth 5 in. (13 cm). Since the start this ice site has not moved and the sheet is not in layers.
27	51.	130.	4.	10.	Surface smooth, no cracks. Avg snow depth 5 in. (13 cm). Several holes bored on the same flat, ice measurements the same. The only question on this location is the actual date of first ice, which may have been days or a week later than on the lakes.
Feb 3	64.	163.			Snow cover over measurement bare, surface smooth, no cracks. Avg snow depth 4 in. (10 cm). Freeze up on this lake occurred September 28th. This is the lake from which the WB water supply is taken.
10	67.	170.			Snow cover over measurement bare, surface smooth, no cracks. Avg snow depth 4 in. (10 cm).
17	No transportation.		Note - - - - -		New measurement site starting in March. Measurements made on fresh water lake 200 - 250 yds south Pt. Barrow Air Force Terminal Building.
24	No transportation.				
Mar 10	50.	127.	3.	8.	Surface smooth, no cracks. Avg snow depth 4 in. (10 cm).
17	53.5	135.	3.5	9.	" " " " " " " 4.5 in. (11 cm).

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Barrow (cont'd):					
1962					
Mar 24	57.	145.	3.5	9.	Surface smooth, no cracks. Avg snow depth 4.5 in. (11 cm).
31	61.5	156.	4.	10.	" " " " " " " " " " " "
Apr 7	65.5	166.	3.5	9.	" " " " " " " 5 in. (13 cm).
14	69.	175.	3.5	9.	" " " " " " " " " " " "
21	71.5	182.	4.	10.	" " " " " " " " " " " "
28	70.	178.	4.	10.	" " " " " " " " " " " "
May 5	67.	170.	4.	10.	" " " " " " " " " " " "
12	63.5	161.	3.5	9.	" " " " " " " 4.5 in. (11 cm).
19	59.	150.	3.5	9.	" " " " " " " " " " " "
26	55.	140.	3.5	9.	" " " " " " " 4 in. (10 cm).
Jun 2	50.	127.	3.	8.	" " " " " " " 3 in. (8 cm).
					There is about 1 in. of water on the lake. The program is discontinued for the summer.
Barter Island:					Measurements made directly north of station: No specific distance during October due to slush, moving ice. During November 1961 through to January 1962 measurement site 3/4 to 1 mile north northwest of shoreline.
1961					
Oct 7	No ice.				
8	First ice observed, appearing in early afternoon.				
14	2.	5.			At least 10% of sea visible dotted w/ slush ice and drift ice.
21	3.	8.			Drift ice and slush.
28	4.	10.			Stiff winds, from east clockwise through west, kept ice loose and low. Too hazardous from 10 ft offshore, outwards, for measurement. Ice (predominantly slush ice) throughout month w/ several large leads 300 - 400 ft offshore, continually opening and closing toward last week of month.
Nov 4	4.5	11.	2.	5.	Drift ice and slush. Avg snow depth 3.5 in. (9 cm). Snow density .50.
11	4.5	11.	2.5	6.	Drift ice and slush. " " " 4 in. (10 cm). Snow density .65.
18	5.	13.	2.5	6.	Drift ice and slush. " " " 3 in. (8 cm). Snow density .65.
25	4.5	11.	3.	8.	Surface very lightly ridged. Avg snow depth 2.5 in. (6 cm). Snow density .50.
30	5.5	14.	3.5	9.	Surface lightly ridged, numerous cracks. Avg snow depth 3.5 in. (9 cm). Snow density .40. Area northwest to northeast of shore up to 1 mile out spotted by soft ice, believed thin and forming over an ex-lead. Occasional leads opened up throughout month but very active from November 18 to 28 w/ 6 good sized leads north of station (1) lead 1/4 mile out, estimated 300 yd long (2) and (3) leads 3/8 to 1/2 mile out, several miles long, (4) and (5) leads 3/4 mile out and 10 miles long (6) lead 1 to 2 miles out 100 - 200 yd wide, over 10 miles long. Moderate snow drifts close to shore and very light 1/4 mile out and further; highest obs snow drift 2 ft in height. Ice bare in numerous pond-like spots. Footing very treacherous 1/4 mile out. Measurements from November 18 through November 30 estimated since they were measured through cracked ice to water below without need of drill in 6 separate spots along 200 yd line 1/4 mile out.
Dec 2	6.	15.	3.5	9.	Surface lightly ridged, numerous leads. Avg snow depth 3.5 in. (9 cm). Snow density .40.
9	8.	20.	4.	10.	Surface lightly hummocked, few cracks. Avg snow depth 3.5 in. (9 cm). Snow density .40. Numerous small leads in view west northwest to north northeast offshore between December 1 and 5. Considerable shifting in ice 3/4 mile out, no noticeable drift except 1 mile out w/ drift eastwards estimated 5 knots.
16	9.5	24.	4.	10.	Surface moderately hummocked, few cracks. Avg snow depth 4 in. (10 cm). Snow density .35.
23	10.	25.	4.5	11.	Surface lightly hummocked, numerous cracks. Avg snow depth 5 in. (13 cm). Snow density .30. Between December 9 and 18 several small leads noted approx. 2 to 3 miles out west northwest to north northeast offshore.
30	12.5	32.	4.5	11.	Surface lightly hummocked, few cracks. Avg snow depth 4.5 in. (11 cm). Snow density .30. Between December 22 and 28, 2 large leads appeared, occasionally slushing, approx. 1 1/4 mile out, 3 to 4 miles long and estimated 80 yd across.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Barter Island (cont'd):					
1961					
Dec 30					Auger used throughout month, and drilling was not difficult. Highest snow drift noted was 2 1/2 ft high in spots. Numerous gray, smooth patches noted west northwest offshore 1/2 mile and further out, suggesting the appearance of old leads and thin ice. Heavy drift-ice movement detected toward east December 17 - 19 at distances of 3 or more miles from shore. Ice thickness 1/4 mile from shore approx. 24 in.
1962					
Jan 6	14.	36.	5.5	14.	Surface moderately ridged, numerous cracks. Avg snow depth 5.5 (14 cm). Snow density .30.
13	16.	41.	5.5	14.	Surface moderately ridged, cracks closed. Avg snow depth 6 in. (15 cm). Snow density .35.
20	18.	46.	8.	20.	Surface moderately ridged, numerous narrow cracks (shifting ice). Avg snow depth 18 in. (46 cm). Snow density .40.
27	20.5	52.	15.	38.	Surface moderately ridged, numerous leads, footing unstable. Avg snow depth 26 in. (66 cm). Snow density .37.
31	21.	53.	18.	46.	Surface moderately ridged, numerous large cracks. Avg snow depth 22 in. (56 cm). Snow density .35. Estimates in ice thickness refer to measurements made within 1/2 mile of shoreline. Measurement on 13th made 3/4 mile out. Apparently, numerous large and small leads have been obs by aircraft pilots, Eskimos and other flying personnel here throughout the month. Prominent lead 10 - 15 miles long, 4 miles out and offshore, approx. northwest of station, existing most of month. On the 6th, 20th, and 31st footing was too unstable for measuring 3/4 miles out and shifting ice was felt little over 1/2 mile out. Temp felt considerably warmer over sea ice than at station. On 27th air temp within 1 hr walk of station measured 10 deg warmer. Considerable cracks noted over entire area within 1/4 mile of obs point. Wind speed considerably higher over sea ice area than near station on 6th and 13th.
Feb 3	32.5	83.	26.	66.	Surface smooth, no cracks. Avg snow depth 27 in. (69 cm).
10	36.	91.	20.	51.	" " " " " " " 21 in. (53 cm).
17	38.	97.	20.	51.	" " " " " " " 18 in. (46 cm).
24	37.5	95.	16.	41.	" " " " " " " 20 in. (51 cm).
					Occasional large leads noted over sea ice 2 miles northeast of station. Many other large leads 5 miles out extending northwest through east, obs by aircraft.
Mar 1	38.5	98.	15.	38.	Surface smooth, no cracks
7	40.7	102.	15.	38.	" " " "
14	43.	109.	17.	43.	" " " "
21	47.	119.	14.	36.	" " " "
28	54.	137.	11.	28.	" " " "
					Leads reported by aircraft 2 to 5 miles northwest to northeast of the station. Sea ice surface light to moderate ridging from shore to horizon. **Avg depth of snow on** lake not obtainable because a considerable amount of snow has drifted leaving many bare spots. Drifts up to 3 ft.
Apr 7	56.5	142.	10.	25.	Surface smooth, no cracks. Avg snow depth 10 in. (25 cm).
14	58.	147.	10.	25.	" " " " " " " 10 in. (25 cm).
21	58.	147.	9.	23.	" " " " " " " 9 in. (23 cm).
28	58.5	149.	9.	23.	" " " " " " " 9 in. (23 cm).
					Leads and some open sea water reported by aircraft 2 to 5 miles from shore northwest to northeast of station. Sea ice surface light to moderate ridging. There is approx. 1 to 1 1/2 ft of water below the ice in the lake.
May 5	57.	145.	7.	18.	Surface smooth, no cracks. Avg snow depth 7 in. (18 cm).
12	55.5	141.	7.	18.	" " " " " " " 6 in. (15 cm).
19	53.	135.	2.	5.	" " " " " " " 2 in. (5 cm).
26	49.5	126.	Trace		" " " " Trace of snow on ice.
					Large area of open sea water reported approx. 5 miles offshore to the northwest through northeast of the island. Beyond this point there are intermittent leads and open water for a considerable distance out. There is approx. 2 ft of water under the ice of the fresh water lake.
Bethel: Measurements made immediately in front of BIA property.					
1961					
Oct 12					Slush ice became jammed and frozen on the Kuskokwim on about this date.
28	7.	18.			Surface smooth. The test site has remained w/ an ice cover since; however, a subsequent thaw cleared most of the ice above and below the measurement site and the river has been in the process of refreezing since.

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Bethel (cont'd):					
1961					
Nov 4	11.5	29.	2.	5.	Surface smooth. Avg snow depth 2 in. (5 cm), wet and heavy.
11	12.	30.			" "
18	13.5	34.			" " Occasional drift.
25	14.	36.	4.	10.	" " Avg snow depth 4 in. (10 cm). No leads or cracks visible during month.
Dec 2	20.5	52.	6.	15.	Surface smooth. Avg snow depth 6 in. (15 cm).
9	26.	66.	2.	5.	" " " " " 2 in. (5 cm), heavy.
16	35.	89.			" " Some snow drifts. Some ice thickening caused by thawing conditions followed by freezing of water on top of the ice.
23	36.	91.			Surface smooth.
30	37.	94.	4.	10.	" " No leads or cracks visible during month.
1962					
Jan 6	40.5	103.			Surface smooth
13	43.5	110.			" "
19	44.	112.			" "
23	45.5	116.	2.	5.	" " This reading was made at the request of a representative from the Corp of Engineers and supervised by the Chief of Weather Bureau at Bethel. Avg snow depth 4 in. (10 cm), light.
27	46.	117.	2.	5.	Surface smooth. Avg snow depth 4 in. (10 cm), light. No leads or cracks visible during month.
Feb 3	46.	118.	2.	5.	Surface smooth, snow cover hard packed.
12	48.	122.	8.	20.	" " snow depth 2 in. (5 cm), packed, 6 in. (15 cm), loose. On request of weather bureau measurements now are made on Mondays to conform w/ regional pattern.
19	49.5	126.	6.	15.	Surface smooth, snow cover crystallized.
26	50.	127.			No leads or cracks visible during month.
Mar 5	53.	135.	3.	8.	Surface smooth. Avg snow depth 3 in. (8 cm), light.
12	54.5	138.			" " " " " 1 in. (3 cm), frozen slush.
19	56.	142.			" "
26	56.5	144.	2.	5.	" " " " " 10 in. (25 cm), packed. No leads or cracks visible during March.
Apr 2	54.5	138.	4.	10.	Surface smooth. Avg snow depth 4 in. (10 cm), slush.
9	52.	132.			No snow on surface. Top 15 in. (38 cm) of ice extensively honeycombed.
16	54.5	138.			No snow on surface. Cold weather has solidified surface, though top 15 in. (38 cm) still porous.
23	54.	137.			No snow on surface. Weather stable, comments of April 16 apply.
30	50.5	128.			No snow on surface. Ice extensively honeycombed. No leads or cracks visible during month.
May 7	40.	102.			Surface smooth, no cracks. No snow on surface. Top 12 to 18 in. (30 to 46 cm) extensively honeycombed and composed of alternate ice and water layers due to its original overflow formation.
15	36.5	93.			Surface smooth, no cracks. No snow on surface. Top 10 in. (25 cm) porous. Aircraft have been or are in the process of being moved off the ice. Water level has risen to normal summer height and is free of shore anchor. Obs waded to hip-boot height to get on ice. This will probably be the last ice measurement. No leads visible.
22	Surface smooth, no snow on surface. No leads visible.				
25	Surface slushy, shore ice gone.				
26	Surface jammed ice, numerous cracks				
27	" " " " "				
28	" " " " "				
29	Surface free. Only ice on bank and shore remain.				
Brochet: Measurements made on Reindeer Lake, part known as Brochet Bay, 135 deg true from station, 350 yd from shore. Station located approx. 6 miles from river.					
1961					
Oct 25	Freeze up period October 20 - 25.				
27	5.	13.	3.	8.	Surface smooth, no cracks
Nov 17	12.	30.	5.	13.	Surface lightly ridged, no cracks. First Cessna landing since freeze up.
24	16.	41.	5.	13.	Surface lightly ridged, no cracks

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Brochet (cont'd):					
1961					
Dec 1	16.	41.	6.	15.	Surface rough, no cracks
8	19.	48.	7.	18.	" " " "
15	19.	48.	8.	20.	" " " "
29	20.	51.	13.	33.	" " " "
1962					
Jan 5	24.	61.	13.	33.	" " " "
12	26.	66.	14.	36.	" " " "
19	28.	71.	14.	36.	" " " "
26	28.	74.	16.	41.	" " " "
Feb 2	29.	74.	16.	41.	" " " "
9	32.	81.	16.	41.	" " " "
16	34.	86.	16.	41.	" " " "
23	37.	94.	16.	41.	" " " "
					Few large cracks reported in main portion of lake.
Mar 2	35.	89.	16.	41.	Surface rough, no cracks
10	36.	91.	20.	51.	" " " "
23	36.	91.	27.	69.	" " " "
Apr 6	37.	94.	22.	56.	" " few cracks
22	38.	97.	16.	41.	" " " "
27	36.	91.	14.	36.	" " " "
May 4	37.	94.	10.	25.	Surface ridged, few cracks
11	38.	97.	6.	15.	" " " "
18	34.	86.	2.	5.	" " " "
22	Ice slush covered from May 1 - 22.				
26	31.	79.			Surface candled, few cracks. Cracks in ice all month, more towards end of month. Open water appearing along edges of lake. Small bays and narrows presently open.
Jun 1	32.	81.			Surface candled, few cracks
3	Water along edges of lake extending to 50 ft.				
5	Buchanans Lake open.				
6	Linklater Bay open.				
7	Narrows on Brochet Bay to left of settlement open.				
9	Brochet Bay completely free of ice.				
Cambridge Bay: Measurements made approx. 100 yd southeast of dock on town side of bay.					
1961					
Oct 6	9.	23.	1.	3.	Surface smooth, few cracks
13	14.	36.	1.	3.	" " " "
19	18.	46.	1.	3.	" " " "
					Few small cracks along shore.
28	22.	56.	2,	5.	Surface smooth, few cracks Snow depth varies from 4 to 5 in. in drifts to few bare spots.
Nov 3	22.	56.			Snow depth varies from 4 to 6 in. (10 to 15 cm). Surface smooth few cracks.
9	26.	66.	6.	15.	Surface smooth, numerous cracks
16	26.	66.	7.	18.	" " " "
24	27.	69.	8.	20.	" " " "
Dec 2	26.	66.	8.	20.	" " " "
7	26.	66.	8.	20.	" " " "
15	26.	66.	8.	20.	" " " "
22	28.	71.	8.	20.	" " no cracks
1962					
Jan 2	36.	91.	8.	20.	" " numerous cracks. The ice measurement for December 29 was delayed due to severe snow storm. Several large cracks along shore line width varying from 2 to 6 in.
6	43.	109.	8.	20.	Surface smooth, numerous cracks.
11	44.	112.	8.	20.	" " " "
18	45.	114.	8.	20.	" " " "
25	47.	119.	8.	20.	" " " "
Feb 1	49.	124.	8.	20.	" " " "
8	51.	130.	8.	20.	" " " "
15	54.	137.	8.	20.	" " " "
23	57.	145.	8.	20.	" " " "

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Cambridge Bay (cont'd):					
1962					
Mar 2	59.	150.	8.	20.	Surface smooth, numerous cracks
8	62.	157.	8.	20.	" " " "
15	63.	160.	8.	20.	" " " "
23	63.	160.	8.	20.	" " " "
29	66.	168.	8.	20.	" " " "
Apr 5	68.	173.	8.	20.	" " " "
12	68.	173.	8.	20.	" " " "
19	69.	175.	9.	20.	" " " "
26	71.	180.	8.	20.	" " " "
					Ice beginning to melt. Water starting to saturate ice below surface.
May 3	72.	183.	8.	20.	Surface smooth, numerous cracks Several large tidal cracks. Ice becoming saturated w/ water.
10	72.	183.	8.	20.	Surface smooth, numerous cracks
17	74.	188.	8.	20.	" " " "
24	74.	188.	7.	18.	" " " "
31	74.	188.	6.	15.	" " " "
Jun 7	76.	193.	3.	8.	" " " "
14	64.	163.	Trace		Surface lightly ridged, numerous cracks
21	51.	130.	Trace		" " " " "
					Surface puddled to depth of 18 in. Large cracks to 23 in. in width. Ice saturated throughout. Water has replaced ice along shore, to an estimated depth of 24 in. Access to measurement site becoming unsafe.
Jul 1	No measurement due to breakup.				
Cape Atholl, Site 1:					
1961					
Oct 5	Belts of slush ice of unknown thickness appeared, covering about 10% of the Quaratit Bay area.				
13	Solid ice about 2 in. thick formed, extending from the beach 150 yd seaward. Lily pads of unknown thickness extended another 200 yd seaward.				
24	Ice coverage to the horizon (height of eye about 200 ft above sea level) became complete except for numerous leads. No areas of open water were visible. An accurate determination of ice thickness cannot be made until the ice becomes safe for travel. Loran signal propagation conditions indicate that most of Baffin Bay remains open water.				
Nov 15	The various leads reported on October 24 closed by this date.				
24	22.	56.	2.	5.	
30	Only one ice measurement was taken due to the thin ice in the vicinity. Numerous icebergs in the bay continually "working", (i.e., rising and falling w/ the tide) through approx. 3 ft from high to low water. Loran conditions indicate that Central Baffin Bay has had considerable ice coverage since about November 20.				
Dec 1	27.8	71.			Avg snow depth 4.2 in. (10 cm).
8	28.5	72.			" " " 4.2 in. (10 cm).
15	30.	76.			" " " 4.2 in. (10 cm).
22	33.5	85.			" " " 4.2 in. (10 cm).
29	35.	89.			" " " 4.2 in. (10 cm).
1962					
Feb 2	43.	109.	2.	5.	
9	45.2	114.	3.	8.	
16	48.	122.	2.	5.	
23	50.	127.	4.	10.	Ice condition "hard" in all instances.
Mar 4	53.	135.	2.	5.	
9	54.	137.	2.	5.	
16	56.	142.	2.	5.	
23	58.	147.	4.	10.	
30	61.	157.	4.	10.	Ice condition "hard" in all instances.
Apr 6	62.	157.			
13	60.	154.			
20	62.	157.			
27	63.	160.			Ice condition "hard" in all instances.
May 4	63.8	163.			Ice condition "hard".
11	The underside of the ice became quite soft making it impossible to drill through. Open water became visible 5 miles offshore during the first week of the month.				
18	Strong northerly winds and above freezing temp opened a number of leads during the first half of the month. Further deterioration prevented any readings after May 18.				
31	Open water 2 miles from shore.				

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Cape Atholl, Site 2:					
1961					
Nov 24	22.	56.	2.	5.	
Dec 1	27.2	69.			Avg snow depth 4.2 in. (10 cm).
8	27.5	70.			" " " 4.2 in. (10 cm).
15	28.8	73.			" " " 4.2 in. (10 cm).
22	33.	84.			" " " 4.2 in. (10 cm).
29	35.	89.			" " " 4.2 in. (10 cm).
1962					
Feb 2	43.	109.	1.	3.	
9	45.5	116.	4.	10.	
16	49.	124.	2.	5.	
23	50.	127.	3.	8.	
Mar 4	54.	137.	.5	1.	
9	55.	140.	.5	1.	
16	56.5	144.	1.	3.	
23	59.	150.	2.	5.	
30	63.	160.	2.	5.	
Apr 6	63.	160.			
11	61.5	156.			
20	62.	157.			
27	64.	163.			
May 4	64.5	164.			
11	The underside of the ice became quite soft making it impossible to drill through.				
18	64.	163.			
Cape Atholl, Site 3:					
1961					
Nov 24	20.	51.	2.	5.	
Dec 1	26.2	66.			Avg snow depth 4.2 in. (10 cm).
8	27.	69.			" " " 4.2 in. (10 cm).
15	27.5	70.			" " " 4.2 in. (10 cm).
22	30.	76.			" " " 4.2 in. (10 cm).
29	34.5	88.			" " " 4.2 in. (10 cm).
1962					
Feb 2	42.	107.	1.	3.	
9	45.5	116.	3.	8.	
16	48.	122.	2.	5.	
23	51.	130.	2.	5.	
Mar 4	53.	135.	.5	1.	
9	54.	137.	.5	1.	
16	57.	145.	.5	1.	
23	58.	147.	1.	3.	
30	62.	157.	2.	5.	
Apr 6	62.	157.			
13	60.5	154.			
20	61.5	156.			
27	64.	163.			
May 4	63.5	161.			
11	63.	160.			
18	60.	152.			
Cape Atholl, Site 4:					
1961					
Nov 24	18.8	48.	2.	5.	
Dec 8	23.5	60.			Avg snow depth 4.2 in. (10 cm).
15	24.5	62.			" " " 4.2 in. (10 cm).
22	27.5	70.			" " " 4.2 in. (10 cm).
29	30.8	78.			" " " 4.2 in. (10 cm).
1962					
Feb 2	40.5	103.	1.	3.	
9	41.5	105.	3.	5.	
16	42.	107.	2.	5.	
23	42.	107.	2.	5.	Ice condition soft.
Mar 4	49.	124.	2.	5.	
9	49.	124.	2.	5.	
16	49.5	126.	4.	10.	

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Cape Atholl, Site 4 (cont'd):					
1962					
Mar 23	52.	132.	6.	15.	
30	57.	145.	4.	10.	
Apr 6	52.	132.			
13	49.8	127.			
20	53.	135.			
May 4	55.5	141.			
11	53.5	136.			
18	52.	132.			
Cape Parry:	Measurements made on Amundsen Gulf 1 mile due west of Federal Electric Company's terminal building, approx. 500 ft from shore.				
1961					
Oct 18	Franklin Bay frozen.				
20	19.	48.	.5	1.	Surface moderately ridged, few cracks Open water obs all quadrants in Amundsen Gulf, numerous growlers
27	19.	48.	1.	3.	Surface moderately ridged, no cracks
Nov 3	15.	38.	8.	20.	" " " " " Wide lead approx. 3 miles long running southwest-northeasterly direction.
10	19.	48.	5.	13.	Surface moderately ridged, few cracks
17	29.	74.	8.	20.	" " " " "
24	29.	74.	9.	23.	" " " " " Lead 1 mile wide, 5 miles long running in an east - west direction.
30	Pilot reports indicate extensive open water in Amundsen Gulf leading from the Beaufort Sea to a few miles from Cape Parry shore.				
Dec 1	30.	76.	11.	28.	Surface moderately ridged 15 to 20 in. (38 to 51 cm) snow drifts, surface hard packed.
8	40.	102.	5.	13.	Snow cover hard packed. Surface moderately ridged, few cracks
15	46.	117.	8.	20.	" " " " " " " " " "
22	46.	117.	7.	18.	" " " " " " " " no cracks
1962					
Jan 5	52.	132.	6.	15.	Surface moderately ridged, few cracks Extensive body of water obs in Amundsen Gulf north of obs site.
12	52.	132.	8.	20.	Surface lightly ridged, few cracks
19	54.	137.	10.	25.	Surface moderately ridged, no cracks
26	56.	142.	10.	25.	" " " few cracks
Feb 2	57.	145.	10.	25.	Surface lightly ridged, few cracks
9	59.	150.	10.	25.	Surface moderately ridged, few small cracks
16	61.	155.	12.	30.	Surface heavily ridged, numerous cracks Snow hard packed. Strong winds have caused the ice to break up. A large body of open water north in Amundsen Gulf has been obs from the 13th, to this date.
23	75.	191.	12.	30.	Surface heavily ridged, numerous cracks
Mar 2	78.	198.	15.	38.	" " " " "
9	79.	201.	17.	43.	" " " few cracks
16	82.	208.	16.	41.	" " " " "
23	82.	208.	16.	41.	" " " many cracks
30	88.	208.	18.	46.	" " " numerous cracks
Apr 6	88.	224.	14.	36.	Surface moderately ridged, few cracks
13	89.	226.	10.	20.	" " " " "
14	Lead running east - west, north of site.				
20	89.	226.	11.	28.	" " " " "
27	88.	224.	10.	20.	" " " " "
28	10 mile lead running east - west. Pilot reports large body of open water northwest of station.				
May 4	80.	203.	10.	25.	Snow hard packed, surface lightly ridged, numerous cracks
11	78.	198.	12.	30.	" " " " " " " "
18	75.	191.	9.	23.	" " " " " " " "
25	72.	183.	8.	20.	" " " " " " " " Extensive open water obs in Amundsen Gulf from May 20th on. Water on ice, all quads, including over the obs site.
Cartwright:	Measurements made on Sandwich Bay, 300 - 350 yd south from Marine Radio Masts.				
1962					
Jan 5	5.	13.	1.	3.	Surface moderately ridged, no cracks Freeze-up around first of January.
12	10.	25.	3.	8.	Surface moderately ridged, no cracks

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Cartwright (cont'd):					
1962					
Jan 19	18.	46.	5.	13.	Surface lightly ridged, no cracks
26	19.	48.	5.	13.	" " " " "
					Leads of open water northwest of Sandwich Bay.
Feb 2	20.	51.	6.	15.	Surface lightly ridged, no cracks
9	23.	58.	5.	13.	" " " " "
16	24.	61.	6.	15.	" " " " "
23	30.	76.	4.	10.	" moderately ridged, no cracks
					1 small lead northwest of radio station.
Mar 2	32.	81.	4.	10.	Surface moderately ridged, no cracks
9	29.	74.	3.	8.	" lightly ridged, no cracks
18	30.	76.	6.	15.	" " " " "
23	32.	81.	6.	15.	" " " " "
30	32.	81.	8.	20.	" " "
Apr 6	33.	84.	.5	1.	" " " few cracks
13	34.	86.	14.	36.	" " " no cracks
20	40.	102.	8.	20.	" " " few cracks
27	38.	97.	7.	18.	" " " " "
May 4	40.	102.	6.	15.	" " " " "
11	42.	107.	3.	8.	" " " " "
18	38.	97.	2.	5.	" " " many cracks
25	32.	81.			" " " numerous cracks
Chesterfield Inlet:	Measurements made in Spurrell Inlet on Hudson Bay, approx. 1500 ft from Operations Building.				
1961					
Nov 18	3.5	9.	1.	3.	Surface lightly ridged, no cracks
					First measurement of season.
24	5.	13.	1.	3.	Surface lightly ridged, no cracks
Dec 1	7.	18.	4.	10.	Surface smooth, no cracks
8	8.	20.	9.	23.	" " " "
15	13.	33.	10.	25.	" " " "
22	15.	38.	10.	25.	" " " "
29	19.	48.	12.	30.	" " " "
1962					
Jan 5	22.	56.	7.	18.	" " " "
12	26.	66.	7.	18.	" " " "
19	28.	71.	5.	13.	" " " "
26	30.	76.	8.	20.	" " " "
					Ice hummocked around shore.
Feb 2	35.	89.	3.	8.	Surface smooth, no cracks
9	40.	102.	2.	5.	" " " "
16	43.	109.	3.	8.	" " " "
23	45.	114.	4.	10.	" " " "
					Ice hummocks around shore.
Mar 16	54.	137.	7.	18.	Surface smooth, no cracks
23	55.	140.	8.	20.	" " " "
30	56.	142.	7.	18.	" " " "
Apr 6	57.	145.	7.	18.	" " " "
13	58.	147.	9.	23.	" " " "
20	59.	150.	10.	25.	" " " "
27	60.	152.	8.	20.	" " " "
May 11	61.	155.	12.	30.	" " " "
14	60.	152.	13.	33.	" " " "
18	61.	155.	14.	36.	" " " "
25	61.	155.	20.	51.	" " " "
					Ice hummocks around shore.
Jun 1	62.5	159.	24.	61.	Surface smooth, no cracks
8	63.	160.	15.	38.	" " " "
15	63.	160.			" " " "
22	59.	150.			" " numerous cracks
29	45.	114.			" " " "

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Churchill, Site 1: Measurements made off Farnsworth Lake jetty, water depth 54 in.					
1961					
Oct 9	Lake 90% covered w/ ice.				
10	All ice cleared from lake.				
11	Lake completely covered.				
18	5.	13.			
30	6.	15.	6.	15.	
31	Ski-equipped Norseman took off from Landing lake.				
Nov 21	20.	51.	21.	53.	
28	24.	61.	24.	61.	
Dec 4	27.	69.	24.	61.	
8	27.	69.	45.	114.	
18	29.	74.	42.	107.	
27	28.	71.	43.	109.	
1962					
Jan 3	28.	71.	50.	127.	
9	28.	71.	56.	142.	
17	28.	71.	54.	137.	
25	29.	74.	56.	142.	
29	29.	74.	57.	145.	
Feb 6	30.	76.	54.	137.	
16	31.	79.	54.	137.	
23	32.	81.	56.	142.	
Mar 1	34.	86.	56.	142.	
14	37.	94.	58.	147.	
21	38.	97.	54.	137.	
Churchill, Site 2: Measurements made center of Farnsworth Lake approx. 1/2 mile from jetty, water depth 78 in.					
1961					
Nov 21	12.	30.			Surface slushy
28	13.	33.			" "
Dec 4	24.	61.	5.	13.	
18	No transportation.				
27	31.	79.	5.	13.	
1962					
Jan 3	33.	84.	5.	13.	
9	34.	86.	8.	20.	
17	36.	91.	6.	15.	
25	38.	97.	5.	13.	
29	40.	102.	5.	13.	
Feb 6	43.	109.	5.	13.	
16	45.	114.	5.	13.	
23	47.	119.	5.	13.	
Mar 1	49.	124.	6.	15.	
14	51.	130.	9.	23.	
21	51.	130.	10.	25.	
Churchill, Site 3: Measurements made on Churchill River, water depth 80 in. off Drachm Pt.					
1962					
Jan 12	33.	84.			
Feb 7	37.	94.			
Mar 15	44.	112.			
Churchill, Site 4: Measurements made on mouth of Churchill River, water depth (tidal) 30 ft.					
1962					
Jan 23	44.	112.			
Feb 27	56.	142.			
Mar 5	60.	152.			
14	60.	152.			
19	62.	157.			
27	67.	170.			

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Churchill, Site 5: Measurements made on Button Bay, water depth (tidal) 30 ft.					
1962					
Jan 23	32.	81.			
Feb 26	50.	127.			
Mar 5	53.	135.			
14	55.	140.			
19	55.	140.			
27	57.	145.			
Clyde River: Measurements made 150 yd from shore on Patrica Bay, 250 yd west of living quarters.					
1961					
Oct 13	Slush and brash beached and pushed ashore by wind and waves along head of Patrica Bay.				
22	Head of bay frozen over for approx. 2 miles w/ small patches open water.				
27	7.	18.			Surface lightly ridged, few cracks Ice extends 5 miles up bay.
Nov 3	13.	33.	1.	3.	Surface smooth, few cracks
10	16.	41.	2.	5.	" " no cracks Light pressure ridging along shoreline.
17	20.	51.	2.	5.	Surface smooth, few cracks
24	24.	61.	1.	3.	" " " " Light pressure ridging along shoreline.
Dec 1	28.	71.	1.	3.	Surface smooth, no cracks
8	32.	81.	1.	3.	Surface lightly ridged, no cracks
15	36.	91.	2.	5.	" " " " "
22	40.	102.	2.	5.	" " " " "
29	42.	107.	2.	5.	
1962					
Jan 5	43.	109.	3.	8.	No cracks
12	45.	114.	4.	10.	" "
19	48.	122.	4.	10.	" "
26	50.	127.	6.	15.	" "
Feb 2	51.	130.	8.	20.	Surface smooth, no cracks
9	53.	135.	10.	25.	Surface lightly ridged, no cracks
16	54.	137.	12.	30.	" " " " "
23	55.	140.	12.	30.	" " " " "
Mar 2	56.	142.	16.	41.	" " " " "
9	57.	145.	16.	41.	" " " " "
16	59.	150.	16.	41.	" " " " "
23	60.	152.	16.	41.	" " " " "
30	61.	155.	17.	43.	" " " " "
Apr 6	62.	157.	16.	41.	Surface moderately ridged, no cracks
13	62.	157.	14.	36.	" " " " "
20	63.	160.	14.	36.	" " " " "
27	63.	160.	14.	36.	" " " " "
May 4	64.	163.	16.	41.	Surface lightly ridged, no cracks
11	62.	157.	19.	48.	" " " " "
18	62.	157.	19.	48.	" " " " "
25	61.	155.	20.	51.	" " " " " Cracks along shoreline due to tide. Surface ice along shoreline rough due to tides and pressure.
Jun 1	61.	155.	21.	53.	Surface lightly ridged, no cracks
8	62.	157.	22.	56.	" " " tidal cracks, 2 in. surface water.
15	63.	160.	16.	41.	Tidal cracks
22	64.	163.	6.	15.	Shore cracks
29	61.	155.	6.	15.	Snow cover slushy, surface puddled, shore cracks
Jul 6	57.	145.			Surface puddled, cracks along shore.
13	47.	119.			Cracks along shore.
20	35.	89.			" " "
Coppermine: Measurements made on Coppermine River, approx. 100 yd from Department of Transport.					
1961					
Oct 15	River almost completely frozen several times, but would break up and drift out.				
16	Completely frozen over.				
20	3.	8.			Surface smooth, no cracks
23	First sign of ice.				
27	11.	28.			" " " "

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Coppermine (cont'd):					
1961					
Nov 3	13.	33.	2.	5.	Surface smooth, no cracks
10	18.	46.	2.	5.	" " " "
17	21.	53.	4.	10.	" " " "
Dec 1	28.	71.	5.	13.	" " " "
8	34.	86.	4.	10.	" " " "
15	38.	97.	4.	10.	" " " "
22	42.	107.	3.	8.	" " " "
29	44.	112.	3.	8.	" " " "
1962					
Jan 5	46.	117.	3.	8.	" " " "
12	49.	124.	5.	13.	" " " "
19	51.	130.	5.	13.	" " " "
26	54.	137.	6.	15.	" " " "
Feb 2	55.	140.	6.	15.	" " " "
9	59.	150.	6.	15.	" " " "
16	62.	157.	6.	15.	" " " "
23	64.	163.	5.	13.	" " " "
Mar 2	66.	168.	5.	13.	" " " "
9	66.	168.	6.	15.	" " " "
16	67.	170.	6.	15.	" " " "
23	68.	173.	6.	15.	" " " "
30	68.	173.	6.	15.	" " " "
Apr 6	70.	178.	6.	15.	" " " "
13	73.	185.	6.	15.	" " " "
20	74.	188.	9.	23.	" " " "
27	76.	193.	10.	25.	" " " "
May 4	77.	196.	10.	25.	" " " "
11	79.	196.	10.	25.	" " " "
18	80.	203.	8.	20.	" " " "
25	81.	206.	6.	15.	" " " "
31	81.	206.	4.	10.	" " " "
					Overflow from up river covering river ice. Last report of season.
Coral Harbour: Measurements made 1/2 mile from Eskimo settlement southward into South Bay; see sketch map.					
1961					
Oct 13	Ice forming along shore broken up daily.				
20	Patches of ice extend 500 yd from shore, no continuous layer.				
27	Drift ice completely covers bay to horizon. Ice not considered safe, therefore, no measurements taken.				
Nov 3	New ice extends from shore to large open lead about 400 yd offshore. Not yet considered safe for measurements. Considerable piling of ice blocks on the beach by tidal and wind action.				
10	13.	33.	1.	3.	Surface smooth, few cracks
17	16.	41.	1.	3.	" " no cracks
24	18.	46.	5.	13.	" " " "
Dec 1	21.	53.	6.	15.	No cracks
8	Missing due to impassable roads.				
15	23.	58.	10.	25.	Surface lightly ridged, no cracks
22	23.	58.	12.	30.	" " " few cracks
29	27.	69.	6.	15.	" " " " "
1962					
Jan 5	27.	69.	10.	25.	" " " " "
12	30.	76.	10.	25.	" " " " "
19	32.	81.	10.	25.	" " " " "
26	34.	86.	10.	25.	" " " " "
					No open leads visible. Snow cover very hard and crisp, moderately ridged along shoreline, cracks gradually becoming wider among ridges.
Feb 2	38.	97.	12.	30.	Surface lightly ridged, few cracks
9	45.	114.	8.	20.	" " " " "
16	45.5	116.	10.	25.	" " " " "
23	48.	122.	10.	25.	" " " " "
					No leads visible. Snow cover very hard and crisp, moderately ridged along shoreline, few cracks, showing little change during month.

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Coral Harbour (cont'd):					
1962					
Mar 2	48.	122.	10.	25.	Surface lightly ridged, few cracks
9	49.	124.	12.	30.	" " " " "
16	53.	135.	10.	25.	" " " " "
23	50.	127.	13.	33.	" " " " "
30	55.	140.	11.	28.	" " " " "
Apr 6	54.	137.	11.	28.	" " " " "
13	51.5	131.	12.	30.	" " " " "
20	53.	135.	14.	36.	" " " " "
27	59.5	151.	8.	20.	" " " " "
May 4	61.5	155.	9.	23.	" " " " "
11	62.	157.	8.	20.	" " " " "
18	55.	140.	15.	38.	" " " " "
25	60.	152.	15.	38.	" " " " "
Jun 1	64.	163.	10.	25.	" " " " "
8	63.	160.	6.	15.	" " " numerous cracks
15	58.	147.			Snow cover, patchy. Numerous cracks. 4 to 6 in. of water over the ice.
22	54.	137.			Numerous cracks. 75% water-covered.
30	Open water visible.				
Jul 5	Shoreline break-up 100 yd wide. Channels of open water.				

Ennadai Lake: Measurements made on Ennadai Lake 270 deg true from station 100 yd from shore. Station is located 100 yd from lake.

1961					
Oct 7	Lake commenced freezing.				
13	8.	20.			Surface lightly ridged, few cracks
20	11.	28.			" " " " "
27	14.	36.	Trace		" " " " "
Nov 3	18.	46.	1.	3.	" " " " "
10	21.	53.	2.	5.	" " "
17	22.	56.	3.	8.	" " "
24	24.	61.	5.	13.	" " "
Dec 1	26.	66.	5.	13.	" " "
8	35.	89.	8.	20.	" " "
15	36.	91.	8.	20.	" moderately ridged
23	37.	94.	10.	25.	" " "
29	37.	94.	14.	36.	" heavily ridged
1962					
Jan 5	37.	94.	14.	36.	" " "
12	37.	94.	14.	36.	" lightly "
18	37.	94.	14.	36.	" " "
26	37.	94.	14.	36.	" " "
Feb 2	37.	94.	17.	43.	Surface moderately ridged, few cracks
9	37.	94.	17.	43.	" " " " "
16	42.	107.	19.	48.	" " " " "
23	42.	107.	19.	48.	" " "
Mar 2	44.	112.	19.	48.	" " "
9	44.	112.	20.	51.	" " "
16	44.	112.	20.	51.	" " "
23	44.	112.	21.	53.	" " "
30	46.	117.	27.	69.	" " "
Apr 6	46.	117.	27.	69.	" " "
13	47.	119.	31.	79.	" " "
20	47.	119.	31.	79.	" " "
27	48.	122.	31.	79.	Surface lightly ridged
May 18	48.	122.	16.	41.	Surface lightly ridged. No reports until May 18.
27	48.	122.	12.	30.	" " "
Jun 1	48.	122.	12.	30.	" " "
8	47.	119.			Surface smooth, numerous cracks
15	36.	91.			" " " "
22	24.	61.			" " " "
27	18.	46.			" " " "
Jul 8	Lake free of ice.				

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Eureka: Measurements made on Slidre Fiord.					
1961					
Sep 6	Slidre Fiord frozen over.				
15	7.	18.	1.	3.	Crack 20 ft from shore.
22	11.	28.	2.	5.	Surface smooth, no cracks visible.
29	14.	36.	2.	5.	Cracks 1 in. visible along shoreline.
Oct 6	18.	46.	2.	5.	Surface smooth Few cracks 1 in. wide along shoreline.
13	18.	46.	2.	5.	Surface smooth Few cracks 1 to 3 in. wide along shoreline.
20	20.	51.	2.	5.	Surface smooth, few cracks
27	23.	58.	3.	8.	" " " "
Nov 3	24.	61.	3.	8.	" " " "
10	26.	66.	3.	8.	" " " " Snow hard packed w/ 2 in. (5 cm) snow on top.
17	28.	71.	5.	13.	Surface moderately ridged, few cracks Snow hard packed
24	30.	76.	5.	13.	Surface moderately ridged, few cracks
Dec 1	33.	84.	5.	13.	" " " " "
8	37.	94.	6.	15.	" " " no cracks
15	39.	99.	6.	15.	" " " " "
22	42.	107.	6.	15.	Snow hard packed, surface moderately ridged, no cracks
29	45.	114.	7.	18.	" " " " " " few cracks
1962					
Jan 5	46.	117.	7.	18.	Surface moderately ridged, few cracks along shoreline.
12	46.	117.	9.	23.	" " " " " "
19	48.	122.	8.	20.	" " " no cracks visible
26	51.	130.	10.	25.	" " " few cracks along shoreline
Feb 2	49.	124.	14.	36.	" " " no cracks
9	50.	127.	19.	48.	" " " " "
16	51.	130.	17.	43.	Surface lightly ridged, no cracks
23	53.	135.	17.	43.	" " " " "
Mar 2	55.	140.	18.	46.	" " " few cracks
9	57.	145.	19.	48.	" " " " "
16	59.	150.	20.	56.	" " " " "
23	61.	155.	20.	56.	" " " " "
30	62.	157.	20.	56.	" " " no cracks
Apr 6	64.	163.	21.	53.	" " " " "
13	67.	170.	14.	36.	" " " " "
20	69.	175.	15.	38.	" " " " "
27	70.	178.	8.	20.	" " " few cracks
May 4	74.	188.	11.	28.	" " " " "
11	81.	206.	8.	20.	" " " " "
18	88.	224.	13.	33.	" " " " "
25	89.	226.	5.	13.	" " " " "
Jun 1	89.	226.	10.	25.	Surface moderately ridged, no cracks
4	Station creek began running, w/ puddles at confluence w/ fiord.				
5	Measurement site flooded.				
7	Puddling from snow cover began on fiord, large pools along north shore fed by numerous creeks.				
8	Ice along north shore rotting rapidly.				
9	Crack, 3 ft wide, aligned north - south, 3 miles east of station.				
10	Fiord ice rotten.				
16	Shore lead, 100 ft wide along north shore of fiord.				
Fort Chipewyan: Measurements made 1/4 mile south of Radio Operations Building. 100 ft south of Government dock.					
1962					
Jan 7	28.	71.	6.	15.	Surface lightly ridged, no cracks
13	29.	74.	6.	15.	" " " " "
19	32.	81.	6.	15.	" " " " "
26	34.	86.	8.	20.	" " " " "
Feb 2	37.	94.	11.	28.	" " " " "
9	38.	97.	11.	28.	" " " " "
16	41.	104.	16.	41.	" " " " "
23	43.	109.	19.	48.	" " " " "

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Fort Chipewyan (cont'd):					
1962					
Mar 5	44.	112.	21.	53.	Surface lightly ridged, no cracks
9	45.	114.	22.	55.	" " " " "
16	45.	114.	19.	48.	" " " " "
23	43.	109.	24.	61.	" " " " "
30	43.	109.	17.	43.	" " " " "
Apr 6	43.	109.	15.	38.	" " " " "
13	43.	109.	14.	36.	" " " " "
20	Unable to take ice measurements due to overflow of water on ice.				
30	Overflow water on ice in bay. Few channels of open water appearing 3/4 mile south of bay. Remainder of lake solid ice.				
Fort Yukon:					
1961					
Oct 10	First indication of ice flow.				
11	Ice flow getting heavier.				
12	Main Yukon River ice flow heavier, slough ice stopped.				
13	Main channel running slower, slough ice stopped and froze.				
14	Only main channel open w/ slow flow.				
15	Ice frozen all sloughs and along shoreline, only channel open.				
16	Main channel in Yukon River stopped flow 2:41 p.m.				
17	Yukon River backed up (raised) 3 1/2 ft.				
18	In 24 hr period Yukon River raised over 5 ft.				
19	W/ the high raise Yukon River beginning to open up in stretches in front of town.				
Nov 4	4.5	11.			Surface smooth, no cracks
11	7.	18.	3.	8.	" " " "
18	7.	18.	5.	13.	" " " "
25	11.	28.	12.	30.	" " " "
					Snow depth measurements refer to drifting snow. Ice measurements taken outside of channel overflow. The Yukon River has dropped down to below normal w/ shore ice (up to 24 in. thick in places) frozen to the bottom.
Dec 3	11.	28.	12.	30.	Surface smooth, no cracks
10	14.5	36.	15.	38.	" " " "
					Drifting snow on river.
17	16.	41.	10.	25.	Surface smooth, no cracks
23	19.5	50.	10.	25.	" " " "
30	27.5	70.	10.	25.	" " " "
					Extreme cold weather during last week increased the ice depth.
1962					
Jan 7	34.5	88.	4.	10.	Surface smooth, no cracks, snow cover crystallized
14	42.	107.	4.	10.	" " " " " " " "
					Winds have blown snow off the rivers. This area has had strong winds this winter. Cold temp and no snow to insulate the ice causing rapid thickening.
21	44.	112.	7.	18.	Surface smooth, no cracks, snow cover fresh snow
29	49.	124.	6.	15.	" " " " snow cover crystallized
Feb 4	49.	124.	6.	15.	Snow cover crystallized
11	47.	119.	10.	25.	" " heavy
19	47.	119.	14.	36.	" " "
25	46.	117.	18.	46.	" " drifting
					Strong winds this month caused heavy snow drifts on river. Yukon River beginning to open up a small channel approx. 100 yd down stream from measurement site. Swift currents beginning to undercut the ice in the immediate area. The open area is approx. 6 ft wide and 75 ft long.
Mar 3	46.	117.	18.	46.	Snow cover drifted
11	43.	109.	18.	46.	" " "
18	40.	102.	12.	30.	" " crystallized
25	39.	99.	8.	20.	" " "
31	Warm weather during last week has softened snow considerably. Many open leads showing in Yukon River.				
Apr 2	39.	99.	8.	20.	Snow cover crystallized. Ice thickness measurements taken in 3 different localities approx. 100 ft from measurement site read 49 in. (124 cm), 53 in. (135 cm), and 47 in. (119 cm). Obs notes that these are very unusual ice thicknesses for this area. A measurement on a local lake (Hospital Lake) read only 14 in. (36 cm) thick (the snow depth on the lake could account for the thinness). On Porcupine River the ice measured only 24 in. (61 cm) (also very thin for this river).

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Fort Yukon (cont'd):					
1962					
Apr 8	36.5	93.	8.	20.	Snow cover crystallized. Avg snow depth 10 in. (25 cm).
15	34.	86.	10.	25.	" " drifting. Avg snow depth 10 in. (25 cm).
23	33.	84.	6.	15.	" " " " " " 10 in. (25 cm).
29	30.	76.	4.	10.	Snow settling. Avg snow depth 7 in. (18 cm). Open lead in front of Fort Yukon cutting channel approx. 20 ft wide, 1000 ft length, water appearing on entire ice sheet.
May 6	18.	46.	3.	8.	During this next week the river opened up a larger lead in front of town 1/2 mile extending 300 ft.
13	4.	10.	9.	23.	Ice rotting fast, water over ice.
20	No obs, open water in all areas, ice moved in front of town. Water near flood state. Since April 23 ice has moved in the Yukon River. The flow of water has been very heavy and the water is high, but not rising fast. (River bank running full). Ice at first was very thin and believed due to ice jam in upper Yukon River. During last 2 days some flowing ice blocks were 7 to 9 ft thick.				
31	During balance of month water held high but not in flood stage. Water entered part of main street but not in any dwellings.				
Jun 6	From May 31, 11:00 p.m. through June 2, 1:00 a.m. the Porcupine River, combined w/ the Sucher, Black and Sheenjek Rivers raised 4 ft over its banks flooding the Yukon, Porcupine and Black River valleys.				
Frobisher Bay: Measurements made halfway between Department of Transport causeway and Long Island; see sketch map.					
1961					
Oct 31	Small amounts of shore ice forming since October 26 but disappearing during the day.				
Nov 24	14.	36.	1.	3.	Surface smooth, few cracks
Dec 1	18.	46.	2.	5.	" " no cracks
8	21.	53.	2.5	6.	" " " "
18	23.	58.	3.	8.	" " " "
22	23.	58.	3.	8.	" " " "
30	27.	69.	3.	8.	" " " "
1962					
Jan 5	28.	71.	1.	3.	" " few cracks
15	34.	86.	1.	3.	" " no cracks
22	38.	97.	1.	3.	" " " "
30	40.	102.	1.	3.	" " few cracks 4 ft tidal ridging 100 ft from shore.
Feb 5	43.	109.	1.	3.	Surface smooth, few cracks
12	48.	122.	1.	3.	" " " "
19	53.	135.	2.	5.	" " " "
26	55.	140.	2.	5.	" " " " Tidal ridging 10 ft high extending 200 ft from shore.
Mar 5	57.	145.	3.	8.	Surface smooth, few cracks
Apr 2	No obs due to loss of drill.				
9	" " " " " " "				
16	63.	160.	5.	13.	Surface smooth, few cracks
23	64.	163.	5.	13.	" " " "
30	64.	163.	6.	15.	" " " "
May 7	64.	163.	15.	38.	" " no cracks
15	64.	163.	7.	18.	" " " "
21	63.	160.	8.	20.	" " few cracks
28	65.	165.	7.	18.	" " " "
Jun 5	67.	170.	2.	5.	" " " "
11	No obs due to water on ice.				
15	Sylvia Grenell River open above falls.				
18	No obs due to water on ice.				
25	" " " " " " "				
Gambell: Measurements made on Troutman Lake.					
1961					
Nov 25	16.5	42.			Surface rough, numerous cracks Ice forms on Troutman Lake around the middle of October. Safe enough to support a man during the latter part of November.

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Gambell (cont'd):					
1961					
Dec 2	18.	46.			Surface rough, numerous cracks
9	19.	48.			" " " "
16	21.	53.			" " " "
23	24.	61.			" " " " Numerous cracks ranging from 1/16 in. to 3 in. in width, lengths vary from approx. 25 ft to 100 ft. Patches of snow over most of the Lake.
30	30.5	77.			Surface rough, numerous cracks. Avg snow depth 13 in. (34 cm).
Jan 6	35.	89.			" " " " " " " 20 in. (51 cm).
13	35.5	90.			" " " " " " " 19.5 in. (50 cm).
20	36.5	93.			Surface rough, numerous cracks. " " " 25.5 in. (65 cm). Temp were moderately high during the first two weeks of January.
27	39.	99.			Surface rough, numerous cracks. Avg snow depth 30 in. (76 cm). Cracks are wider this month than last. The entire lake is practically covered w/ snow ranging from .5 in. (1 cm) to 30 in. (76 cm).
Feb 3	43.5	110.	3.	8.	Surface rough, numerous cracks. Avg snow depth 1.5 in. (4 cm).
10	45.5	116.	8.	20.	" " " " " " " 1.5 in. (4 cm).
17	46.	117.	.5	1.	" " " " " " " 1.5 in. (4 cm).
24	46.	117.	.5	1.	" crackled, numerous cracks. Avg snow depth 1.5 in. (4 cm). Cracks covered w/ snow. Snow massed along the coast especially near banks of gravel. Ice thickness decreased all along the shore.
Mar 3	46.	117.	13.	33.	Surface crackled, numerous cracks. Avg snow depth 4 in. (10 cm).
10	46.	117.	14.	36.	" moderately ridged, numerous cracks. Avg snow depth 10 in. (25 cm).
17	46.	117.	18.5	47.	Surface moderately ridged, numerous cracks. Avg snow depth 15.5 in. (39 cm).
24	46.	117.	13.5	34.	Surface moderately ridged, numerous cracks. Avg snow depth 10.5 in. (27 cm).
31	46.	117.	12.	30.	Surface moderately ridged, numerous cracks. Avg snow depth 13 in. (33 cm). All cracks and leads covered w/ snow. Few cracks obs in the snow caused by cracks in the ice. Ice surface under the snow is rough and cracked.
Apr 7	46.	117.	14.	36.	Surface moderately ridged, numerous cracks. Avg snow depth 11 in. (28 cm).
14	46.	117.	14.	36.	Surface moderately ridged, " " " " " 12.5 in. (32 cm).
21	46.	117.	9.	23.	Surface moderately ridged, " " " " " 11 in. (28 cm).
28	46.	117.	11.	28.	Surface moderately ridged, " " " " " 10 in. (25 cm). All wide cracks filled w/ slush. Snow over ice is melting, ice - snow interface getting slushy.
May 5	46.	117.	13.5	34.	Surface moderately ridged, numerous cracks. Avg snow depth 12.5 in. (32 cm).
12	45.5	116.	7.	18.	Surface heavily ridged, numerous cracks. Avg snow depth 11.5 in. (29 cm).
16	45.	114.	6.5	17.	Surface heavily ridged, " " " " " 10.5 in. (27 cm).
26	45.	114.	5.	13.	Surface heavily ridged, " " " " " 9 in. (23 cm). Leads obs running along side the ice cracks. Ice along the coast is beached and has no snow cover. Approx. 4 in. (10 cm) of slush exists below deeper snow. Where the snow is thin, water exists over the ice.
Jun 2	45.	114.	5.	13.	Surface heavily ridged, numerous cracks. Avg snow depth 9 in. (23 cm).
Goose Bay: Measurements made 50 yd off main dock in Terrington Basin.					
1961					
Dec 15	9.	23.			Surface smooth, no cracks
26	13.	33.	4.	10.	" " few cracks 3 to 5 in. (8 to 13 cm) slush and water along shoreline due to tide action.
29	14.	36.	2.	5.	Snow cover slushy, surface smooth, no cracks

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Goose Bay (cont'd):					
1962					
Jan 5	17.	43.	1.	3.	Surface smooth, no cracks
12	19.	48.	6.	15.	" " " "
19	24.	61.			Avg snow depth 1 to 2 in. (3 to 5 cm), and crusted, surface lightly ridged, no cracks. Tidal cracks w/ 1 to 6 in. water along jetty.
30	29.	74.			Avg snow depth 2 to 3 in. (5 to 8 cm), and crusted, surface lightly ridged, no cracks. Tidal cracks frozen. No water on ice.
Feb 2	32.	81.	2.	5.	Surface lightly ridged, narrow tidal cracks along shore 1 to 4 in. water on ice 15 - 20 ft from wharf.
9	32.	81.	5.	13.	Surface lightly ridged, tidal cracks frozen, No water on ice.
16	34.	86.	13.	33.	Surface smooth, no cracks visible
23	34.	86.	9.	23.	" " " " "
Mar 2	34.	86.	9.	23.	" " few cracks
9	36.	91.	.5	1.	" " " "
16	36.	91.	3.	8.	" rough, few cracks
23	42.	107.	5.	13.	" " " "
30	37.	94.	3.	8.	" " " "
Apr 6	36.	91.			" smooth, no cracks
13	36.	91.	12.	30.	" " " "
20	38.	97.	10.	25.	" " " "
27	38.	97.	8.	20.	" " " "
May 4	38.	97.			" " " "
					Avg snow depth 2 to 5 in. (5 to 13 cm).
11	31.	79.			Surface smooth, no cracks. Avg snow depth 1 to 2 in. (3 to 5 cm), and slushy.
18	21.	53.			Surface smooth, few narrow cracks Small bays open at both ends of dock. Ice rotten and candled.
25	Unable to measure ice due to water along shoreline and wharf.				
28	Official break-up of this body of water.				
Hall Beach:					
1961					
Oct 13	2.	5.			Surface smooth, no cracks Slush as far as the eye can see, visibility 2 miles in fog.
20	4.5	11.	1.	3.	Surface smooth, no cracks Narrow lead approx. 1/2 mile from shore, large polar floes about 1 mile from shore. Ice conditions still unsafe for travel due to patches of slush.
27	8.	20.	2.	5.	Surface lightly ridged, few cracks Ice extends approx. 1/2 mile from shore.
Nov 10	36.	91.	4.	10.	Surface moderately ridged, few cracks Ice extending 2 to 3 miles from shore.
24	34.	86.	12.	30.	Surface lightly ridged, few cracks Narrow cracks, heavy drifted snow, ice extending over 1 mile from shore.
Dec 8	52.	132.	12.	30.	Surface lightly ridged, few cracks, snow drifted
22	65.	165.	17.	43.	" " " numerous cracks
1962					
Mar 1	No obs taken during January and February. (Awaiting replacement of auger)				
2	74.	188.	12.	30.	Surface heavily ridged, numerous cracks Drifted snow on ice, 3 to 4 ft in depth. Ice bare in spots.
9	75.	191.	15.	38.	Surface heavily ridged, numerous cracks
16	77.	196.	18.	46.	" " " " " Ice bare in spots.
23	93.	236.	15.	38.	Surface heavily ridged, numerous cracks Ice free 1 mile from shore moving north, ice hummocked.
30	94.	239.	15.	38.	Surface heavily ridged, numerous cracks
Apr 13	76.5	194.	18.	46.	Surface lightly ridged, numerous cracks Heavily ridged ice 1 mile from shore.
20	105.	267.	20.	51.	Surface moderately ridged, numerous cracks Ice obs on the 13th appears non-representative as does the obs on the 20th. (Avg of the two measurements is 90.8 in. (231 cm) which seems to be a reasonable value.(Author))
27	Ice thickness not measured. Snow depth 23 in. (58 cm). Surface heavily ridged, numerous cracks. Open lead 1 mile from shore 300 yd wide.				

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Hall Beach (cont'd):					
1962					
May 25	Ice thickness not measured, depth of snow 20 in. (51 cm). Heavy drifts, surface moderately ridged mumerous cracks. Fast ice 1/2 to 3/4 mile from shore, then open water beyond to horizon.				
Jun 1	94.	239.			Heavy drifts, surface moderately ridged, numerous cracks Ice extends 1/2 to 3/4 mile from shore to open water extending to visibility limits. Rotten ice and open leads make ice unsafe for further obs.
Holman Island: Measurements made 120 ft from shore tidal crack, due west of Hudson Bay Company warehouse.					
1961					
Oct 5	King Bay completely frozen.				
6	Amundsen Gulf frozen to horizon.				
7	2.5	6.			Surface smooth, no cracks
12	Ice broke up and refroze.				
13	7.5	19.	1.	3.	" " " "
20	11.5	29.	1.	3.	" " " "
27	15.	38.	1.	3.	" " " " Amundsen Gulf, parallel to and approx. 1/4 mile from shore, varying from 1/4 to 1/2 mile wide, on two occasions as noted under remarks. Wide lead opened and refroze on 24th and 26th.
Nov 3	18.	46.	1.	3.	Surface smooth, no cracks
10	20.	51.	2.	5.	" " " "
17	24.5	62.	2.	5.	" " " "
24	26.5	67.	1.	3.	" " " "
Dec 1	30.5	77.	2.	5.	" " " "
8	32.5	83.	2.	5.	" " " "
15	35.5	90.	3.	8.	" " " "
22	39.5	100.	3.	8.	" " " "
1962					
Jan 12	47.	119.	3.	8.	" " " "
19	51.	130.	4.	10.	" " " "
26	52.	132.	4.	10.	" " " "
Feb 2	53.	135.	4.	10.	" " " "
9	54.5	138.	4.	10.	" " " "
16	57.5	146.	4.	10.	" " " "
23	60.5	154.	5.	13.	" " " "
Mar 2	62.	157.	4.	10.	" " " "
23	68.	173.	3.	8.	" " " "
30	70.	178.	3.	8.	" " " "
Apr 6	71.5	182.	3.	8.	" " " "
13	71.5	182.	3.	8.	" " " "
20	73.	185.	3.	8.	" " " "
27	74.5	189.	2.5	6.	Surface lightly ridged, no cracks
May 4	76.	193.	3.	8.	" " " " "
11	76.	193.	3.	8.	" " " " "
18	76.5	194.			" " " " " Snow depth 2 to 3 in. (5 to 8 cm).
25	76.5	194.			Surface lightly ridged, no cracks Snow depth 2 to 3 in. (5 to 8 cm).
Jun 1	76.5	194.			Surface smooth, few cracks
8	57.	145.			" " shore cracks
15	42.	107.			" " " "
22	31.	79.			" lightly ridged, numerous cracks
Holy Cross: Measurements made in Yukon River near a bluff 1/4 mile north northwest of mission.					
1961					
Oct 12	First ice.				
13	Men crossed over ice.				
19	Ice all disappeared, then froze again.				
28	6.	15.			Snow cover drifted, blown clear. Surface glassy. Channel clear from bluff down river for almost 4 miles. Hardly any cracks but plenty of open water below the mission, slough is glassy, main river solid w/ rough ice. First man and first vehicle crossed ice to the north.
31	Jeeps now crossing ice full time.				

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Holy Cross (cont'd):					
1961					
Nov 4	10.	25.	1.5	4.	Surface smooth, very few cracks. 2 in. dry snow.
11	10.	25.	4.	10.	" " no cracks. 4 in. snow cover. No more open water.
18	12.5	32.	5.	13.	Surface slushy and rough, no cracks. 5 in. snow cover. Slush and overflow 3 to 4 in. deep.
25	12.5	32.	4.	10.	Surface smooth, no cracks. 4 in. snow cover. Open spot about 1/4 mile above and 1/2 mile below bluff, both about 100 ft wide, and 200 ft long. Some shell ice and overflow.
Dec 2	15.5	39.	9.	23.	Surface rough and w/ ridges, no cracks. Avg snow depth 11 in. (28 cm). Surface ridged from slush.
8	14.	36.	11.	28.	Surface rough, no cracks. Avg snow depth 13 in. (33 cm). Unable to measure at usual site due to overflow water, obs made 100 yd down river.
16	18.5	47.	3.	8.	Surface lightly ridged, no cracks. Avg snow depth 5 in. (13 cm). Ice measured at original site.
23	21.	53.	2.	5.	Surface smooth, no cracks. Avg snow depth 8 in. (20 cm).
30	25.	64.	7.	18.	Surface lightly ridged, few small cracks. Avg snow depth 8 in. (20 cm). No leads or cracks in sight.
1962					
Jan 7	26.	66.	7.	18.	Surface smooth, no cracks. Avg snow depth 8 in. (20 cm).
14	27.	69.	9.	23.	Surface lightly ridged, few small cracks. Avg snow depth 10 in. (25 cm), and fluffy.
21	25.	64.	13.5	34.	Surface lightly ridged, few cracks 2 in. wide. Avg snow depth 11 in. (28 cm), and crusted. Deep cracks along edge of slough due to ice settling, otherwise ice solid.
28	27.	69.	11.	28.	Surface lightly ridged, few cracks various lengths along edge of shore. Avg snow depth 9 in. (23 cm).
Feb 5	26.	66.	9.	23.	Surface lightly ridged, ice settled cracked edges. Avg snow depth 9.5 in. (24 cm).
12	28.	71.	13.	33.	Surface lightly ridged, ice settled. Avg snow depth 13 in. (33 cm).
19	30.	76.	15.	38.	Surface smooth, no cracks. Avg snow depth 15 in. (38 cm), and overflow.
26	30.	76.	13.	33.	Surface smooth, no cracks. " " " 13 in. (33 cm), 5 in. slush.
Mar 4	33.	84.	13.	33.	Surface smooth, no cracks. " " " 13 in. (33 cm), 5 in. overflow.
11	29.	74.	13.	33.	Surface smooth, no cracks. " " " 6 in. (15 cm), 7 in. slush.
19	33.5	85.	8.	20.	Surface smooth, no cracks. " " " 11 in. (28 cm), and slushy.
26	36.	91.	7.	18.	Surface smooth, no cracks. " " " 10 in. (25 cm). 3 layers overflow and slush ice, snow very dry. Ice still solid.
Apr 2	33.	84.	4.5	11.	Surface smooth, no cracks. Avg snow depth 6 in. (15 cm).
9	32.	81.			" " " " " " " 5 in. (13 cm).
16	34.	86.			" " " " " " " 4 in. (10 cm).
23	35.	89.			" " " " " " " 5 in. (13 cm).
30	37.	94.	2.5	6.	" " " " " " " 7 in. (18 cm). 18 in. overflow and run off water on ice.
May 7	36.	91.			Surface slushy, no cracks. Avg snow depth 5 in. (13 cm).
14	35.	89.			Surface 1 1/2 ft water, no cracks. Avg snow depth 2 in. (5 cm).
19	Water rising, ice beginning to float.				
21	Further measurements impossible. All ice afloat but no running open water. Ice moving but water insufficient to carry ice away. Water rising an in. an hr.				
Inuvik: Measurements made midstream on east channel of MacKenzie River opposite Inuvik townsite, approx. 300 ft offshore.					
1961					
Oct 16	4.	10.	1.	3.	Surface smooth, no cracks
23	6.	15.	1.	3.	" " " "
29	7.	18.	1.	3.	" " " "
Nov 4	10.	25.	2.	5.	" " " "
10	11.	28.	2.	5.	" " " "
17	15.	38.	8.	20.	" " " "
24	16.	41.	8.	20.	" " " "

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Inuvik (cont'd):					
1961					
Dec 1	18.	46.	8.	20.	Surface smooth, no cracks
8	22.	56.	6.	15.	" " " "
15	24.	61.	6.	15.	" " " "
22	26.	66.	8.	20.	" " " "
29	30.	76.	8.	20.	" " " "
1962					
Jan 5	30.	76.	5.	13.	" " " "
12	33.	84.	6.	15.	" " " "
19	33.	84.	6.	15.	" " " "
26	36.	91.	8.	20.	" " " "
Feb 2	39.	99.	8.	20.	" " " "
9	40.	102.	8.	20.	" " " "
16	43.	109.	8.	20.	" " " "
23	44.	112.	9.	23.	" " " "
Mar 2	43.	109.	9.	23.	" " " "
9	44.	112.	10.	25.	" " " "
16	47.	119.	10.	25.	" " " "
23	51.	130.	10.	25.	" " " "
30	53.	135.	10.	25.	" " " "
Apr 6	54.	137.	9.	23.	" " " "
13	55.	140.	8.	20.	" " " "
20	55.	140.	8.	20.	" " " "
27	55.	140.	9.	23.	" " " "
May 4	56.	142.	10.	25.	" " " "
11	52.	132.	10.	25.	" " " "
18	55.	140.	6.	15.	" " " "
					3 in. of water on ice.
20	23 in. of water on ice.				
23	3 ft of water on ice.				
26	49.	124.			Surface moderately ridged, numerous cracks
27	River level up 12 ft and the ice moved about 50 ft.				
29	Ice moved about 400 ft.				
Jun 2	Channel clear of ice.				
Isachsen:					
1961					
Sep 1	4.	10.	1.	3.	Bay completely ice locked.
8	10.	25.	1.	3.	Polar ice covers bay.
15	13.	33.	1.	3.	Snow cover drifted, snow density .216.
23	16.	41.	1.	3.	
Oct 8	27.	69.	1.	3.	Snow density .316.
10	27.	69.	12.	30.	Surface smooth, snow density .330.
15	29.	74.	2.	5.	
22	Storm, no measurements taken.				
27	29.	74.	16.	41.	Avg snow depth 1 in. (3 cm).
29	Storm, no measurements taken.				
Nov 3	29.	74.	12.	30.	(Surface smooth, snow density 1.55. Density corrected to .310.(Author).)
10	27.	69.	12.	30.	Surface smooth, snow density .330.
24	29.	74.	16.	41.	Snow density .338.
Dec 2	30.	76.	16.	41.	
27	36.	91.	24.	61.	
1962					
Jan 1	41.	104.	6.	15.	Surface smooth, few cracks
6	40.	102.	6.	15.	" " " "
12	41.	104.	12.	30.	" " " "
19	44.	112.	12.	30.	
Feb 14	67.	170.	10.	25.	" " " "
					No reports for remainder of month because of ice auger freezing in ice.
Mar 7	70.	178.	7.	18.	Surface smooth, few cracks
18	73.	185.	6.	15.	" " " "
					Snow density .402.

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Isachsen (cont'd):					
1962					
Mar 23	75.	191.	6.	15.	Surface smooth, few cracks
30	76.	193.	6.	15.	Surface moderately ridged, few cracks
Apr 6	80.	203.	6.	15.	" " " " " Snow density .268.
14	82.	208.	6.	15.	Surface moderately ridged, few cracks, snow density .394.
21	81.5	207.	6.	15.	" " " " " " " .402.
27	82.5	210.	6.	15.	" " " " " " " .454.
May 5	83.5	212.	6.	15.	" " " " " Few patches of clear ice.
11	85.	216.	6.	15.	Surface moderately ridged, few cracks
18	85.5	217.	8.	20.	" " " " "
25	86.	218.	9.	23.	" " " " " Snow density .428.
Jun 1	89.	226.	9.	23.	Surface moderately ridged, few cracks
16	Unable to obtain measurement because of water on the ice. Surface water estimated to reach 2 ft in depth.				
King Salmon: Measurements made on Naknek River, 40 yd offshore from Fish & Wildlife Boat Docks.					
1961					
Dec 2	10.	25.	1.5	4.	Surface smooth, no cracks. Date ice formed unknown.
9	Ice formed from shore to shore. No measurement taken since shore ice unsafe. Appears to be 3 to 4 in. of water on ice. Few cracks in ice.				
16	11.	28.			Surface smooth, few cracks
23	19.	48.			" " no cracks
30	26.	66.			" " " "
1962					
Jan 6	27.	69.			" " " "
13	29.5	75.			" " " "
20	30.5	77.			" " " "
27	30.	76.			" lightly ridged, no cracks
Feb 3	35.	89.	2.5	6.	Surface smooth, no cracks
10	35.5	90.	1.5	4.	" " " "
17	37.5	95.	1.	3.	" " " "
24	35.5	90.	4.	10.	" " " "
Mar 3	38.5	98.	3.	8.	" " " "
10	28.	71.	3.	8.	" " " " Open water in center of river approx. 2 miles east of measurement site.
17	33.	84.	6.	15.	Surface smooth, no cracks
24	31.	79.	5.	13.	" " " "
31	14.5	37.			" " " " Lead moved past measurement site and extends approx. 1 mile west. Estimate only 5 miles of shore to shore ice exists between King Salmon and Naknek.
Apr 7	River open at King Salmon. Ice floes built up along shoreline and extend outward approx. 25 ft. Numerous ice floes in river.				
14	Ice floe conditions along shore and in river same as on 7th.				
21	River is completely free of ice.				
Knob Lake: Measurements made in Knob Lake. See sketch map for east, center and west locations.					
1961					
Nov 10	Snow depth 3 in. (8 cm). Surface smooth, few cracks. First complete coverage October 23 - 24, but slowly decayed and broke up because of high temp and winds, leaving approx. 50% ice cover by November 6. Complete ice cover reformed November 6 - 7. Initial ice thickness was approx. 4 to 6 in. (10 to 15 cm) and new ice is approx. 1 to 2 in. (3 to 5 cm) thick. Snow cover patchy.				
17	9.	23.	1.	3.	Surface smooth, numerous cracks
24	9.	23.	3.	8.	" " " "
Dec 15	16.	41.	3.	8.	Numerous cracks. Frozen slush on surface.
22	20.	51.	4.	10.	" " " " " "
29	18.	46.	16.	41.	Surface smooth, no cracks
1962					
Jan 5	25.	64.	12.	30.	Ice thickness west side 17 in. (43 cm), east side 22.5 in. (57 cm), snow depth variable west side 9.5 in. (24 cm), east side 8 in. (20 cm). Surface smooth, no cracks. Ice thickness and snow depth measurements were taken at the center, west and east side of lake. The obs taken at the center site are given in the column and the other values in remarks.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Knob Lake (cont'd): 1962					
Jan 12	24.	61.	12.	30.	Ice thickness west side 17.5 in. (44 cm), east side 23 in. (58 cm), snow depth west side 14 in. (36 cm), east side 10 in. (25 cm). Surface lightly ridged, few cracks.
16	Violent storm caused heavy ridging and slush up to 5 in. (13 cm) in depth to form. Slush almost completely frozen and snow decreased in depth.				
19	28.	71.	11.	28.	Ice thickness west side 21 in. (53 cm), east side 23 in. (58 cm), snow depth west side 20 in. (51 cm), east side 8 in. (20 cm). Surface heavily ridged, few cracks.
26	26.	66.	11.	28.	Ice thickness west side 32.5 in. (83 cm), east side 25 in. (64 cm), snow depth west side 5 in. (13 cm), east side 9 in. (23 cm). Surface moderately ridged, few cracks. Ridging less marked due to wind erosion and possibly subsidence.
Feb 2	30.5	77.	9.	23.	Ice thickness west side 35 in. (89 cm), east side 26 in. (66 cm), snow depth west side 3 in. (8 cm), east side 6 in. (15 cm). Surface moderately ridged, numerous cracks
9	31.	79.	11.	28.	Ice thickness west side 39 in. (99 cm), east side 31.5 in. (80 cm), snow depth west side 3 in. (8 cm), east side 8 in. (20 cm). Surface moderately ridged, numerous cracks
15	33.	84.	12.	30.	Ice thickness west side 43 in. (109 cm), east side 28.5 in. (72 cm), snow depth west side 3 in. (8 cm), east side 8 in. (20 cm). Surface moderately ridged, numerous cracks
23	33.	84.	10.	25.	Ice thickness west side 46 in. (117 cm), east side 32 in. (81 cm), snow depth west side 3 in. (8 cm), east side 9 in. (23 cm). Surface lightly ridged, no cracks
Mar 2	34.5	88.	11.	28.	Ice thickness west side 49 in. (124 cm), east side 34.5 in. (88 cm), snow depth west side 4 in. (10 cm), east side 10 in. (25 cm). Surface moderately - heavily, no cracks
9	34.5	88.	15.	38.	Ice thickness west side 49.5 in. (126 cm), east side 31.5 in. (80 cm), snow depth west side 6 in. (15 cm), east side 13 in. (33 cm). Surface lightly - moderately ridged, no cracks
16	34.	86.	14.	36.	Ice thickness west side 49 in. (124 cm), east side 33.5 in. (85 cm), snow depth west side 3.5 in. (9 cm), east side 13 in. (33 cm). Surface lightly ridged, no cracks
23	34.5	88.	13.5	34.	Ice thickness west side 51.5 in. (131 cm), east side 33.5 in. (85 cm), snow depth west side 4.5 in. (11 cm), east side 12.5 in. (31 cm). Surface lightly ridged, no cracks
30	35.5	90.	13.5	34.	Ice thickness west side 50 in. (127 cm), east side 34.5 in. (88 cm), snow depth west side 3 in. (8 cm), east side 11.5 in. (29 cm). Surface lightly ridged, no cracks
Apr 6	38.	97.	12.	30.	Ice thickness west side 51 in. (130 cm), east side 33 in. (84 cm), snow depth west side 1 in. (3 cm), east side 12.5 in. (32 cm). Surface very lightly ridged, no cracks
13	39.	99.	13.	33.	Ice thickness west side 51 in. (130 cm), east side 36 in. (91 cm), snow depth west side 7 in. (18 cm), east side 13 in. (33 cm).
20	39.	99.	11.	28.	Ice thickness west side 52.5 in. (133 cm), east side 35 in. (89 cm), snow depth west side 5.5 in. (14 cm), east side 13.5 in. (34 cm). Few cracks
27	39.	99.	7.5	19.	Ice thickness west side 52 in. (132 cm), east side 34 in. (86 cm), snow depth west side 2 in. (5 cm), east side 11 in. (28 cm). Few cracks. April was cold and sunny, and no marked signs of deterioration were evident. Isolated slush patches caused local ice softening. These short periods of thawing were followed by refreezing and hardening of the ice.
May 4	42.	107.	4.	10.	Ice thickness west side 52 in. (132 cm), east side 38 in. (97 cm), snow depth west side 4 in. (10 cm), east side 7 in. (18 cm). Surface smooth, numerous cracks
6	Mild spell during past week produced a rapid deterioration of the ice surface. Much slush and standing water in evidence.				
11	42.	107.	1.	3.	Ice thickness west side 50 in. (127 cm), east side 38 in. (97 cm), snow depth west side 1 in. (3 cm), east side 7 in. (18 cm). Surface lightly ridged, few cracks. Blizzard conditions since May 6, covered the lake w/ up to 11 in. of new snow. Ice generally hard.
18	34.	86.	3.	8.	Ice thickness west side 43 in. (109 cm), east side 33 in. (84 cm), snow depth west side 2 in. (5 cm), east side 2 in. (5 cm). Surface smooth, numerous cracks. Snow cover mostly slush.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Knob Lake (cont'd):					
1962					
May 25	30.	76.	3.	8.	Ice thickness west side 39 in. (99 cm), east side 27 in. (69 cm), snow depth west side 2 in. (5 cm), east side 2 in. (5 cm). Surface smooth, numerous cracks. Snow cover mostly slush.
31	Ice was softening, and some open water and cracks were obs.				
Jun 1	25.5	65.	Trace		Ice thickness west side 33 in. (84 cm), east side 25.5 in. (65 cm). Surface smooth, numerous cracks. 5% open water mainly in northwest bay. Ice deteriorating rapidly.
6	Pearce Lake free of ice.				
8	80% ice-covered but ice too rotten to permit measurements.				
13	Knob Lake free of ice but for a little loose brash at the south end.				
18	Float plane operations began on Squaw Lake.				
24	Lake clear of ice.				
Knob Lake:	Measurements made in Maryjo Lake. See sketch map for east, center and west locations.				
1962					
Jan 5	21.	53.	9.	23.	Ice thickness west side 21.5 (55 cm), east side 19.5 in. (50 cm), snow depth west side 8 in. (20 cm), east side 11 in. (28 cm). Surface smooth, no cracks. Ice thickness and snow depth measurements were taken at the center, west and east side of lake. The obs taken at the center site are given in the column and the other values in remarks.
12	21.	53.	11.	28.	Ice thickness west side 22 in. (56 cm), east side 18 in. (46 cm), snow depth west side 9 in. (23 cm), east side 12 in. (30 cm). Surface lightly ridged, few cracks. See remarks for Knob Lake. No significant differences.
16	See remarks for Knob Lake. No significant differences.				
19	29.	74.	15.	38.	Ice thickness west side 23 in. (58 cm), east side 32 in. (81 cm), snow depth west side 9 in. (23 cm), east side 3 in. (8 cm). Surface heavily ridged, few cracks
26	30.5	77.	17.	43.	Ice thickness west side 25 in. (64 cm), east side 32 in. (81 cm), snow depth west side 8 in. (20 cm), east side 7 in. (18 cm). Surface moderately ridged. Few cracks.
Feb 2	31.5	80.	5.	13.	Ice thickness west side 26.5 (67 cm), east side 33 in. (84 cm), snow depth west side 8 in. (20 cm), east side 4 in. (10 cm). Surface moderately ridged, numerous cracks
9	35.5	90.	6.	15.	Ice thickness west side 26.5 in. (67 cm), east side 34 in. (86 cm), snow depth west side 10 in. (25 cm), east side 6 in. (15 cm). Surface moderately ridged, numerous cracks
16	36.	91.	7.	18.	Ice thickness west side 32.5 in. (83 cm), east side 39 in. (99 cm), snow depth west side 10 in. (25 cm), east side 6 in. (15 cm). Surface moderately ridged, numerous cracks
23	40.5	103.	7.	18.	Ice thickness west side 32 in. (81 cm), east side 40.5 in. (103 cm), snow depth west side 10 in. (25 cm), east side 7 in. (18 cm). Surface lightly ridged, no cracks
Mar 2	36.	91.	11.	28.	Ice thickness west side 32.5 in. (83 cm), east side 40.5 in. (103 cm), snow depth west side 10 in. (25 cm), east side 11 in. (28 cm). Surface moderately - heavily ridged, no cracks
9	37.	94.	14.	36.	Ice thickness west side 32 in. (81 cm), east side 38.5 in. (98 cm), snow depth west side 15 in. (38 cm), east side 13 in. (33 cm). Surface lightly - moderately ridged, no cracks
16	42.5	108.	12.	30.	Ice thickness west side 34 in. (86 cm), east side 43 in. (109 cm), snow depth west side 14.5 in. (37 cm), east side 12 in. (30 cm). Surface lightly ridged, no cracks
23	42.	107.	12.	30.	Ice thickness west side 31.5 in. (80 cm), east side 31.5 in. (80 cm), snow depth west side 14.5 in. (37 cm), east side 12 in. (30 cm). Surface lightly ridged, no cracks
30	41.5	105.	9.	23.	Ice thickness west side 31.5 in. (80 cm), east side 42.5 in. (108 cm), snow depth west side 14.5 in. (37 cm), east side 12 in. (30 cm). Surface lightly ridged, no cracks
Apr 6	38.	97.	12.	30.	Ice thickness west side 35 in. (89 cm), east side 43.5 in. (110 cm), snow depth west side 12.5 in. (32 cm), east side 11 in. (28 cm). Surface very lightly ridged, no cracks
13	44.	112.	13.5	34.	Ice thickness west side 37 in. (94 cm), east side 45.5 in. (116 cm), snow depth west side 16.5 in. (42 cm), east side 14.5 in. (37 cm).

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Knob Lake (cont'd):					
1962					
Apr 20	45.	114.	14.	36.	Ice thickness west side 34 in. (86 cm), east side 45 in. (114 cm), snow depth west side 14 in. (36 cm), east side 14 in. (36 cm).
27	43.	109.	10.5	27.	Ice thickness west side 36 in. (91 cm), east side 44 in. (112 cm), snow depth west side 9.5 in. (24 cm), east side 11 in. (28 cm).
May 4	44.	112.	9.	23.	Ice thickness west side 37 in. (94 cm), east side 46 in. (117 cm), snow depth west side 6 in. (15 cm), east side 8 in. (20 cm). Surface smooth, numerous cracks
11	43.	109.	9.	23.	Ice thickness west side 39 in. (98 cm), east side 46 in. (117 cm), snow depth west side 4 in. (10 cm), east side 3 in. (8 cm). Surface lightly ridged, few cracks
18	43.	109.	2.	5.	Ice thickness west side 37 in. (94 cm), east side 38 in. (97 cm), snow depth west side 1 in. (3 cm), east side 2 in. (5 cm). Surface smooth, numerous cracks
25	38.	97.	2.	5.	Ice thickness west side 29 in. (74 cm), east side 38 in. (97 cm). Surface smooth, numerous cracks. Ice conditions similar to those noted for Knob Lake occurred. The stream flowing into the southern end of the lake was open on the 4th and the 25th, but closed on the 11th and 18th. On the whole Knob Lake seems to have deteriorated to a greater extent than Maryjo Lake. Less open water visible at Maryjo Lake.
Jun 1	34.	86.	Trace		Ice thickness west side 26.5 in. (67 cm), east side 33 in. (84 cm). Surface smooth, numerous cracks.
8	Deterioration on Maryjo Lake in the early part of the month, not quite so marked as on Knob Lake.				
15	Maryjo Lake clear of ice.				
Kotzebue: Measurements made in Kotzebue Sound, offshore from village, about 1 1/2 mile north northeast of Weather Bureau Station.					
1961					
Nov 27	19.	48.			Surface smooth, no cracks within 1/4 mile. Avg snow depth 4 in. (10 cm). First obs was made in Kotzebue Sound, offshore from the Weather Bureau Station.
Dec 1	25.	64.			Surface smooth, no cracks within 1/4 mile. Avg snow depth 5 in. (13 cm).
8	29.	74.			Surface smooth, " " " " " " " " 5 in. (13 cm).
15	31.	79.			Surface smooth, " " " " " " " " 6 in. (15 cm).
22	34.	86.			Surface smooth, " " " " " " " " 6 in. (15 cm).
29	37.	94.			Surface smooth, " " " " " " " " 6 in. (15 cm).
1962					
Jan 5	38.	97.			Surface smooth, " " " " " " " " 8 in. (20 cm).
12	39.	99.			Surface smooth, " " " " " " " " 9 in. (23 cm).
19	39.5	100.			Surface smooth, " " " " " " " " 10 in. (25 cm).
26	40.	102.			Surface smooth, " " " " " " " " 12 in. (30 cm). The lagoon, (only other location for measuring ice in the area) is frozen solid. The maximum ice thickness in the lagoon is 41.5 in.
Feb 2	42.	107.			Surface smooth, no cracks. Avg snow depth 13 in. (33 cm).
9	43.	109.			" " " " " " " " 14 in. (36 cm).
16	43.5	110.			" " " " " " " " 14 in. (36 cm).
23	44.	112.			" " " " " " " " 17 in. (43 cm).
Mar 2	41.5	105.	4.	10.	" " " " " " " " 6 in. (15 cm).
9	41.5	105.	6.	15.	" " " " " " " " 8 in. (20 cm).
16	42.	107.	8.	20.	" " " " " " " " 12 in. (30 cm).
23	42.5	108.	10.	25.	" " " " " " " " 14 in. (36 cm).
30	42.5	108.	12.	30.	" " " " " " " " 19 in. (48 cm).
Apr 6	42.5	108.	14.	36.	" " " " " " " " 21 in. (53 cm).
13	42.5	108.	18.	46.	" " " " " " " " 23 in. (58 cm).
20	43.	109.	20.	51.	" " " " " " " " 24 in. (61 cm).
27	43.5	110.	23.	58.	" " " " " " " " 24 in. (61 cm).

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Kotzebue (cont'd):					
1962					
May 4	44.	112.			Surface smooth, no cracks. Avg snow depth 20 in. (51 cm).
11	43.5	110.			" " " " " " " 16 in. (41 cm).
18	42.5	108.			" " " " " " " 14 in. (36 cm).
25	40.	102.			" " " " " " " 6 in. (15 cm).
McGrath: Measurements made 200 - 300 ft upstream on the Kuskokwim River from the east end of the east - west runway.					
1961					
Oct 9	Ice pans started running, avg 3 to 4 ft, 2 1/2 in. thickness. Shore ice extending out 18 in.				
12	Shore ice 5 ft, pans 9 to 10 ft diam.				
13	Ice stopped running, pans jammed and tilted, w/ some open water.				
14	3.5	9.			Surface rough, few cracks. Avg snow depth 1.5 in. (4 cm).
21	3.	8.			" rotting, numerous cracks
					Water running on top of ice, general condition of ice, rotten.
28	9.5	24.	1.5	4.	Surface rough, no cracks. Avg snow depth 4 in. (10 cm).
					Measurements made 100 ft upstream from previous site, because of open water.
Nov 4	11.	28.	3.5	9.	Surface rough, no cracks. Avg snow depth 4 in. (10 cm).
11	13.	33.	3.5	9.	" " " " " " " 3 in. (8 cm).
18	17.	43.	6.	15.	" " " " " " " 5 in. (13 cm).
25	20.	51.	8.	20.	" " " " " " " 12 in. (30 cm).
					There are several spots of open water on the river near McGrath.
Dec 2	24.	61.	11.	28.	Surface slushy, no cracks. Avg snow depth 22 in. (56 cm).
9	23.	58.	1.	3.	" " " " " " " 30 in. (76 cm).
16	24.	61.	9.	23.	" " " " " " " 22 in. (56 cm).
23	24.5	62.	9.	23.	" " " " " " " 22 in. (56 cm).
30	27.	69.	12.	30.	" lightly ridged, no cracks. Avg snow depth 24 in.
					(61 cm). Over flow and slush on top of ice to depth of 3 in. froze over leaving lightly ridged surface.
1962					
Jan 6	27.	69.	12.	30.	Surface lightly ridged, no cracks. Avg snow depth 29 in. (74 cm).
13	25.	64.	14.	36.	Surface " " " " " " " 34 in. (86 cm).
20	26.	66.	15.	38.	Surface " " " " " " " 36 in. (91 cm).
27	28.	71.	14.	36.	Surface " " " " " " " 30 in. (76 cm).
Feb 3	28.	71.	18.	46.	Surface " " " " " " " 34 in. (86 cm).
10	29.	74.	20.	51.	Surface " " " " " " " 30 in. (76 cm).
17	28.5	72.	18.	46.	Surface " " " " " " " 32 in. (81 cm).
24	28.	71.	22.	56.	Surface " " " " " " " 32 in. (81 cm).
Mar 3	29.	74.	24.	61.	Surface " " " " " " " 30 in. (76 cm).
10	29.5	75.	20.	51.	Surface " " " " " " " 34 in. (86 cm).
17	28.	71.	18.	46.	Surface " " " " " " " 32 in. (81 cm).
24	28.	71.	16.	41.	Surface " " " " " " " 30 in. (76 cm).
31	28.	71.	12.	30.	Surface " " " " " " " 24 in. (61 cm).
Apr 7	29.	74.	19.	48.	Surface smooth, no cracks. Avg snow depth 12 in. (30 cm).
14	28.	71.	7.	18.	" " " " " " " 10 in. (25 cm).
21	28.	71.	4.	10.	" " " " " " " 10 in. (25 cm).
28	28.	71.	2.	5.	" " " " " " " 9 in. (23 cm).
May 5	27.5	70.	3.	8.	Surface slushy, no cracks.
12	Unsafe to walk on, 10 ft open water along bank, water rising 1 ft per day.				
16	Ice started moving, jamming, causing water to rise.				
17	Flood.				
18	Ice started moving, and continued, water receded.				

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Moosonee: Measurements made directly opposite center door of Hudson's Bay Company Store and 180 ft from tidal crack.					
1961					
Nov 17	First ice formed on river.				
30	Freeze-up complete.				
Dec 8	Ice dangerously thin in places w/ closed lead approx. 200 ft from shore. The ice thickness variable 1 to 4 in. (3 to 10 cm). Surface lightly ridged, tidal cracks. Snow depth 2 in. (5 cm).				
11	Roadway across river to Moose Factory in use by snowmobiles.				
15	No open water. Ice thickness variable 2 to 6 in. (5 to 15 cm). Surface lightly ridged, tidal crack. Snow depth 6 in. (15 cm).				
22	11.	28.	5.	13.	Surface smooth, tidal cracks
29	9.	23.	7.	18.	" " " "
1962					
Jan 5	12.	30.	6.	15.	" " " "
12	13.	33.	6.	15.	" " " "
19	14.	36.	7.	18.	" " " "
29	17.	43.	3.	8.	" " " "
					Light hummocking along tidal cracks, throughout month.
Feb 2	18.	46.	3.	8.	Surface smooth, tidal cracks Light hummocking along tidal crack, heavy shore ice due to high tide.
10	21.	53.	4.	10.	Surface smooth, few tidal cracks
16	24.	61.	7.	18.	" " " " "
23	20.	51.	8.	20.	" " " " "
					Light hummocking along cracks throughout month, occasional shore water at high tide.
Mar 2	21.	53.	9.	23.	Surface smooth, few cracks
10	21.	53.	8.	20.	" " " "
19	24.	61.	7.	18.	" " " "
23	24.	61.	6.	15.	" " " "
31	26.	66.	9.	23.	" " " "
Apr 6	22.	56.	5.	13.	Surface lightly ridged, tidal cracks and leads.
May 4	Breakup began.				
Mould Bay: Measurement site approx. 400 yd from shore and 3/4 mile from station. Depth of water at site 90 ft.					
1961					
Sep 22	Freeze-up commenced. Permanent ice on bay.				
Oct 13	17.	43.	1.	3.	Surface smooth, no cracks. Snow depths observed through to 6th April are the avg snow depths in the area, not the amount of snow over the ice hole.
20	21.	53.	1.5	4.	Surface smooth, no cracks, snow density .383.
27	23.	58.	3.	8.	" " " "
Nov 3	25.	64.	3.	8.	Surface lightly ridged, no cracks, snow density .374.
10	27.	69.	2.	5.	" moderately ridged, few cracks, snow density .308. Shore cracks.
17	31.	79.	3.	8.	Surface moderately ridged, few cracks, snow density .365. Shore cracks.
24	33.	84.	6.	15.	Surface moderately ridged, " " " " .371. Shore cracks.
30	35.	89.	7.	18.	Surface moderately ridged, " " " " .356. Shore cracks.
Dec 8	37.	94.	7.	18.	Surface moderately ridged, " " " " .356.
15	38.	97.	7.	18.	" heavily ridged, few shore cracks, snow density .434.
21	38.	97.	7.	18.	" " " " " " " " .387.
29	39.	99.	10.	25.	" " " " " " " " .413.
1962					
Jan 5	44.	112.	10.	25.	Surface moderately ridged, cracks close to shore running northwest - southeast. Snow density .395.
13	46.	117.	8.	20.	Surface moderately ridged, few shore cracks, snow density .384.
18	46.	117.	12.	30.	" " " " " " " " .406.
26	50.	127.	6.	15.	" " " " " " " " .374. Ice thickness interpolated.
Feb 2	54.	137.	5.	13.	Surface moderately ridged, cracks close to shore, running northwest - southeast. Snow density .412.
9	54.	137.	5.	13.	Surface moderately ridged, few cracks, snow density .396.
16	57.	145.	4.	10.	" " " " "
23	52.	132.	5.	13.	" " " " " " " " .376. Ice thickness taken in same area as other readings but snow thickness varies from 2 or 3 in. to 15 in.

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Mould Bay (cont'd):					
1962					
Mar 2	59.	150.	8.	20.	Surface moderately ridged, few cracks
9	61.	155.	8.	20.	" " " " "
19	62.	157.	6.	15.	" " " " " Snow density .376.
23	64.	163.	6.	15.	Surface moderately ridged, " " Snow density .419.
30	64.	163.	10.	25.	Surface moderately ridged, " "
Apr 6	68.	173.	9.	23.	" " " " " Snow density .386.
13	66.	168.	19.	48.	Surface moderately ridged, few cracks, snow density .374. Starting this date the snow depth obs are the depths found directly over the ice hole.
20	76.	193.	9.	23.	Surface moderately ridged, few cracks, snow density .426.
27	71.	180.	15.	38.	" " " " " " " .438.
May 4	78.	198.	13.	33.	" " " snow density .396.
11	71.	180.	18.	46.	" " " " " .422.
18	No obs taken.				
25	74.	188.	20.	51.	Surface lightly ridged, snow density .450.
Jun 1	72.	183.	17.	43.	" " " " " .396. Few cracks
7	No measurements taken, water on ice.				
Nicolet, Site A:	Measurements made at Site "A" in Lake St. Peter(46°12'45"N, 72°39'54"W); see sketch map.				
1961					
Nov 30	Nicolet River freeze-up.				
Dec 14	Lake St. Peter freeze-up.				
15	4.5	11.			Surface smooth, few cracks
22	17.5	44.	Trace		" " no cracks 7.5 in. layer of water 2 in. below ice surface.
29	9.	23.	2.5	6.	Surface smooth, no cracks
1962					
Jan 29	Measurement at Site A, 24 in. (61 cm), surface moderately ridged 6 to 8 in. New snow. Old snow 1/2 to 1 in. (1 to 3 cm). Few cracks.				
Feb 9	27.	69.	2.	5.	Surface smooth, no cracks
16	29.	74.	3.	8.	" " " "
Mar 2	29.	74.	9.	23.	" " " "
23	32.	81.	13.	33.	" " " "
30	Nicolet River breakup.				
Nicolet, Site B:					
1962					
Jan 29	20.	51.			Surface moderately ridged 5 to 8 in. New snow. Old snow 1/2 to 1 in. (1 to 3 cm). Few cracks.
Feb 9	23.	58.	3.	8.	
16	25.	64.	3.	8.	
Mar 2	27.	69.	9.	23.	Surface smooth, no cracks
23	25.	64.	13.	33.	" " few cracks
Nicolet, Site C:					
1962					
Jan 29	Surface moderately ridged 6 to 8 in. New snow. Old snow 1/2 to 1 in. (1 to 3 cm), few cracks				
Nitchequon:	Measurements made approx. 150 ft south of landing dock. Dock runs due north - south; see sketch map.				
1961					
Oct 31	Small lakes in vicinity of station completely frozen over. Approx. 3 to 4 in. (8 to 10 cm) of ice forming along shores of main lake. Patches of thin ice floating in main lake.				
Nov 3	Main lake completely ice-free, small lakes in the vicinity of station frozen, approx. 1 to 3 in. (3 to 5 cm) thick.				
10	1.5	4.	Trace		Surface smooth, numerous cracks. Main lake completely frozen except for small cut northeast of station.
17	6.	15.	2.	5.	Surface smooth, numerous cracks
24	7.5	19.	5.	13.	" " " "

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Nitchequon (cont'd):					
1961					
Dec 1	8.	20.	9.	23.	Surface lightly ridged, numerous cracks. 2 in. (5 cm) slush.
8	8.	20.	7.	18.	" moderately ridged, few cracks. 4 in. (10 cm) slush.
15	11.	28.	5.	13.	" " " " " 5 in. (13 cm) slush.
22	16.	41.	4.	10.	" heavily ridged, few cracks. Small portion, northeast corner open since 15th.
29	19.	48.	8.	20.	Surface moderately ridged, few cracks.
1962					
Jan 3	Small cut northeast corner of lake completely frozen over.				
5	19.	48.	10.	25.	Surface lightly ridged, few cracks
12	20.	51.	7.	18.	" moderately ridged, few cracks
19	22.	56.	9.	23.	" " " " "
26	24.	61.	8.	20.	" " " " "
Feb 2	30.	76.	4.	10.	Surface heavily ridged, few cracks
9	31.	79.	6.	15.	" " " " "
16	33.	84.	8.	20.	" " " " "
23	35.	89.	10.	25.	" " " " "
Mar 2	37.	94.	11.	28.	Surface moderately ridged, few cracks
9	34.	86.	13.	33.	" " " " "
16	35.	89.	15.	38.	" " " " "
23	37.	94.	10.	25.	" " " " "
30	36.	91.	15.	38.	" lightly ridged, few cracks
Apr 6	37.	94.	12.	30.	" " " " "
13	35.	89.	12.	30.	" " " " " Slush in bays.
20	37.	94.	12.	30.	Surface lightly ridged, few cracks
27	39.	99.	11.	28.	" " " " " Slush in bays.
May 4	39.	99.	8.	20.	Surface lightly ridged, numerous cracks. 4 in. slush.
11	38.	97.	8.	20.	" " " " " 7 in. slush.
18	34.	86.	1.	3.	" " " " " slushy.
25	30.	76.			" " " " " Ice very porous, large portion northeast bay ice free.
Jun 1	20.	51.			Surface lightly ridged, numerous cracks
8	10.	25.			" " " " " 100 ft shore lead.
11	Northeast bay completely open water, leads along shoreline.				
30	Ice rotten, break-up of lake complete. Ready for use by float-equipped aircraft.				
Norman Wells: Measurements made approx. 300 yd off north shore of the MacKenzie River and 3/4 of a mile from the surface weather station. Bearing from station is approx. 205 deg true.					
1961					
Nov 10	6.	15.	1.	3.	Surface lightly ridged, no cracks
17	10.	25.	1.	3.	" " " " "
24	14.	36.	2.	5.	" " " few cracks
Dec 1	19.	48.	2.	5.	" " " " "
8	26.	66.	2.	5.	" " " " "
15	28.	71.	2.	5.	" " " " "
22	31.	79.	2.	5.	" " " " "
29	35.	89.	2.	5.	" " " " "
1962					
Jan 5	38.	97.	4.	10.	" " " " "
12	43.	109.	5.	13.	" " " " "
19	43.	109.	8.	20.	" " " " "
26	45.	114.	8.	20.	" " " " "
Feb 2	45.	114.	8.	20.	" " " " "
9	48.	122.	8.	20.	" " " " "
16	50.	127.	8.	20.	" " " " "
23	49.	124.	8.	20.	" " " " "
Mar 2	53.	135.	17.	43.	" " " " "
9	53.	135.	19.	48.	" " " " "
16	54.	137.	21.	53.	" " " " "
23	58.	147.	21.	53.	" " " " "
30	58.	147.	21.	53.	" " " " "

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Norman Wells (cont'd):					
1962					
Apr 6	57.	145.	21.	53.	Surface lightly ridged, few cracks
13	59.	150.	21.	53.	" " " " "
20	58.	147.	20.	51.	" " " " "
27	58.	147.	15.	38.	" " " numerous cracks
May 4	No measurement because of water on ice.				
23	Ice breaking up, no further measurements.				
Nunivak: Measurements made in Mekoryuk Bay.					
1961					
Nov 10	First small ice floes seen.				
13	Strong east southeast wind blew most of the floes to sea.				
20	Floes again seen w/ lots of slush.				
22	Slush and small floes.				
29	Slush and some large floes.				
Dec 5	Heavy drifts and slush cover the bay and sea.				
6	" " " "				
7	Bay frozen except for open channel near the mouth.				
8	Frozen part is safe to walk on.				
10	Strong south wind blew first ice out.				
13	Large frozen floes.				
15	Bay frozen for second time, and safe enough to walk on.				
21	19.	48.			Surface rough, few cracks
28	28.	71.	.5	1.	" " " "
1962					
Jan 4	47.5	121.			" " " "
11	47.5	121.			" " " "
18	46.	117.	3.	8.	" " " "
25	48.	122.	6.5	17.	" " " "
Feb 1	46.	117.	4.	10.	" " " "
8	47.	119.	9.	23.	" " " "
15	47.5	121.	6.	15.	Surface smooth, few cracks
22	53.	135.	10.	25.	" " " "
Mar 1	48.5	153.	12.	30.	" " " "
8	65.	165.	10.5	27.	" " " "
15	61.	155.	16.	41.	" " " "
22	58.	147.	19.5	50.	Surface rough due to snow drifts, few cracks
29	50.	127.	19.	48.	" " " " " " " "
31	Surface rough due to snow drifts, few cracks.				
Apr 5	No observation taken.				
12	44.	112.	22.	56.	
19	43.5	110.	17.	43.	
26	41.	104.	14.	36.	
May 3	40.5	103.	9.	23.	Surface rough, few cracks
10	38.	96.	9.	23.	" " " "
17	34.5	88.	8.5	22.	" " " "
24	32.5	83.	4.5	11.	" " " "
28	First lead observed on channel of bay.				
31	Large ice floes. Some ice from the sea moved into Mekoryuk Bay.				
Point Hope: Measurements made in south and north beaches.					
1961					
Oct 29	Open sea. No observation.				
31	Tiny pieces of ice crystals appearing here and there, seem to disappear w/ strong winds. Occasionally cakes of gravel frozen together shift around w/ the surf.				
Nov 4	No observation, open sea.				
6	Slush ice all along the north shore, extending out approx. 200 ft from shore.				
11	No observation.				
18	" "				
25	No observation because of continuing movement of ice.				
26	Drift-ice grinding at the point and heading directly northwest. North beach open all week due to heavy wind from the southeast.				
30	No fast ice on the north beach due to heavy winds and high tide. Fast ice forming on the south beach.				

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Point Hope (cont'd):					
1961					
Dec 2	No obs because of continuous moving of ice.				
9	8.5	22.	1.	3.	Surface smooth, no cracks
14	Heavy ridging at the point owing to northwesterly winds, highest ridge approx. 10 ft.				
16	14.	36.	1.	3.	Surface smooth, no cracks
19	Lead 1 mile from measurement site extending northwest to southwest, approx. 1/4 to 1 mile wide.				
23	19.	48.	1.	3.	Surface smooth, no cracks
29	South side shore closed.				
30	24.	61.	1.	3.	Lead on the south side approx. 1 mile wide tapering to a point 2 miles northwest of village. Surface smooth, no cracks.
1962					
Jan 6	28.	71.	1.	3.	Surface smooth, no cracks.
13	No obs, measurement site drifted out. During past week a southeasterly storm and high tides carried pack ice on to the north beach. Numerous leads west of the village and wide lead on the north beach. Ice very broken up.				
21	18.	46.	1.	3.	Surface smooth, no cracks. Obs site moved to the south beach. Heavy ridging (as high as 40 ft) all along this beach. Moderate ridges w/ smooth areas in between exist for about 2 miles to ice w/ numerous small cracks.
27	21.	53.	1.5	4.	Surface smooth, no cracks. Lead on south side of undetermined width, about 2 miles from the beach.
Feb 4	26.5	67.	1.	3.	Surface smooth, no cracks. Avg snow depth 1 in. (3 cm).
10	27.	69.	2.5	6.	" " " " " " " 1.5 in. (4 cm).
17	29.	74.	3.	8.	" " " " " " " 2.5 in. (6 cm).
25	30.	76.	10.	25.	" " " " " " " 5 in. (13 cm). A tidal crack approx. 1 1/2 in. wide and parallel w/ the shore obs between the measurement site and the beach.
Mar 3	31.	79.	10.5	27.	Surface smooth, no cracks. Avg snow depth 5 in. (13 cm).
10	31.5	80.	10.5	27.	" " " " " " " 5 in. (13 cm).
18	32.5	83.	10.5	27.	" " Avg snow depth 5 in. (13 cm). Very low tide, 2 cracks obs 20 ft between shore and measurement site.
24	33.	84.	8.5	22.	Surface smooth, no cracks. Avg snow depth 5 in. (13 cm).
31	33.	84.	9.	23.	" " " " " " " 5 in. (13 cm).
Apr 7	34.5	84.	9.5	24.	" " " " " " " 5 in. (13 cm).
14	36.	91.	9.5	24.	" " " " " " " 5 in. (13 cm).
21	36.	91.	9.5	24.	" " " " " " " 5 in. (13 cm).
28	36.	91.	10.	25.	" " " " " " " 5 in. (13 cm).
May 5	36.	91.	9.5	24.	" " " " " " " 5.5 in. (14 cm).
12	38.	97.	18.	46.	" " " " " " " 7 in. (18 cm).
20	37.5	95.	11.	28.	" " " " " " " 6 in. (15 cm).
27	40.	102.			" " " " " " " 3 in. (8 cm). Snow has melted at measurement site. The additional thickness possibly due to melted snow and refreezing.
Port Alsworth: Measurements made on Hardenbourg Bay and Lake Clark.					
1961					
Oct 26	First ice freezing conditions occurring over entire bay.				
Nov 4	6.	15.			Surface rough, few cracks
7	Old ice within 50 ft of shore broken up. New ice measured 3 1/2 in. old ice 7 1/2 in.				
11	7.5	19.			Surface rough, few cracks
18	10.5	27.	2.	5.	Surface snow covered, and smooth. Old ice (near shore) 10 1/2 in., new ice 7 1/4 in.
25	11.	28.	2.	5.	Snow cover drifted. Surface rough and snow covered. Old ice (near shore) 11 in., new ice 10 1/2 in.
Dec 2	12.	30.			Surface rough, few cracks
9	13.	33.			Snow cover 2 in. water, surface rough, few cracks
16	14.5	37.			Surface smooth, few cracks
18	Main lake (Lake Clark) frozen over entirely. Surface partly rough and partly smooth.				
23	23.5	60.			Surface rough, few cracks. 12 in. ice on Lake Clark, few scattered pressure ridges.
30	30.	76.			Occasional snow drifts, surface rough, few cracks Lake Clark 17 in. partly rough and partly smooth, few cracks and pressure ridges. Very rough in front of Tanalian Point and beyond for about 1 mile.
1962					
Jan 6	34.5	88.	12.	30.	Surface very rough, few cracks. Lake Clark 19 in. (48 cm). Snow drifts 12 to 18 in. (30 to 46 cm). Few pressure cracks.
13	36.	91.	5.	13.	Surface very rough, snow drifts 12 to 18 in. (30 to 46 cm).
20	37.	94.			Slush 6 to 12 in. (15 to 30 cm) due to overflow. Surface very rough, few cracks.

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Port Alsworth (cont'd):					
1962					
Jan 27	38.	97.			Snow cover frozen overflow, surface very rough, few cracks. Huge pressure cracks.
Feb 3	43.	109.			Snow cover variable 12 to 24 in. (30 to 61 cm). Surface very rough, no cracks. Snow cover in drifts.
10	46.	117.			Snow cover variable 12 to 24 in. (30 to 61 cm), in drifts. Surface very rough, no cracks.
17	46.	117.			Snow cover variable 6 to 12 in. (15 to 30 cm), in drifts. Surface rough due to overflow, no cracks.
24	51.	130.			Snow cover variable 6 to 12 in. (15 to 30 cm), in drifts. Surface rough due to overflow, few cracks.
Mar 3	49.	124.			Snow cover variable 12 to 24 in. (30 to 61 cm), in drifts. Surface very rough, no cracks.
10	47.	119.			Snow cover variable 12 to 24 in. (30 to 61 cm), in drifts. Surface very rough, no cracks. Open hole in narrows.
17	47.	119.			Snow cover variable 12 to 24 in. (30 to 61 cm), in drifts. Surface very rough, few cracks.
24	49.	124.			Snow cover variable 12 to 24 in. (30 to 61 cm), in drifts. Surface very rough, few cracks.
31	49.	124.			Snow cover variable 12 to 18 in. (30 to 46 cm), overflow. Surface rough, few cracks. Narrows open across from shore to shore. Ice very soft on surface due to warm weather and overflow.
Apr 7	42.	107.			Surface very rough, numerous cracks
14	39.	99.			" " " " "
21	37.	94.			" " " " "
28	30.	76.			" " " " "
30	Open water in narrows and around edges.				
May 5	28.	71.			" " " few cracks
12	17.	43.			" " " numerous cracks
19	Ice middle of bay unable to measure.				
26	Ice still in bay and main lake.				
31	Ice on lower end of Lake Clark, this area not open yet for boats. Upper Lake Clark open for boats or planes. Hardenbourg Bay clear of ice.				

Port Harrison: Measurements made midway across the Innuksuak River between the Radiosonde Station, dock and the Anglican Mission; see sketch map.

1961					
Nov 24	4.	10.			Surface smooth, no cracks
Dec 1	12.	30.	1.	3.	" " " "
8	16.	41.	1.	3.	" " " "
15	22.	56.	1.	3.	" " " "
22	27.	69.	1.	3.	" " " "
29	30.	76.	3.	8.	" " " "
1962					
Jan 5	42.	107.	3.	8.	" " " "
12	45.	114.	2.	5.	" " " "
19	52.	132.	2.	5.	" " " "
26	55.	140.	2.	5.	" " " "
Feb 3	55.	140.	2.	5.	" " " "
9	65.	165.	2.	5.	" " " "
16	80.	203.	3.	8.	" " " "
23	75.	191.	3.	8.	" " " "
Mar 2	82.	208.	3.	8.	" " " "
9	80.	203.	2.	5.	" " " "
16	84.	213.	2.	5.	" " " "
23	83.	211.	3.	8.	" " " "
31	86.	218.	3.	8.	" " " "
Apr 7	86.	218.	3.	8.	" " " "
14	88.	224.	3.	8.	" " " "
20	90.	229.	3.	8.	" " " "
27	86.	218.	3.	8.	" " " "
May 4	94.	239.	1.	3.	" " " "
11	96.	244.	2.	5.	" " " "

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Port Harrison (cont'd):					
1962					
May 18	84.	213.	5.	13.	Snow cover slushy, surface smooth, no cracks
25	78.	198.	6.	15.	" " " " " " "
27	Ice surface flooded by water upstream. Water later froze forming a crust.				
31	Ice surface flooded again by water upstream. Several surface cracks.				
Jun 1	72.	183.	6.	15.	Snow cover slushy, surface smooth, few cracks
8	67.	170.	6.	15.	" " " " " " "
15	40.	102.	12.	30.	" " " " " " "
Resolute: Measurements made approx. at the center of Resolute Bay, 1/2 mile from shore. Site is relocated annually by triangulation on shore survey markers.					
1961					
Sep 26	Freeze-up occurred.				
Oct 1	Ice thickness variable 3 to 4 in. (8 to 10 cm), snow cover 1 in. (3 cm). Surface smooth, few cracks.				
8	10.	25.	2.	5.	Surface moderately ridged, few cracks
13	8.	20.	1.	3.	Few cracks
21	14.	36.	2.	5.	" "
29	18.	46.	6.	15.	" " Large open lead extends shore to shore at the mouth of Resolute Bay south of Griffith Island into Barrow Strait to the horizon. Snow density .328.
Nov 3	20.	51.	6.	15.	Snow density .326. Snow drifted 2 in. (5 cm), snow slushy at ice interface.
10	20.	51.	6.	15.	Snow density .316. Snow hard packed in low drifts.
18	26.	66.	11.	28.	" " .490. " " " and drifted.
24	29.	74.	12.	30.	" " .380. " " " " "
Dec 3	27.	69.	6.	15.	" " .338 in low drifts.
8	30.	76.	6.	15.	" " .402 in small drifts, few cracks
15	33.	84.	8.	20.	" " .392. Surface lightly ridged, few cracks
22	32.	81.	11.	28.	" " .360.
29	34.	86.	13.	33.	" " .380.
1962					
Jan 5	36.	91.	10.	25.	Surface lightly ridged, few shore cracks
12	40.	102.	11.	28.	" " " " " " " Snow density .380.
19	43.	109.	11.	28.	" " " " " " " " " .398. Snow surface gullied.
26	42.	107.	10.	25.	Surface lightly ridged, few shore cracks. Few tidal cracks observed throughout the month. Surface of the ice was characterized by light ridging. Snow density .368.
Feb 4	45.	114.	14.	36.	Surface gullied, many cracks along shore. Snow density .372.
9	47.	119.	12.	30.	Surface lightly ridged, few cracks along shore. Snow density .296.
16	49.	124.	12.	30.	Surface lightly ridged, " " " " " " .368.
24	52.	132.	13.	33.	Surface lightly ridged, " " " " " " .360. Surface of ice was characterized by light ridging. Few tidal cracks, near shore, observed throughout the month.
Mar 2	52.	132.	15.	38.	Surface rippled, few shore cracks.
11	54.	137.	15.	38.	Surface gullied, " " "
16	56.	142.	16.	41.	" " " " " Snow density .356.
23	58.	147.	15.	38.	" " " " " " " .370.
31	58.	147.	20.	51.	Surface drifted, " " " " " " .378. A few tidal cracks, near shore, observed throughout the month, maximum width across top of crack approx. 8 in. Hard packed snow on top of ice was rippled or gullied until end of month. At this time a fresh fall of snow produced soft drifts up to approx. 1 ft on the surface.
Apr 6	58.	147.	21.	53.	Surface rippled, shore cracks. Snow density .360.
13	60.	152.	21.	53.	Few shore cracks. Snow density .396. Snow smooth and drifting.
20	63.	160.	20.	51.	Surface rippled, shore cracks. Snow density .416.
27	70.	178.	17.	43.	" " " " " " .372. A few tidal cracks, near shore, observed throughout the month.
May 4	65.	165.	23.	58.	Surface rippled, tidal cracks. Snow density .416.
12	66.	168.	20.	51.	" " " " " " .390.
19	65.	165.	20.	51.	Surface lightly ridged, tidal cracks.
25	65.	165.	18.	46.	Surface rippled.

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Resolute (cont'd):					
1962					
Jun 2	64.	163.	19.	48.	Surface slushy. Snow density .460.
8	69.	175.	15.	38.	Numerous cracks. " " .384. Tidal cracks observed near shore.
15	69.	175.			Surface covered w/ 8 in. water, many cracks.
22	61.	155.			Numerous cracks. Ice rotten and puddled, thin spots showing.
29	52.	132.			Many cracks. Cracks over the entire bay. Holes visible. Open water visible to seaward since June 15th.
Jul 7	45.	114.			Bay mostly open water, wide shore leads.
13	35.	89.			Wide shore leads and open water area at mouth of bay.
19	Ice broken. Bay clearing rapidly.				Reports end this date.
Sachs Harbour: Measurements made 200 yd south of the Sachs Harbour village.					
1961					
Oct 13	5.	13.	.5	1.	Surface smooth, no cracks
20	8.	20.	1.	3.	" " " "
27	14.	36.			Snow cover variable 1 to 2 in. (3 to 5 cm).
Nov 3	16.	41.			" " " 2 to 3 in. (5 to 8 cm). No cracks
10	20.	51.	3.	8.	No cracks
17	22.	56.	2.	5.	" "
24	23.	58.	3.	8.	" "
Dec 1	28.	71.	2.	5.	" " 2 in. snow drifts.
8	31.	79.	2.	5.	" " 2 in. snow drifts.
15	35.	89.	2.	5.	" " 4 in. snow drifts.
22	39.	99.	2.	5.	" " 2 in. snow drifts.
29	42.	107.	2.	5.	" " 4 in. snow drifts.
1962					
Jan 5	44.	112.	2.	5.	Surface smooth, no cracks
12	48.	122.	2.	5.	" " " "
19	50.	127.	3.	8.	" " " "
26	52.	132.	3.	8.	" " " "
Feb 2	55.	140.	4.	10.	No cracks
9	No observation taken.				
16	" " "				
23	57.	145.	5.	13.	" "
Mar 2	60.	152.	7.	18.	Surface smooth, no cracks
9	62.	157.	7.	18.	" " " "
16	62.	157.	8.	20.	" " " "
23	66.	168.	8.	20.	" " " "
30	67.	170.	8.	20.	" " " "
Apr 6	67.	170.	9.	23.	Few cracks
13	67.	170.	9.	23.	" "
20	67.	170.	10.	25.	" "
27	69.	175.	12.	30.	" "
May 4	71.	180.	12.	30.	Surface smooth, few cracks
11	69.	175.	12.	30.	" " " "
18	71.	180.	12.	30.	" " " "
25	72.	183.	12.	30.	" " " "
					Lead 5 miles south of station, width variable depending on wind direction.
Jun 1	73.	185.	30.	76.	Few cracks. 9 in. snow drifts.
8	67.	170.	1.	3.	" " 4 in. snow drifts.
South Baymouth: Measurements made about 100 yd south southeast of end of fisheries station wharf.					
1962					
Jan 5	6.	15.	3.	8.	Surface smooth, no cracks
12	8.5	22.	4.	10.	" " " "
19	12.5	32.	3.	8.	" " " "
					About 4 in. (10 cm) of slush exists on ice.
26	10.5	27.	2.	5.	Surface smooth, no cracks. 5 in. (13 cm) slush exists on ice w/ the top layer frozen enough to support a man. Water also found on top of the solid ice.

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
South Baymouth (cont'd):					
1962					
Feb 2	13.	33.	4.	10.	Surface smooth, no cracks
9	16.	41.	4.	10.	" " " "
16	16.	41.	8.	20.	" " and lightly ridged.
23	17.	43.	10.	25.	" " " " "
Mar 2	17.	43.	6.	15.	Surface lightly ridged, no cracks
9	17.	43.	4.	10.	" " " " "
16	17.	43.	5.	13.	Surface smooth, no cracks
23	17.	43.	1.	3.	" " " "
30	17.	43.			" " " "
Apr 22	Breakup.				
Spence Bay: Measurements made in Spence Bay Harbour, about 250 yd south of North Shore; see sketch map.					
1961					
Sep 19	Harbor filled w/ slush.				
23	Harbor frozen over during early morning.				
28	Spence Bay proper frozen over.				
29	8.	20.	1.	3.	Surface smooth, no cracks
Oct 6	10.	25.	2.	5.	" " " "
13	15.	38.	2.	5.	" " " "
20	18.	46.	2.	5.	" " " "
27	20.	51.	2.	5.	" " " "
Nov 3	23.	58.	2.	5.	" " " "
10	26.	66.	3.	8.	" " " "
17	29.	74.	1.	3.	" " " "
24	31.	79.	1.	3.	Surface lightly ridged, no cracks
Dec 1	No observation taken.				
8	39.	99.	3.	8.	Surface smooth, few cracks
29	51.	130.	3.	8.	Surface lightly ridged, few cracks
1962					
Jan 5	53.	135.	6.	15.	" " " no cracks
26	64.	163.	3.	8.	Surface smooth, no cracks
Feb 2	68.	173.	3.	8.	" " " "
9	71.	180.	3.	8.	" " " "
16	73.	185.	3.	8.	" " " "
23	77.	196.	3.	8.	" " " "
Mar 2	80.	203.	3.	8.	" " " "
9	82.	208.	3.	8.	" " " "
16	84.	213.	4.	10.	" " " "
23	85.	216.	4.	10.	" " " "
30	85.	216.	5.	13.	" " " "
Apr 6	87.	221.	5.	13.	" " " "
13	88.	224.	5.	13.	" " " "
Talkeetna: Measurements made on Susitna River West of Talkeetna.					
1961					
Nov 4	No ice.				
11	" "				
18	4.	10.	14.	36.	Surface smooth, few cracks Susitna River is open except for the ice bridge used to cross to Talkeetna.
25	6.	15.	12.	30.	Surface smooth, few cracks Chulitna River and Talkeetna River frozen solid but the ice bridge (about 100 ft long) is the only spot used to cross in about 2 miles in either direction. This channel is about 70 ft wide and about 20 ft deep.
Dec 2	18.	46.	8.	20.	Surface smooth, no cracks. Avg snow depth 12 in. (30 cm).
9	24.	61.			" " water overflow. Avg snow depth 14 in. (36 cm).
16	26.	66.	6.	15.	" " few cracks. Avg snow depth 19 in. (48 cm).
23	30.	76.			" " " " " " " 10 in. (25 cm).
30	36.	91.			" " " " " " " 10 in. (25 cm). Heavy equipment now used to cross ice. Main Susitna channel still open at some spots.

ICE THICKNESSES (1961-1962)

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Talkeetna (cont'd)					
1962					
Jan 6	36.	91.	14.	36.	Surface smooth, Avg snow depth 14 in. (36 cm).
13	32.	81.	16.	41.	" " " " " 12 in. (30 cm).
20	34.	86.	9.	23.	" " " " " 12 in. (30 cm).
27	38.	97.	24.	61.	" " " " " 24 in. (61 cm). Ice appears to have dropped about 2 ft, especially noticeable along the banks of the river.
Feb 3	38.	97.	20.	51.	Surface smooth, no cracks. Avg snow depth 20 in. (51 cm).
10	40.	102.	19.	48.	" " " " " " " 19 in. (48 cm).
17	41.	104.	18.	46.	" " " " " " " 20 in. (51 cm).
24	42.	107.	48.	122.	" " " " " " " 48 in. (122 cm). Heavy snowfall (about 4 ft deep) across the Susitna.
Mar 3	57.	145.	45.	114.	Surface smooth, no cracks. Avg snow depth 45 in. (114 cm).
10	61.	155.	46.	117.	" " " " " " " 46 in. (117 cm).
17	58.	147.	40.	102.	" " " " " " " 36 in. (91 cm).
24	57.	145.	36.	91.	" " " " " " " 36 in. (91 cm).
31	51.	130.	30.	76.	" " " " " " " 24 in. (61 cm). Rivulets of melting water appearing in sloughs. Ice still solid.
Apr 7	48.	122.	6.	15.	Surface smooth, no cracks. Avg snow depth 20 in. (51 cm).
14	34.	86.	12.	30.	" " " " " " " 20 in. (51 cm).
21	23.	58.	18.	46.	" " " " " " " 16 in. (41 cm).
28	11.	28.	14.	36.	" " " " " " " 14 in. (36 cm). Susitna Channel starting to open on both sides of measurement site. Talkeetna Channel open, water fast. Still crossing river by north route, but not very safe.
May 5	2.	5.			Snow cover 15 in. water. Channel 6 ft wide. Avg snow depth 12 in. (30 cm). Water in Susitna Channel at measurement site started running.
12	Avg snow depth 8 in. (20 cm). Ice formed on either side of channel. Channel about 6 ft wide.				
19	Patches of snow. Susitna Channel ice free from bank to bank.				
26	Large ice blocks or floes floating down stream.				
29	Navigation started across river.				
Tanacross: Measurements made on Tanana River directly in the middle of river outward from the native store.					
1961					
Oct 8	Ice started running.				
10	Ice became thicker during the 9th and 10th.				
11	Ice jammed up, but still some open water below the village.				
12	No one able to cross yet.				
13	Ice thick enough to walk on.				
14	Heavy sleds being pulled across river.				
16	15.	38.			Surface rough and lightly ridged, open water below village. Avg snow depth 1 in. (3 cm).
23	12.	30.			5 in. of overflow water on top of ice w/ frozen crust. Surface rough and lightly ridged, open water below village. Avg snow depth 1 in. (3 cm).
30	24.	61.	4.	10.	Surface moderately ridged, open water below village freezing up fast. Avg snow depth 5 in. (13 cm).
Nov 6	29.	74.	4.	10.	Surface moderately ridged, few cracks. Avg snow depth 4 in. (10 cm).
13	30.	76.	9.	23.	Surface " " " " " " " 9 in. (23 cm).
20	27.	69.	5.	13.	Surface " " " " " " " 5 in. (13 cm).
27	30.	76.	6.	15.	Surface " " " " " " " 6 in. (15 cm). River still open shore to shore about 1000 ft below village.
Dec 4	21.	53.	5.	13.	Surface lightly ridged, few cracks. Avg snow depth 5 in. (13 cm).
11	24.	61.	8.	20.	Surface " " " " " " " 8 in. (20 cm).
18	24.	61.	4.	10.	Surface " " " " " " " 4 in. (10 cm).
25	26.	66.	10.	25.	Surface " " " " " " " 10 in. (25 cm).
29	Cold weather closed all ice cracks below the village. -63 deg F. Water still flowing under the ice.				

Date	Ice Thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Tanacross (cont'd)					
1962					
Jan 1	26.	66.	9.	23.	Surface lightly ridged, no cracks. Avg snow depth 9 in. (23 cm).
8	26.	66.	7.	18.	Surface " " " " " " " 7 in. (18 cm).
15	27.	69.	8.	20.	Surface " " " " " " " 8 in. (20 cm).
22	27.	69.	9.	23.	Surface " " " " " " " 9 in. (23 cm).
29	24.	61.	8.	20.	Surface " " " " " " " 8 in. (20 cm).
Feb 5	36.	91.	12.	30.	Surface " " " " " " " 12 in. (30 cm).
12	37.	94.	9.	23.	Surface " " " " " " " 9 in. (23 cm).
19	42.	107.	13.	33.	Surface " " " " " " " 13 in. (33 cm).
26	39.	99.	12.	30.	Surface " " " " " " " 12 in. (30 cm).
Mar 5	38.5	98.	13.	33.	Surface " " " " " " " 13 in. (33 cm).
12	40.	102.	12.	30.	Surface " " " " " " " 12 in. (30 cm).
19	35.	89.	9.	23.	Surface " " " " " " " 9 in. (23 cm).
26	34.	86.	8.	20.	Surface " " " " " " " 8 in. (20 cm). Warm weather beginning to thaw ice.
Apr 2	40.	102.	10.	25.	Surface smooth, few cracks. Avg snow depth 10 in. (25 cm).
9	39.	99.	10.	25.	" " " " " " " 10 in. (25 cm).
16	40.	102.	6.	15.	" " numerous cracks. Avg snow depth 6 in. (15 cm). Ice becoming soft all the way through.
23	39.	99.			Surface smooth, numerous cracks.
30	41.	104.	8.	20.	" " " "
May 7	38.	97.			" " " "
14					River open and no longer crossed safely.

Trout Lake: Measurements made 150 yd due south of Radiosonde Office Building and 100 yd offshore; see sketch map. The entire southeast bay is used an an aircraft landing area. Tractor trains park, before unloading near the ice measurement location.

1961					
Nov 4	3.	8.	Trace		Surface smooth, no cracks. Ice covering northeast and southeast bays, rest of lake still open.
10	7.	18.	1.	3.	Surface smooth, no cracks
17	7.	18.	2.	5.	" " " "
24	11.	28.	3.	8.	" " " "
Dec 1	12.	30.	4.	10.	" " " "
8	15.	38.	11.	28.	" " " "
15	19.	48.	5.	13.	" " " "
22	20.	51.	6.	15.	" " " "
29	24.	61.	9.	23.	" " " "
1962					
Jan 5	21.	53.	7.	18.	" " " "
12	22.	56.	7.	18.	" " " "
19	25.	64.	7.	18.	" " " "
26	23.	58.	7.	18.	" " " "
Feb 2	29.	74.	6.	15.	" " " "
9	32.	81.	7.	18.	" " " "
16	32.	81.	9.	23.	" " " "
23	32.	81.	9.	23.	" " " "
Mar 2	33.	84.	8.	20.	" " " "
9	31.	79.	10.	25.	" " " "
16	33.	84.	8.	20.	" " " "
23	35.	89.	8.	20.	" " " "
30	37.	94.	6.	15.	" " " "
Apr 6	36.	91.	6.	15.	" " " "
13	38.	97.	10.	25.	" " " "
20	37.	94.	8.	20.	" " " "
27	37.	94.	7.	18.	" " " "

ICE THICKNESSES (1961-1962)

Date	Ice thickness (in.)	(cm)	Snow Depth (in.)	(cm)	Remarks
Trout Lake (cont'd):					
1962					
May 4	36.	91.	1.	3.	Surface smooth, no cracks
11	33.	84.			" " " "
18	24.	61.			" " " "
25	Ice breaking up.				
28	Bay clear of ice.				
Unalakleet: Measurements made 100 - 180 yd east of Covenant Church at junction of Kouwegok Slough and Unalakleet River.					
1961					
Oct 7	Pancake ice formed during night.				
8	New ice about 1/4 in. thick.				
10	Slush ice in main river during morning. Thickness of slush ice 1 1/2 in.				
11	Frozen shore to shore w/ heavy ridging in main river. Thickness of ice 4 1/4 in.				
14	7.	18.			Surface lightly ridged, few cracks
19	High water carried ice from river leaving few scattered cakes.				
21	No obs due to high tide rendering sheet ice dangerous condition.				
28	6.5	17.			Surface lightly ridged.
Nov 4	10.	25.			Surface moderately ridged. Few cracks along shore 25 to 50 ft length 1/4 to 1/2 in. wide.
11	15.	38.			Surface moderately ridged. Few cracks 1/4 in. wide.
18	17.5	44.			" " " " " 3/4 in. wide.
25	17.	43.	9.	23.	" " " " " 3/4 in. wide. 9 to 12 in. soft snow cover.
Dec 2	21.	53.	2.	5.	Surface smooth. Few cracks 1/4 in. wide. Avg snow depth 6 in. (15 cm), hard.
9	26.	66.	12.	30.	Surface lightly ridged. Few cracks 1/4 in. wide. Snow depth 6 to 12 in. (15 to 30 cm), hard.
16	31.	79.			Surface lightly ridged. Few cracks 1/2 in. wide. Snow depth 7 to 9 in. (18 to 23 cm), very dense. Cracks run south to north.
23	30.	76.	8.	20.	Surface lightly ridged. Few cracks 1/2 in. wide. Snow depth 7 to 9 in. (18 to 23 cm), compact.
30	Too stormy for testing ice thickness. Snow still blowing (wind about 15 to 25 mph).				
31	37.	94.	6.	15.	Surface lightly ridged. Snow depth 7 to 9 in. (18 to 23 cm), compact. Surface of ice covered w/ snow, no cracks, therefore, visible.
1962					
Jan 6	34.	86.	11.5	29.	Surface lightly ridged, no cracks. Avg snow depth 11.5 in. (29 cm), very dense. 1 1/2 in. soft fresh snow.
13	48.5	123.			Surface lightly ridged, few cracks. Avg snow depth 6 in. (15 cm), soft.
14	South wind caused some water to flood over the ice surface.				
20	43.	109.	8.	20.	Surface lightly ridged. Avg snow depth 8 to 10 in. (20 to 25 cm), soft.
27	55.	140.			Surface moderately ridged
Feb 4	48.	122.	15.	38.	Surface smooth, no cracks. Avg snow depth 20 in.-(51 cm), hard. Strong winds during first part of February, delayed obs because ice hole fills up too quickly w/ snow when blowing too hard.
10	54.	137.	21.5	55.	Surface smooth, no cracks. Avg snow depth 26 in. (66 cm), hard.
17	55.	140.	26.5	67.	" " " " " " 36 to 42.5 in. (91 to 108 cm).
24	63.	160.	26.5	67.	Surface smooth, " " " " " 36 to 42.5 in. (91 to 108 cm). Snow along shoreline is about 6 ft or more in some places.
Mar 3	59.	150.	22.	56.	Surface smooth, few cracks. Avg snow depth 12 to 30 in. (30 to 76 cm).
10	62.	157.	20.	51.	Surface lightly ridged, crack 3 in. wide north to south. Avg snow depth 12 to 30 in. (30 to 76 cm). High water caused flooding over ice surface.
17	53.5	136.	15.5	39.	Surface smooth, no cracks. Avg snow depth 10 to 14 in. (25 to 36 cm).
24	51.5	131.	15.5	39.	Surface smooth, no cracks. Avg snow depth 10 to 14 in. (25 to 36 cm).
31	53.5	136.	14.	36.	Surface smooth, no cracks. " " " 9 to 14 in. (23 to 36 cm).
Apr 7	56.	142.	20.	51.	Surface lightly ridged, 3 in. cracks. Avg snow depth 26 in. (66 cm), dense.

Date	Ice Thickness (in.)	Ice Thickness (cm)	Snow Depth (in.)	Snow Depth (cm)	Remarks
Unalakleet (cont'd):					
1962					
Apr 14	64.5	164.	9.	23.	Surface smooth, no cracks. Avg snow depth 9 in. (23 cm). Mild weather caused snow on the surface of ice to melt, then later it would freeze.
21	64.	163.	6.	15.	Surface smooth, no cracks. Avg snow depth 8 in. (20 cm), soft.
28	67.	170.			Snow cover 23 in. (58 cm), hard; 5 in. (13 cm), soft. Surface smooth, no cracks. Avg snow depth 32 in. (81 cm), hard; 6 in. (15 cm), soft.
May 5	68.	173.	20.	51.	Surface smooth, no cracks. Avg snow depth 27 in. (69 cm).
12	52.	132.	14.	36.	" " " " " " " 18 in. (46 cm), soft. Slush and snow on the ice soft. Some puddles of water along the river ice and Kouwegok Slough.
19	56.	142.			Surface lightly ridged. Few cracks along slough and parts of the river.
26	No obs due to water on ice. Ice broke in main river. Ice still in Kouwegok River, but leads and cracks make it dangerous.				
Yellowknife:	Measurements made approx. 150 yd northwest of the Pacific Western Airlines and Wardair Docks on the southeast shore of the Back Bay; see sketch map. The bay runs approx. north - south and is used extensively by ski- and float-equipped aircraft.				
1961					
Oct 8	Ice first appeared in Back Bay.				
20	Back Bay now completely frozen over. Ice present considered unsafe for measurements.				
27	11.	28.	6.	15.	Surface smooth, no cracks
Nov 3	11.	28.	4.	10.	" " " "
10	15.	38.	5.	13.	" " " "
17	17.	43.	6.	15.	" " " "
24	18.	46.	6.	15.	" " " "
Dec 1	21.	53.	6.	15.	" " " "
8	24.	61.	5.	13.	" " " "
15	27.	69.	5.	13.	" " " "
22	33.	84.	5.	13.	" " " "
29	33.	84.	6.	15.	" " " "
1962					
Jan 5	34.	86.	7.	18.	" " " "
12	37.	94.	7.	18.	" " " "
19	41.	104.	6.	15.	" " " "
26	43.	109.	6.	15.	" " " "
Feb 2	46.	117.	6.	15.	" " " "
9	47.	119.	7.	18.	" " " "
16	49.	124.	7.	18.	" " " "
23	51.	130.	7.	18.	" " " "
Mar 2	55.	140.	7.	18.	" " " "
9	55.	140.	7.	18.	" " " "
16	58.	147.	7.	18.	" " " "
23	59.	150.	7.	18.	" " " "
30	56.	142.	7.	18.	" " " "
Apr 6	60.	152.	6.	15.	" " " "
13	60.	152.	6.	15.	" " " "
20	57.	145.	5.	13.	" " " "
27	63.	160.	4.	10.	" " " "
May 4	61.	155.	2.	5.	" " " "
11	62.	157.			Patches of snow. Surface smooth, no cracks.
18	57.	145.			Few thin patches of snow. Surface smooth, no cracks.
25	49.	124.			Surface candled, no cracks. Last measurement possible due to water at shore.
Jun 7	Back Bay completely clear of ice.				

APPENDIX A

SKETCHES OF LOCATION OF ICE MEASUREMENT SITES

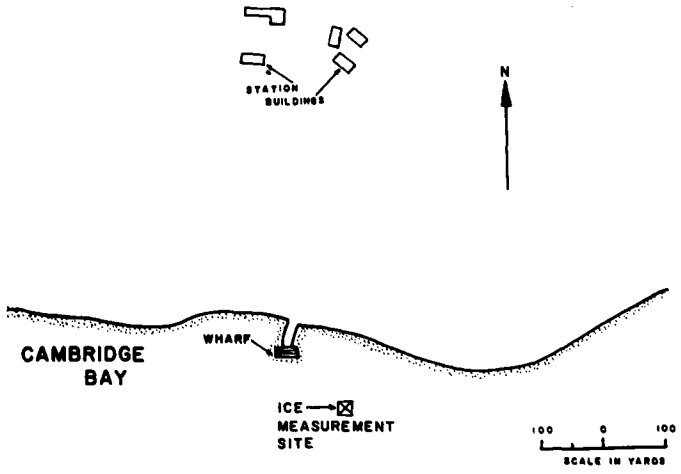
ALERT, NWT

ANGMAGSSALIK, GREENLAND

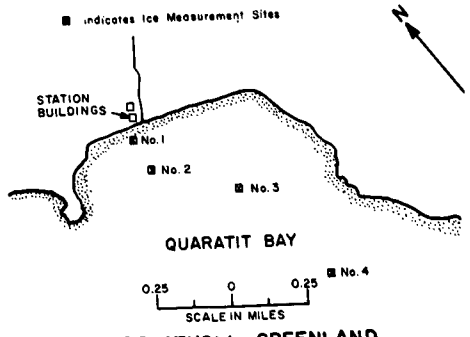
BAKER LAKE, NWT

BROCHET, MANITOBA

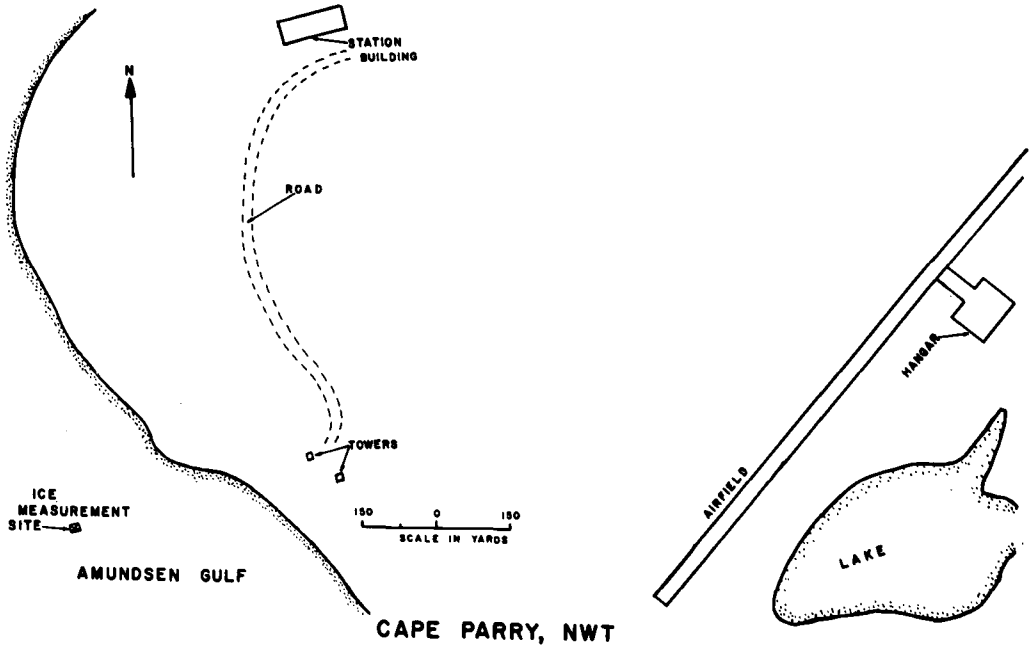
APPENDIX A



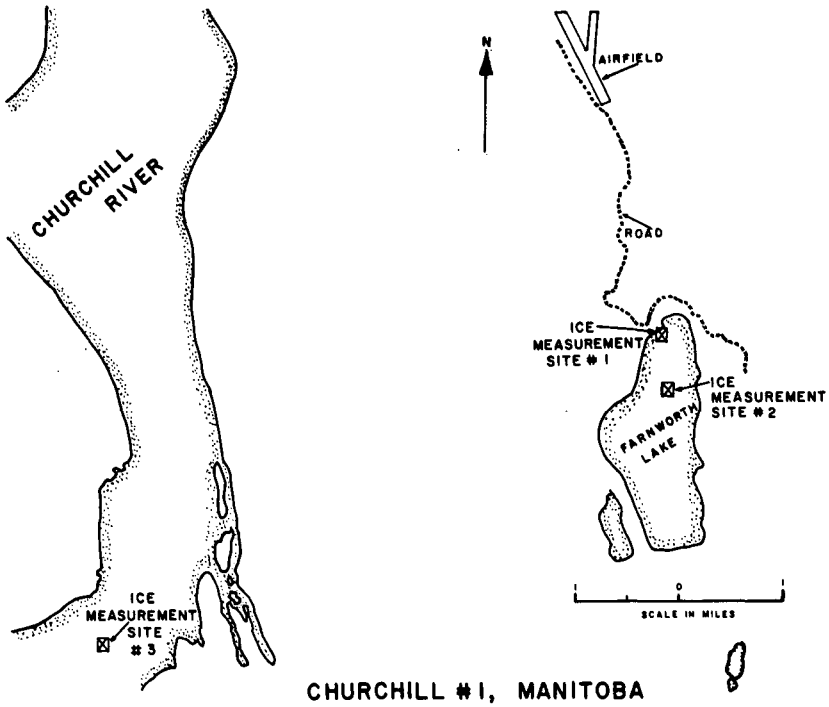
CAMBRIDGE BAY, NWT



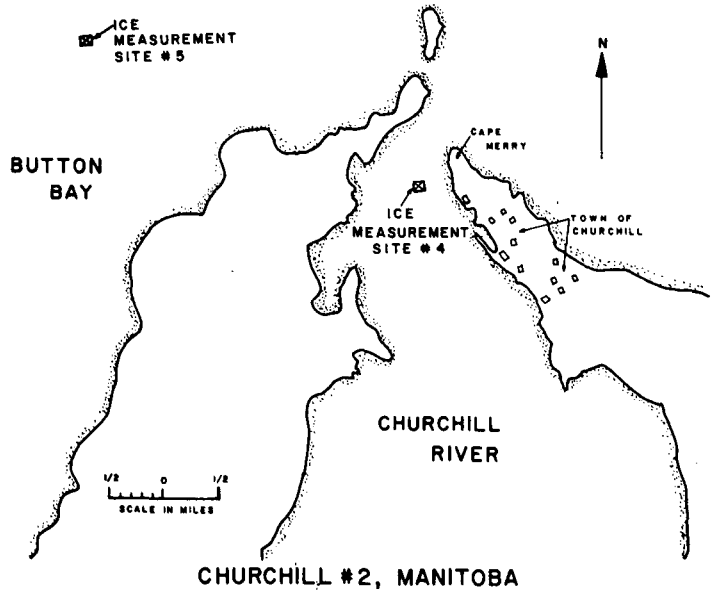
CAPE ATHOLL, GREENLAND



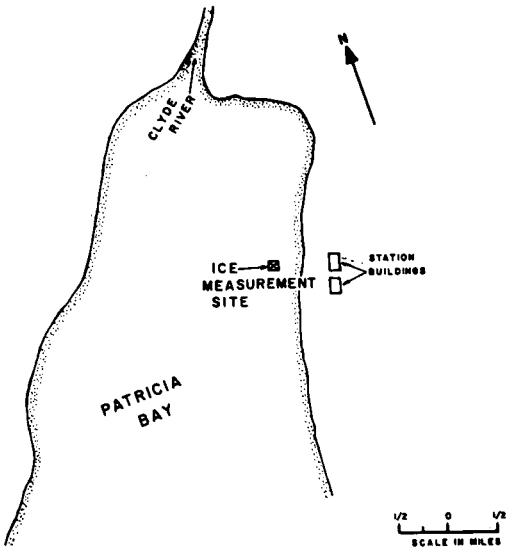
CAPE PARRY, NWT



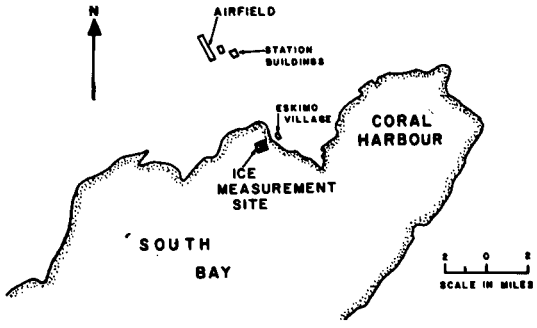
CHURCHILL #1, MANITOBA



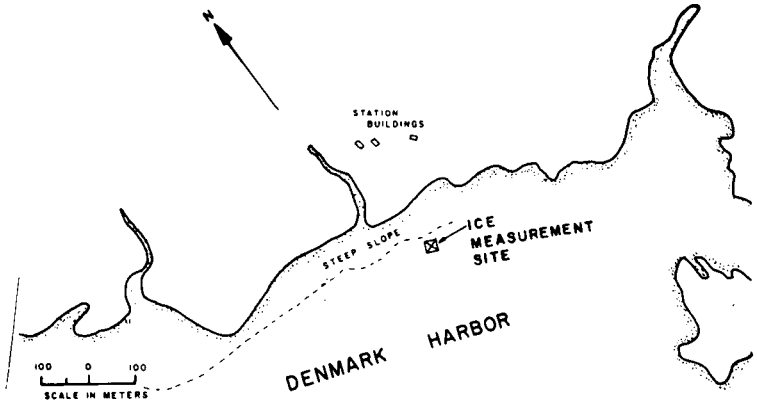
CHURCHILL #2, MANITOBA



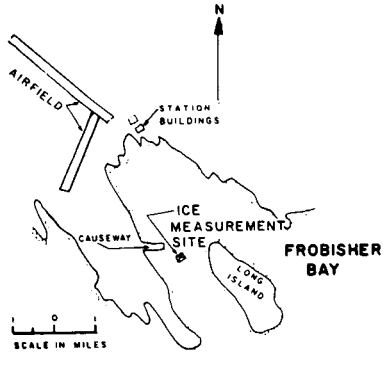
CLYDE RIVER, NWT



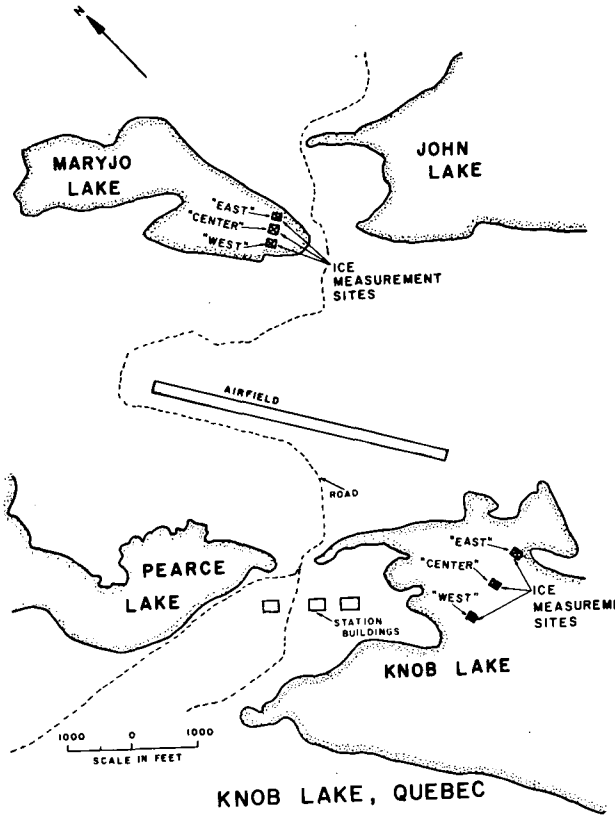
CORAL HARBOUR, NWT

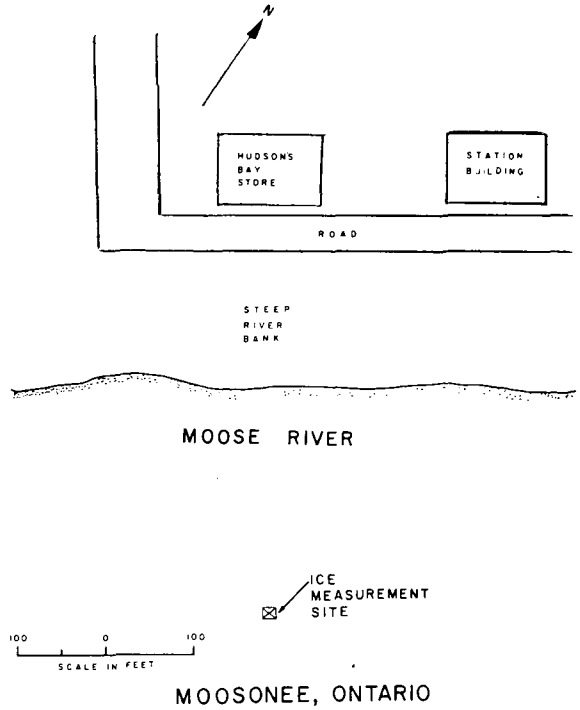


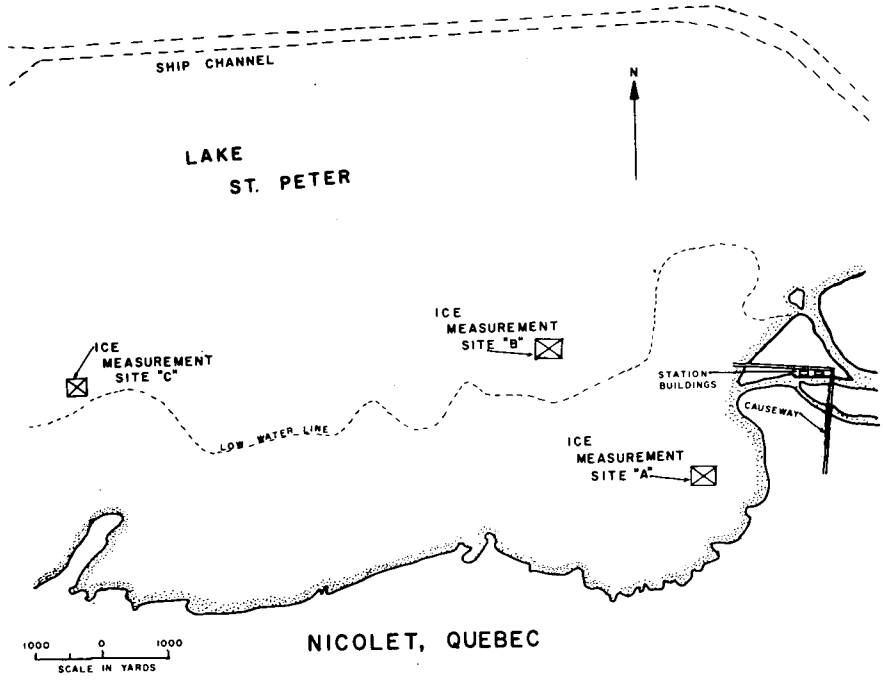
DANMARKSHAVN, GREENLAND



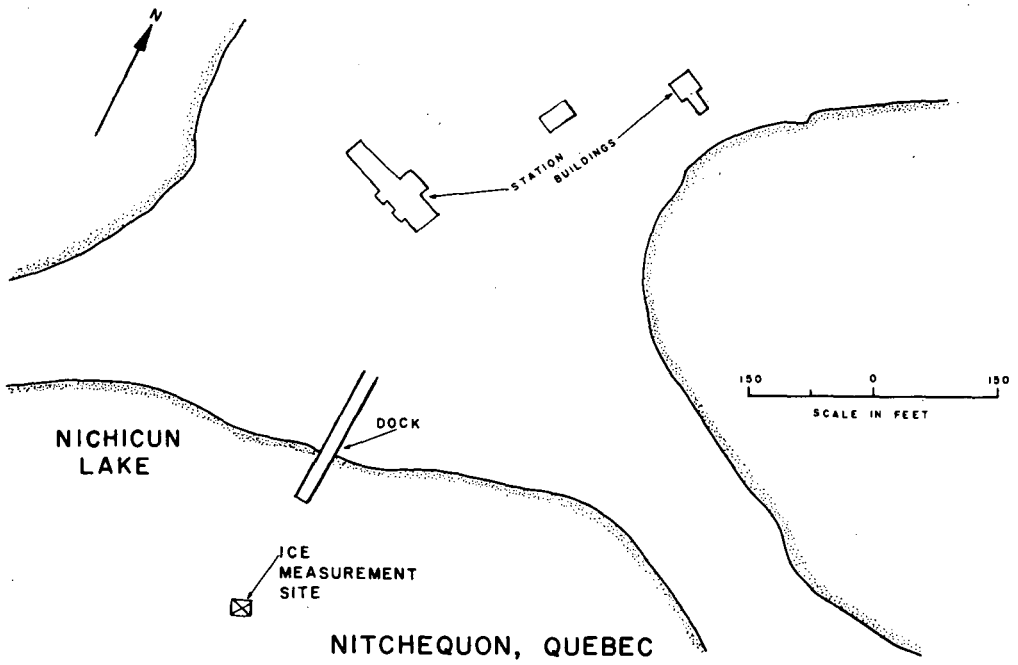
FROBISHER BAY, NWT


N
MARYJO LAKE
JOHN LAKE
"EAST"
"CENTER"
"WEST"
ICE MEASUREMENT SITES
AIRFIELD
ROAD
PEARCE LAKE
"EAST"
"CENTER"
"WEST"
ICE MEASUREMENT SITES
STATION BUILDINGS
KNOB LAKE
1000 0 1000
SCALE IN FEET
KNOB LAKE, QUEBEC

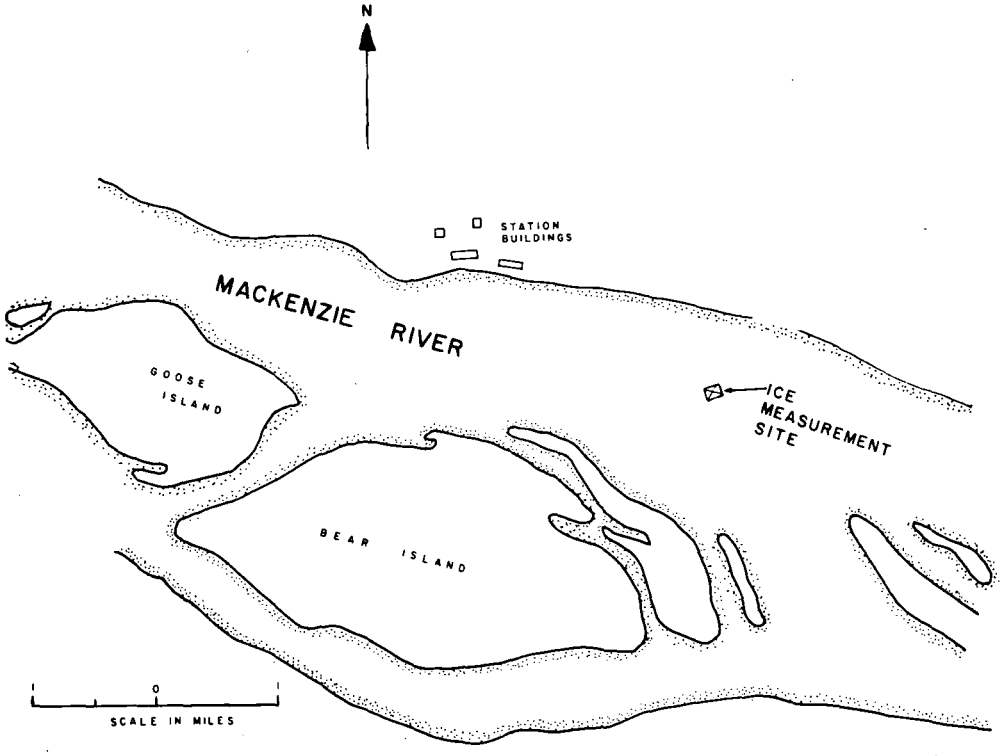

N
HUDSONS BAY STORE
STATION BUILDING
ROAD
STEEP RIVER BANK
MOOSE RIVER
ICE MEASUREMENT SITE
100 0 100
SCALE IN FEET
MOOSONEE, ONTARIO


SHIP CHANNEL
N
LAKE ST. PETER
ICE MEASUREMENT SITE "B"
ICE MEASUREMENT SITE "C"
STATION BUILDINGS
CAUSEWAY
LOW WATER LINE
ICE MEASUREMENT SITE "A"
1000 0 1000
SCALE IN YARDS
NICOLET, QUEBEC

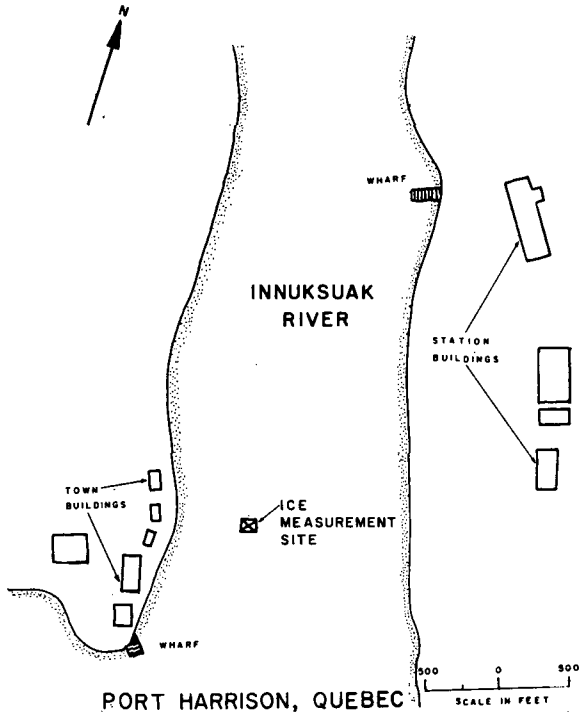
APPENDIX A



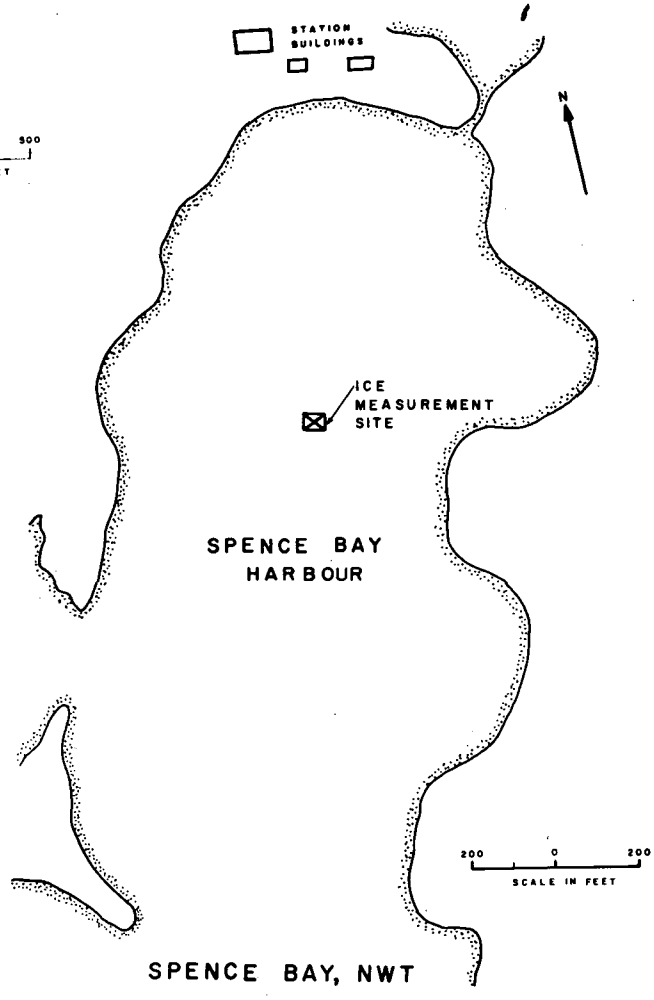
NITCHEQUON, QUEBEC



NORMAN WELLS, NWT

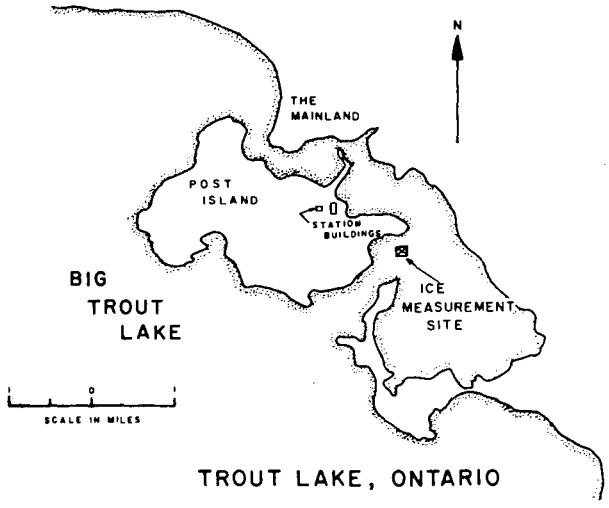


PORT HARRISON, QUEBEC

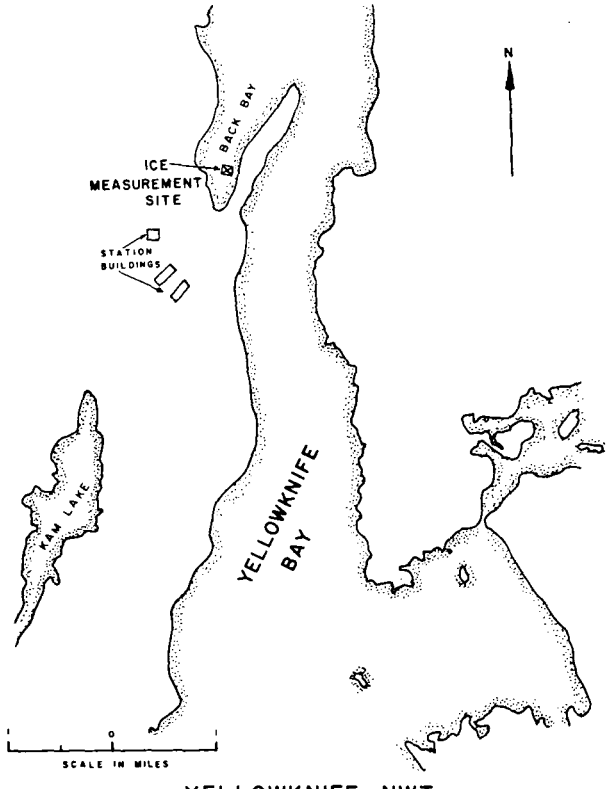


SPENCE BAY, NWT

APPENDIX A



TROUT LAKE, ONTARIO



YELLOWKNIFE, NWT

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATIONS IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Angmagssalik: See sketch map for location of site. November 1950 through May 1951.			
1950			
Nov 25			Fast ice in the harbor and inner fiord. Rest of fiord ice free. Ocean open except for occasional large icebergs and storis. Angmagssalik still open to shipping. 5 cm snow on ice.
28			Some young ice in outer fiord. 5 cm snow on ice.
29			Northwest wind drove the young ice out to sea. Fast ice still in the inner fiord and harbor. Ocean free of ice except for occasional scattered icebergs.
Dec 1			Fast ice in inner fiord, will hold sleds. Fast ice in harbor, outer fiord ice free.
2			Some young ice in outer fiord.
7			Young ice in outer fiord blown out.
9			Outer half of fiord filled w/ storis.
12			Storis blown out beyond horizon, wind north 36 knots.
15			Scattered young ice in outer fiord.
19			Thick storis on ocean to visibility limits. Open water 2 - 3 kilometers wide along coast.
20			Young ice in outer fiord. Scattered snowdrifts.
31			" " " " " " "
1951			
Jan 1			Scattered snowdrifts, avg depths 2 - 3 cm. Outer fiord frozen over, will hold people and sleds.
2	32.		Scattered snowdrifts, avg depths 2 - 3 cm.
3	33.		" " " " " "
4	34.		" " " " " "
5	35.		" " " " " "
6	36.		" " " " " "
7	36.		Belt of storis (approx. 2 kilometers wide) and wide belt of open water w/ scattered large icebergs along coast. Beyond this are storis to visibility limits. About 2 cm slush on ice.
12	37.		No snow on ice.
13	38.		" " " "
14	39.		Open water at entrances to fiords from the ocean and in Sarfakajik, King Oscar Harbor and smaller fiords further east. Storis in the ocean w/ small spots of open water and scattered icebergs.
15	40.		No snow on ice.
17	41.		" " " "
19	42.	10.	
20	43.	26.	
21	44.	42.	
22	45.	40.	
23	46.	39.	
25	47.	37.	
26	46.	33.	Snow cover and ice surface in fiord fairly smooth.
31	45.	28.	
Feb 1	46.	39.	Thick storis in ocean.
2	47.	43.	
5	46.	40.	
7	44.	66.	20 cm of water on top of ice surface.
8	47.	51.	
9	49.	44.	
10	52.	37.	Snow, 14 cm wet and 23 cm dry.
11	51.		Slush ice 16 cm and snow 22 cm.
12	49.	16.	Snow slushy, 2 cm ice, and 21 cm snow.
13	46.	18.	" " 4 cm ice, and 21 cm snow.
14	45.	19.	" " 5 cm ice, and 30 cm snow, 9 cm loose new snow.
15	48.	15.	" " 7 cm ice, and 44 cm snow. Thickly packed storis in ocean, narrow belt of water close to land.
16	72.	40.	(This is probably another measurement site, author.)
18	74.		Slush ice 8 cm, and 28 cm snow.
21	75.		Slush ice 6 cm, and 4 cm ice, and 29 cm snow.
22	86.	24.	Fast ice w/ occasional small icebergs, King Oscar Harbor. Open water in Angmagssalik Fiord at the entrance w/ occasional medium icebergs. Ocean thickly packed storis in Qimertalik and Sangmileq Fiords w/ occasional tabular and irregular icebergs. Fast ice in small fiord and bays w/ solid ice, calved ice and large irregular icebergs. Open water in Sermilik Fiord w/ thickly packed storis outside entrance.
25	91.	10.	
28	99.	13.	
Mar 3	109.	30.	
6	114.	28.	
9	115.	27.	
12	117.	29.	
18	114.	25.	
21	110.	25.	

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATIONS IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Angmagssalik (cont'd):			
1951			
Mar 24	106.	24.	
27	103.	24.	
30	98.	23.	
31	During March: Fast ice in the fiord was covered w/ a smooth layer of drifted snow. Open water at entrance to fiord. Storis in the ocean w/ scattered puddles filled w/ young ice reaching the coast. A narrow belt of water and few icebergs occasionally observed. Open water from the entrance of Angmagssalik Fiord to Kungmiut. Fast ice at Ikerasagssuaq covered w/ snow.		
Apr 2	99.	27.	Tabular and slightly eroded packed storis in ocean, scattered icebergs about 1 - 2 kilometers apart.
5	100.	26.	
14	98.	33.	
17	96.	35.	
20	92.	36.	Open water w/ icebergs in Sermilik Fiord. Calved ice and detached storis in bays and fast ice in fiords. Snow covered fast ice safe for sleds, w/ scattered large icebergs frozen solid in the fiord ice northward from Paonakajit. Sarfaq strait is ice free. Tineteqilaq and Ikerasagssuaq Straits are safe for sled traffic.
23	87.	40.	Slush ice.
29	93.	30.	Fast ice during April covered w/ smooth layer of snow, some slush ice close to shore. Ice not completely solid.
May 2	99.	13.	Thin layer of slush between snow and ice.
5	101.	11.	
8	106.	9.	
11	102.	10.	Upper half of fast ice rotten.
17	99.	12.	Slush ice.
18	Large basin "land" water outside the Koloni and Angmagssalik Fiords.		
20	97.	8.	Slush ice. Ice decaying. Open water at Igdlomiut.
23	96.		7 cm water and some slush ice.
26	94.		7 cm water, no snow.
29	71.		No snow.
Angmagssalik: November 1951 through June 1952.			
1951			
Nov 12	Storis observed in Angmagssalik Fiord.		
15	Grease ice and slush in fiord due to heavy snow fall. Few icebergs and calved ice fragments in area.		
17	Young ice in inner part of Koloni Fiord.		
18	Young ice in most of fiord. Storis driven into fiord reaching the ice edge.		
19	Young ice in inner part of fiord safe for travel.		
20	Storis drifted out and no longer visible from station. Harbor ice now safe for travel.		
21	Young ice covered w/ thin layer of snow.		
25	Ice broken up in parts of Koloni Fiord, however still safe for travel to the Fugle Islands.		
30	Harbor ice broken up. Storis driven into fiord.		
Dec 1	Young ice formed in fiord.		
4	Harbor ice is now safe for travel. Ice edge extends eastward from Idlomiut.		
7	Ice from Fugle Islands and beyond broken up.		
8	Young ice formed from harbor to opposite side of fiord. Open water to Fugle Islands. Nord Fiord frozen except for entrance.		
12	The ice broken up along shore and into fiord. Ice fragments from Fugle Islands drifting w/ wind and current.		
24	Strong northwesterly winds broke up the ice beyond Fugle Islands.		
28	Young ice formed by snow and slush ice beyond Fugle Islands.		
1952			
Jan 5	Young ice formed on entire fiord.		
9	Drift ice driven into fiord and frozen fast. Ice safe for travel on entire fiord.		
22	14.	10.	
30	14.	15.	
31	13.		27 cm slush ice.
Feb 2	16.		27 cm slush ice. Ice under small drifts of snow is soft.
3	18.		25 cm slush ice.
4	20.		19 cm slush ice.
5	25.	13.	
6	30.	13.	Snow piled up in drifts about 30 - 50 cm long.
7	34.	18.	Smooth drifts along coast and more irregular on fiord.
8	40.	20.	
9	44.	20.	Top layer of ice has an unbroken character due to slush ice.
10	46.	24.	
12	47.	23.	
13	49.	22.	
15	50.	16.	

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Angmagssalik (cont'd):			
1952			
Feb 16	52.	16.	
18	53.	36.	
19	53.	53.	
20	50.		4 cm slush ice, 58 cm snow.
22	46.		7 cm slush ice, 50 cm snow.
24	45.		7 cm slush ice, 42 cm snow.
26	46.		15 cm slush ice, 30 cm snow.
29	46.	30.	5 cm slush ice under a layer of ice 2 cm thick.
Mar 1	51.	30.	Layer of slush ice between ice and snow.
2	52.	28.	
3	53.	24.	
4	54.	24.	
6	55.	23.	
7	54.	24.	
8	55.	24.	Ice cracked from entrance to inner fiord.
9	56.	24.	
12	55.	32.	
14	57.	30.	Young ice at outer entrance to fiord, about 20 cm thick.
16	56.	36.	
18	57.	39.	Ice in places appears to consist of grease ice.
20	59.	44.	
22	60.	43.	8 cm slush.
24	55.	40.	5 cm slush, 5 cm slush ice and 5 cm ice between main ice sheet and snow cover.
25	62.	20.	
26	68.		15 cm slush ice and water, 20 cm snow.
27	69.	16.	
28	70.	13.	
29	70.	15.	
30	68.	12.	
31	72.		10 cm slush ice.
Apr 1	72.		2 cm ice, and 15 cm slush ice.
2	75.		5 cm ice, and 15 cm slush ice.
3	78.		10 cm ice, and 5 cm slush ice.
4	83.	12.	
7	85.	5.	Snow cover spotty.
10	88.		Ice broken from Gronlaender-pyntenog diagonally across fiord.
13	89.		
19	90.		Ice soft during days, but hard during nights.
22	91.		
25	92.		
28	89.	7.	
May 1	89.	11.	
2	93.	10.	
5	90.		10 cm slush ice.
8	95.		15 cm slush ice.
11	104.		12 cm slush ice.
14	108.		7 cm slush ice under a crust of frozen slush.
17	93.		22 cm slush ice.
20	79.		31 cm slush ice.
23	62.		35 cm slush ice.
24	58.		40 cm slush ice.
25	50.		39 cm slush ice and water. 50 cm of ice very loose.
26	48.		43 cm slush ice and water.
27	41.		47 cm slush ice and water.
28	38.		51 cm slush ice and water.
29	32.		Ice edge being driven inward each day by storis. 20 to 50 cm slush and water.
30	29.		
31	26.		
Jun 1	21.		
2	20.		
3	Ice 0 to 30 cm thick, and not safe.		
Angmagssalik: November 1958 through June 1959.			
1958			
Nov 1	Young ice in river mouth, otherwise the fiord is ice free.		
2	Scattered ice in harbor.		

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATIONS IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Angmagssalik (cont'd):			
1958			
Nov 3	Grease ice in harbor.		
4	No ice.		
5	Grease ice in harbor, otherwise ice free.		
7	Grease and young ice in harbor.		
10	Harbor 1/2 polar ice, 1/2 ice free.		
11	Some polar ice in harbor, otherwise ice free.		
14	Young ice 200 meters outside the harbor.		
17	Harbor 1/4 young ice, 3/4 open water.		
21	1/2 young ice, 1/8 polar ice, 3/8 open water.		
28	Harbor ice free except few scattered ice flows.		
30	1 to 3 bergs in area during November.		
Dec 2	Harbor 3/8 polar ice, 5/8 open water.		
10	The fiord covered by young ice.		
14	Harbor 1/2 young ice, 1/2 open water.		
17	Entire fiord covered w/ ice.		
19	12.	3.	
20	16.	3.	
21	19.	4.	
22	21.	4.	
23	26.	10.	
24	28.	9.	
25	31.	9.	
27	33.	6.	
28	36.	6.	Fiord open at the entrance.
29	37.	7.	
30	41.	7.	
31	42.	7.	1 to 3 icebergs in area during December.
1959			
Jan 2	46.	7.	
4	Fiord frozen over, open water at the entrance.		
5	47.	7.	1/2 of the fiord broken up by tides.
6	1/2 of the fiord broken up by tides.		
7	45.	7.	
9	46.	6.	Fiord 1/2 solid ice, 3/8 broken ice, 1/8 open water.
10	Entire fiord frozen over.		
12	48.	8.	Fiord 1/2 solid ice, 3/8 broken ice, 1/8 open water.
14	50.	8.	Entire fiord frozen over.
17	53.	8.	
19	55.	8.	
22		10.	
23	58.	9.	
25	57.	24.	
27	59.	30.	
29	60.	26.	
31	59.	30.	1 iceberg in area during January.
Feb 3	60.	52.	
5		56.	
10	63.	60.	
17	63.	79.	
23	67.	92.	
28	66.	95.	1 iceberg in area during February. Entire fiord frozen over during month, snowstorms occurred on 6th, 9th, and 12th.
Mar 6	68.	103.	
12	66.	105.	
19	67.		Layers from top: 95 cm snow, 18 cm slush ice, 67 cm ice.
25	66.		" " " 79 cm snow, 40 cm slush ice, 66 cm ice.
31	Entire fiord frozen over during month. 1 iceberg in area during March.		
Apr 3	65.		Layers from top: 42 cm snow, 61 cm slush ice, 65 cm ice.
10	65.		" " " 30 cm snow, 60 cm slush ice, 65 cm ice.
17	64.		" " " 20 cm snow ice, 42 cm slush ice.
25	67.		" " " 10 cm snow, 45 cm ice, 22 cm water, 67 cm ice.
30	Entire fiord frozen over during month. 1 iceberg in area during April.		
May 4	66.		Layers from top: 8 cm snow, 48 cm ice, 18 cm water, 66 cm ice.
14	62.		" " " 8 cm slush ice, 45 cm ice, 16 cm slush, 62 cm ice.
21	Water flowing on top of river ice since the 18th.		
22	River flowing normally.		
25	River ice broke up.		

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Angmagssalik (cont'd):			
1959			
May 27			Waves forming at river mouth. Ice breaker beginning to break a channel through the ice.
29			Ice breaker cleared way to entrance to fiord.
31			Harbor ice becoming rotten. Entire fiord frozen over during month. 1 iceberg in area during May.
Jun 1			Harbor ice rotten.
4			Ice open from entrance of fiord to bay.
9			Harbor almost ice free. Fiord ice remains unbroken.
11			Harbor ice free. Fiord ice broken.
15			Heavy drift ice driven into entrance of fiord.
16			Fiord ice free. (Ice disappeared in about 2 hrs. during evening of 15th).
17			1/8 heavy drift ice, 7/8 open water.
31			1 iceberg in area during June.
Angmagssalik: November 1959 through June 1960			
1959			
Nov 1			1/8 heavy drift ice, 7/8 open water in area, young ice in harbor.
2			1/8 heavy drift ice, 1/4 young ice, 5/8 open water in area.
4			Heavy drift ice, 1/4 young ice, 3/4 open water.
5			Ice free.
6			Young ice in harbor.
7			1/8 young ice, 7/8 open water in area.
8			3/8 young ice, 5/8 open water in area.
9			1/8 young ice, 7/8 open water in area.
10			3/8 young ice, 5/8 open water in area.
13			Young ice on entire fiord.
17	19.	4.	
18	24.	5.	
19	26.	5.	
20	30.	5.	
21	34.	5.	
22	36.	5.	
23	42.	5.	
25	44.	4.	
27	47.	15.	
28	50.	17.	
29	51.	14.	Open water in fiord entrance.
30	53.	11.	Entire fiord covered w/ young ice since 17th. Open water in fiord entrance. 1 to 3 icebergs in area.
Dec 2	50.	10.	
4	52.	10.	
7	53.	15.	
12	50.	13.	
15	50.	19.	
18	53.	23.	
23	55.	16.	
27	52.	42.	
31	53.	38.	Entire fiord frozen over during month. Open water entrance to fiord. 1 iceberg in area.
1960			
Jan 6	55.	26.	
12	60.	20.	Swells visible. Fiord ice cracked in several places.
18	70.	12.	
20	Young ice in entrance to fiord.		
26	68.	15.	
27	Polar ice in entrance to fiord.		
31	1 iceberg in area. The entire fiord frozen over during month, open water in entrance to fiord.		
Feb 3	73.	20.	Open water in entrance.
8	Entire fiord frozen over since 1st.		
9	Entrance and about 1/3 of fiord is broken up.		
10	Young ice covers broken up area.		
11	84.	21.	Entire fiord frozen over.
13	Entrance and about 1/3 of fiord broken up.		
15	Young ice covers broken up area.		
20	97.	19.	
27	102.	18.	
29	Entire fiord frozen over since 15th. 1 iceberg in area.		
Mar 5	107.	9.	
11	Some water on ice.		
12	110.	8.	
17	Fiord ice covered w/ water.		
19	110.	5.	

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATIONS IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Angmagssalik (cont'd):			
1960			
Mar 20	Water frozen over.		
26	118.	1.	
31	No water on the ice at measurement site, rest of the fiord up to 35 cm water on ice since 26th. Entire fiord frozen over during month. 1 iceberg in area.		
Apr 2	114.	3.	
9	118.	16.	
16	120.	15.	
23	115.	13.	
30	112.	10.	Entire fiord frozen over during month. Open water at entrance to fiord since 25th. 1 iceberg in area.
May 7	104.	6.	
12	Entire fiord frozen over since 1st. Open water at entrance.		
14	96.	5.	River breaking up.
15	River beginning to form holes in harbor ice.		
20	Opening from mouth of the river to bay.		
28	7/8 fiord ice, 1/8 open water in area.		
31	3/4 fiord ice, 1/4 open water. 1 iceberg in area.		
Jun 1	Harbor ice free.		
6	Airplane reports 40 nautical miles of drift ice out from the coast. Ice cover 8/10 - 9/10.		
9	Airplane reports 25 kilometers of quite heavy pack ice from the coast. Fog further out.		
13	Airplane reports ice from land to 100 miles off land. 8 miles from land and beyond ice is very packed, consisting of large masses w/ a few icebergs.		
17	Airplane reports 30 nautical miles of pack ice east of Kulusuk.		
Angmagssalik: October 1960 through June 1961.			
1960			
Oct 19	Fiord ice free since 1st. Water temp ranged between 1.4 to 1.9 deg C.		
27	Young ice in harbor and fiord since 20th.		
28	Ice free.		
31	Young ice in fiord and harbor. 3 to 5 icebergs in area during October.		
Nov 1	Some young ice in harbor and fiord.		
5	Some grease ice in harbor.		
6	1/8 young ice, 7/8 open water.		
11	Fiord ice free since 7th.		
12	Some young ice in harbor and fiord.		
20	Fiord ice free.		
22	Some young ice in harbor and fiord.		
23	3/8 young ice, 5/8 open water in area, some young ice in harbor.		
30	1/4 young ice, 3/4 open water in area, some young ice in harbor, 2 to 7 icebergs in area during November.		
Dec 1	1/8 young ice, 7/8 open water in area, some young ice in harbor.		
4	1/4 young ice, 3/4 open water in area, grease ice in harbor.		
11	1/8 young ice, 7/8 open water in area.		
16	Young ice in harbor.		
26	1/4 young ice, 3/4 open water in area, young ice in harbor.		
27	Fiord covered w/ young ice.		
31	3/4 young ice, 1/4 open water. 2 to 4 icebergs in area.		
1961			
Jan 2	1/4 young ice, 3/4 open water.		
10	Entire fiord frozen over.		
14	1/4 young ice, 1/4 heavy drift ice, 1/2 open water.		
18	1/4 young ice, 3/4 open water.		
22	1/8 young ice, 5/8 heavy drift ice, 1/4 open water in area.		
31	1/8 young ice, 7/8 open water. 1 to 2 icebergs in area.		
Feb 3	10.		
4	12.		
5	14.		
6	16.		
7	19.		
9	20.	15.	
10	21.	22.	
12	23.	17.	
13	25.	14.	
15	26.	12.	
16	28.	10.	
17	30.	8.	

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Angmagssalik (cont'd):			
1961			
Feb 18	31.	10.	
19	32.	12.	
22	30.	17.	
23	32.	22.	
25	33.	28.	
26	34.	29.	
28	35.	32.	Entire fiord frozen over since 1st. Open water at entrance to fiord, no icebergs in the area.
Mar 1	35.	38.	Entire fiord frozen over, open water and drift ice at the entrance.
3	38.	10.	
7	47.	23.	
10	47.	35.	
13	7/8 fiord ice, 1/8 open water in area.		Some heavy drift ice at entrance.
14	53.	18.	
17	47.	35.	
21	48.	25.	
25	49.	20.	
28	49.	18.	Layers from top: 18 cm snow, 12 cm ice; 25 cm water, 49 cm ice.
31	51.	14.	No icebergs in area during March.
Apr 1	Entire fiord frozen over.		
4	51.	12.	Layers from top: 12 cm snow, 12 cm ice, 20 cm water, 51 cm ice.
7	68.	23.	Layers from top: 23 cm snow, 10 cm ice, 10 cm water, 68 cm ice.
14	90.	30.	
20	90.	28.	
25	86.	32.	Layers from top: 32 cm snow, 5 cm water, 86 cm ice.
28	83.	25.	Layers from top: 25 cm snow, 10 cm water, 83 cm ice.
30	No icebergs in area during April.		
May 1	Entire fiord frozen over.		
2	77.	20.	Layers from top: 30 cm snow, 30 cm water, 77 cm ice.
5	Open water at entrance.		
6	65.	15.	Layers from top: 15 cm snow, 10 cm ice, 5 cm water, 65 cm ice.
8	Some polar ice at entrance.		
11	Open water at entrance.		
13	70.	10.	
19	63.	8.	
20	Some water on ice.		
21	7/8 fiord ice, 1/8 open water, river broken up.		
22	River developing an opening in harbor ice.		
25	3/4 fiord ice, 1/4 open water.		
26	Harbor almost icefree.		
31	3/8 fiord ice, 1/8 heavy drift ice, 1/2 open water.		No icebergs in area.
Jun 16	3/8 fiord ice, 1/8 heavy drift ice, 1/2 open water since 1st.		
18	Some ice in entrance of fiord, some scattered heavy drift ice.		
21	1/8 heavy drift ice in area, 7/8 open water.		
22	Some scattered heavy drift ice.		
30	1/8 heavy drift ice in area, 7/8 open water. 1 iceberg in area. Water temp ranged between 2.6 deg C and 6.5 deg C since 15th.		
Danmarkshavn:	September 1950 through June 1951. **See sketch map for location of site.**		
1950			
Sep 13	Water temp varied between 1.0 deg C and -1.5 deg C since the 1st.		
14	Young ice.		
20	6.5		Ice safe for people.
23	7.5		
24	9.5		Ice safe for sled driving.
25	12.		
26	15.5		
28	21.		
29	22.		
30	24.		5 to 9 icebergs in area during September.
Oct 1	26.		
2	28.		
8	31.		
10	32.		
11	34.		

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATION IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd):			
1950			
Oct 12	36.		
20	45.		
24	48.		
26	50.		
28	53.		
31	56.		3 to 7 icebergs in area during October.
Nov 1	56.		
4	58.		
8	61.		
13	63.		
19	64.		
25	66.		
29	69.		
Dec 1	69.		
2	75.		
5	81.		
10	85.		
15	87.		
18	90.		
20	92.		
26	101.		
30	107.		
1951			
Jan 1	107.		
3	114.		
8	119.		
11	124.		
15	130.		
18	135.		
24	141.		
26	141.		
30	145.		
Feb 1	145.		
3	149.		
7	153.		
13	160.		A channel about 200 meters wide observed from south point of Little Koldeway to Cape Bismarck.
16	Channel has expanded north to 17km Naesset. Channel covered by thin ice. Several channels visible further out.		
18	168.		
21	173.		Strong wind from northwest closed channel extensions.
28	179.		
Mar 1	179.		
5	186.		
13	192.		
22	198.		
Apr 1	198.		
2	205.		
10	206.		
13	208.		
18	212.		
23	210.		
29	214.		
May 1	214.		3 cm loose snow.
5	213.		
11	216.		
14	Channel approx. 500 meters wide observed from Cape Bismarck northward to horizon. A strong southerly current was observed in channel, but no movement of ice on east side of channel. Several large north - south channels observed further out.		
15	213.		3 cm loose snow.
19	202.		
24	188.		
29	178.		
Jun 1	175.		3 cm loose snow.
5	173.		Water and slush.
9	170.		
13	167.		
14	Water on ice.		

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd):			
1951			
Jun 18	Open water at place of measurement, close to river mouth. Water and slush.		
30	3 icebergs in area from November 1950 through June 1951.		
Danmarkshavn: August 1951 through July 1952			
1951			
Aug 17	Water temp since 1st of month ranged between 0 deg C and 2.8 deg C.		
18	Ice in the harbor.		
26	1.5		
28	2.		
30	3.		
31	5.		5 to 8 icebergs in area during August.
Sep 26	9.		
29	10.		
30	2 to 10 icebergs in area during September.		
Oct 1	11.		
2	12.		
3	16.		
4	18.		
5	20.		
6	22.		
9	24.		
12	27.5		
15	31.5		Ice safe, sleds in Stormbugt and Osterso.
16	33.5		
17	34.5		
18	35.		
20	36.5		
24	39.		
26	43.		
27	46.5		
31	Ice safe for sleds in Dovebugt.		
Nov 1	50.		
2	51.8		
3	54.2		
4	56.		
5	58.3		
6	59.5		
7	60.5		
8	62.		
10	63.		
14	68.5		
18	76.		
23	78.5		
24	82.		
28	83.5		
Dec 5	87.		
8	91.		
13	100.		
19	118.		
24	125.		
28	127.		
31	2 to 6 icebergs in area October through December.		
1952			
Jan 4	131.5		
10	133.5		
14	140.6		
20	144.		
25	147.5		
28	149.		
Feb 6	153.5		
9	158.5		
14	162.		
19	167.		
23	170.5		
26	174.		
Mar 4	178.5		
12	186.		
22	193.5		
25	196.		

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATIONS IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd):			
1952			
Mar 30	199.		
Apr 10	205.		
17	208.		
21	211.		
27	213.		
May 6	211.		
14	214.		
18	213.		
22	209.		
28	203.		
Jun 5	195.		River flowing slowly.
8			Opening forming outside entrance to fiord.
10			River breaking up gradually moving slowly.
12	180.		Water on ice, 400 meters from shore.
16			River is flowing faster, snow-ice still on river.
20			Heavy snow and ice cover on river.
21			Less water flowing now.
25			Heavy amount of water, snow and ice breaking up.
28			Openings starting to form. Open water at place of measurement.
30			6 icebergs in area January through June.
Jul 1			Openings about 50 miles north - south and 75 miles east - west.
3			Openings about 100 miles north - south and 150 miles east - west. River is flowing very fast.
11			Openings about 200 miles north - south and 300 miles east - west.
14			Storis unbroken. No cracks. Open water between Cape Bornholm and Badskaeret, width 1 - 1.5 kilometer. Opening from Kap Alfred Beauvais w/ an easterly length of about 1 kilometer. Open water between Great and Little Koldeway about 300 meters wide. Opening parallel to northeast point of St. Koldeway and about 800 meters along shoreline. Width 75 meters.
15			Opening in harbor ice, about 300 meters north - south and 500 meters east - west.
18			Opening in the harbor ice about 500 meters north - south and 900 meters east - west.
21			Storis crack extends to horizon in north - south direction. Crack 5 - 10 kilometers wide from Marcussia southward and northward to 17kmNaesset about 1-2 kilometers wide. Opening in ice at Kap Alfred Beauvais.
22			Ice broken up from Kap Alfred Beauvais to Kap Baiholm-Hareskaret. Storis drifting, many cracks and openings further out.
28			Shipping lane broken up. Fast ice from east to west cape of harbor. Shipping not yet possible.
31			5 to 6 icebergs in area during July. Water temp since 1st of month varied between .8 deg C and 4.2 deg C.
Danmarkshavn: August 1952 through July 1953.			
1952			
Aug 22			Water temp varied from .8 deg C to 4. deg C since first of month.
23			Young ice, 4 cm thick.
24			Young ice broken up, harbor filled w/ old ice.
31			3 to 9 icebergs in area during August.
Sep 12			Harbor filled w/ piled up old and young ice.
19			Ice in harbor can hold two men.
20	10.		
22	12.		
23			Harbor ice safe for dog-sled.
25	16.		
28	18.		
29	19.		
30	21.		5 to 9 icebergs in area during September.
Oct 1	23.		
2	25.		
3	27.		
4	29.		
6	31.		
8	32.		
9	34.		
11	35.		
13	37.		
16	38.		
19	39.		
21	40.		
24	41.		
31			9 icebergs in area during October.

Date	Ice Thickness (cm)	Snow Depth (cm)
Danmarkshavn (cont'd):		
1952		
Nov 2	46.	
4	47.	
5	48.	
7	49.	
8	50.	
9	52.	
10	53.	
11	55.	
12	57.	
13	58.	
14	60.	
15	61.	
16	63.	
17	65.	
19	68.	
21	71.	
23	74.	
Dec 2	76.	
4	77.	
7	79.	
10	80.	
15	88.	
22	96.	
28	105.	
1953		
Jan 1	105.	
5	112.	
12	120.	
18	129.	
26	140.	
Feb 2	150.	
9	156.	
17	164.	
26	164.	
Mar 31	No ice measurement made this month.	
Apr 2	198.	
21	211.	
May 21	212.	
Jun 7	Water on ice.	
10	1 kilometer wide crack was observed at 2400 hrs from 17 km Naesset to Cape Bismarck.	
12	A crack from 2 to 20 miles wide, stretches from 17 km Naesset to horizon. Fast ice in harbor and shipping lane w/ crack 2 - 3 miles from coast.	
24	Open water from 2.4 km Naesset to southern point of Little Koldeway. Belt of fast ice about 2 kilometers wide along coast. Open water extends at least twenty miles southeastward.	
27	Open water from Micardbu to Great Koldeway extending more than 20 miles toward southeast Germanialand. Icebelt along coast about 1 mile wide.	
30	9 icebergs in area October 1952 through June 1953.	
Jul 1	Several cracks in coast ice.	
4	Open water east and southward to the horizon. Crack in shipping lane connects w/ open water.	
7	Drifting ice fields. 80% of shipping lane between Germanialand and Little Koldeway is ice free.	
14	Open water to east and south, w/ only scattered drifting ice blocks. Fast ice only in innermost part of harbor. Dovebugt, no open water.	
15	1000 - 1200 meters wide belt of ice from east to west point of harbor. Harbor ice somewhat rotten and not safe.	
19	Opening in ice from the 1.7 km Naesset to Great Koldeway and 20 km southeast. No ice observed except for a narrow belt close to land. Narrow lane between Cape Bismarck and Little Koldeway, ice belt about 1 km wide. Narrow lane between Germanialand and Great Koldeway scattered icebergs or no ice. Fast ice in Dovebugt.	
22	Southern part of harbor ice free, northern part has belt of fast ice 1 kilometer wide.	
23	Large drifting ice blocks along east side of Great Koldeway. Southern part of harbor ice free.	
25	Water temp 5.3 deg C.	
28	Ice in harbor completely broken up. Fast ice in Dovebugt since 15th.	
31	7 to 23 icebergs in area during July.	
Danmarkshavn: October 1953 through 1954.		
1953		
Oct 1	16.	
3	21.	

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATIONS IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd):			
1953			
Oct 5	22.5		
7	24.		
12	32.		
13	33.		
15	35.		
20	36.		
24	32.		
28	40.		
31	41.		5 to 7 icebergs in area during October.
Nov 1	41.		
2	Open water still in Dovebugt.		
8	42.5		
9	Dovebugt ice covered. Surface water 1 km wide along coast line.		
12	44.		
14	45.5		
17	51.		
19	Large openings in the ice at coast line.		
23	54.		
28	58.5		
30	59.		
Dec 4	62.		
7	66.5		
10	68.		
13	71.5		
19	73.5		
21	76.		
25	79.		
31	82.		5 to 8 icebergs in area November and December.
1954			
Jan 3	83.5		
6	86.		
10	88.		
13	90.5		
16	94.5		
18	96.		
21	99.		
24	102.		
27	104.5		
30	106.		
Feb 2	108.		
6	111.		
9	112.5		
12	115.		
14	117.		
18	120.		Open water 1 km from the coast line.
21	Drift snow.		
23	123.		
24	Drift snow.		
27	124.		
Mar 8	125.5		
11	126.5		
14	132.5		
17	128.		
22	130.		
27	134.5		
Apr 3	135.		
7	137.		
11	137.5		
15	138.		
23	139.		
28	141.5		
May 3	141.		
9	143.5		
16	144.		
27	145.		
Jun 4	150.		No open water visible.
8	Small scattered openings in ice at coast line.		
11	148.		

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd):			
1954			
Jun 14			Small scattered openings in ice at coast line.
30			8 icebergs in area January through June.
Jul 16			Opening in ice from Stormbugt to Cape Bismarck, 5 km wide.
27			Harbor and shipping lane practically ice free.
31			6 to 11 icebergs in area during July. Water temp since 19th ranged between 0.2 to 5.3 deg C.
Danmarkshavn: August 1958 through July 1959.			
1958			
Aug 7			1 iceberg in harbor.
19			Harbor 50% drift ice.
22			Formation of young ice in harbor about 10 mm thick.
25			About 17 icebergs in Dovebugt.
28			Entire harbor covered by young ice.
29			Most of young ice in harbor broken up.
30			1 iceberg along coast, rest in Dovebugt.
31			Water temp since 1st varied between 0 deg and 1.5 deg C. 10 - 25 icebergs in area during August.
Sep 1			Young ice formed in harbor during night.
2			About 50% of shipping lane covered w/ young ice.
5			About 5% drift ice in harbor and Dovebugt. Small water streams frozen.
7			Harbor ice free.
8			Water temp varied between -.5 and 1.2 deg C since the 1st. Young ice in harbor 1 cm thick.
9	5.		
11	7.		
13			75% young ice in harbor and shipping lane.
14	10.		
18			Grease ice in harbor and shipping lane.
21	11.		
23	13.		
24	15.		
25	18.		
26	20.		
28	22.		
29	25.		
30	29.		19 to 23 icebergs in area during September. No snow on ice during month.
Oct 7			No snow on ice since the 1st.
8	42.	2.	
14	44.	3.	
17	47.	3.	
19	49.	5.	
23	52.	5.	
26	57.	5.	
28	60.	6.	
29	63.	6.	
30	66.	6.	
31	70.	6.	
Nov 6	72.	12.	
11	74.	15.	
13	77.	15.	
15	80.	15.	
17	84.	15.	
19	88.	15.	
21	90.	16.	
24	93.	16.	
30	96.	16.	
Dec 4	98.		
1959			
Jan 3	136.	9.	
15	139.	8.	
21	142.	8.	Snow drifting.
27	144.	7.	" "
31	146.	6.	
Feb 4	158.	9.	
7	160.	10.	
11	162.	10.	
20	163.	13.	
22	164.	13.	
28	167.	13.	

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATIONS IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd):			
1959			
Mar 9	170.	13.	
16	172.	13.	
20	175.		
23	177.	15.	
28	180.	15.	
31	23 icebergs in area October 1958 through March 1959.		
Apr 1	182.	20.	
5	184.	30.	
7	186.	18.	Crack in ice about 1 km wide from 17km Naesset to Marussia. Another crack about 500 meters wide 6 - 8 kilometers long running perpendicular from Cape Stensby.
11	188.	18.	
24	190.	20.	
29	191.	20.	
30	15 to 16 icebergs in area during April.		
May 5	192.	12.	Large number of cracks and openings in ice off coast.
26	Several small and large puddles.		
Jun 3	190.	9.	
5	Several small cracks everywhere.		
7	188.	8.	
14	186.	6.	Water on harbor ice. Several small streams of water in area.
16	Several small cracks north - south offshore.		
17	184.	5.	
20	182.	3.	
24	180.	2.	
27	179.		
29	Crack between Helgoland and Badskaer.		
30	23 icebergs in area during May and June.		
Jul 1	Ice still solid. No snow on ice.		
7	Ice solid. Water temp measured in a large opening in ice which is connected to outlet of East River.		
10	Scattered icebergs in large ice opening.		
23	Shipping lane broken up between Cape Bornholm and Badskaeret into Stormelven. Crack about 5 kilometers wide from Badskaeret to coast. Ice is drifting.		
31	Water temp during July ranged between 0 deg and 1.6 deg C. 23 icebergs in area during July.		
Danmarkshavn: August 1959 through July 1960.			
1959			
Aug 3	90% drift ice in shipping lane. Channel ice free from Cape Helgoland to Stormnaes.		
7	Harbor almost ice free. Two icebergs in ocean, rest in shipping lane Oresund and Dovebugt.		
8	47 icebergs in Dovebugt, shipping lane corridor, and Oresund, half of them in southern part of Dovebugt.		
25	Young ice in harbor.		
27	15 - 20 meters wide crack in young ice.		
28	Thickness 1 cm, 60% ice coverage.		
29	Harbor covered by old fiord ice and young ice, thickness 2.5 cm. Young ice in larger part of Ostersoen.		
31	Water temp varied during month between 0 deg and -1.5 deg C. 12 to 49 icebergs in area during August.		
Sep 1	6.		
4	Crack caused by surface water from southern point of Cape Bismarck toward 17 km - naesset. Harefjeldet totally ice free.		
15	16.		
20	19.		No snow on ice since 1st.
22	Belt of open water in southern part of shipping lane.		
23	20.	3.	
25	22.	3.	
26	26.	3.	
29	24.	3.	
30	25.	3.	12 to 25 icebergs in area during September.
Oct 1	28.	3.	
5	31.	3.	
8	33.	3.	
13	35.	3.	
19	38.	8.	
20	Large crack in ice about 10 kilometers long, 10 - 200 meters wide near Marussia.		
22	40.	10.	
26	43.	20.	
30	47.	20.	

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd):			
1959			
Oct 31	11 to 22 icebergs in area during October.		
Nov 3	50.	21.	
9	53.	28.	
16	56.	15.	
21	60.	10.	
24	66.	10.	
27	71.	10.	
Dec 3	75.	32.	
11	78.	32.	
18	81.	32.	
26	83.	32.	
1960			
Jan 10	86.	15.	Snow drifting.
14	89.	15.	
19	93.	15.	
23	97.	15.	
28	100.	40.	Snow storm since 22nd.
Feb 5	102.	44.	
13	104.	20.	
19	106.	20.	
24	109.	20.	
Mar 1	111.	20.	
4	115.	20.	
9	118.	20.	
16	121.	20.	
22	124.	20.	
28	127.	20.	
Apr 1	130.	20.	
4	132.	20.	
10	135.	30.	
15	138.	35.	
18	Large crack in ice about 50 - 100 meters from land from 17km Naesset southward. Crack is 50 - 100 meters wide and extends past Cape Christian. Several smaller cracks visible.		
27	141.	18.	
May 2	Open water channel from 17km Naesset past southern point of Little Koldeway.		
4	143.	18.	
5	Crack at Cape Bismarck enlarging to width of 3 - 8 km.		
12	145.	18.	
20	Crack is closing but there is still open water.		
21	147.	18.	Ice blocks at south point of Cape Bismarck.
28	149.	16.	
Jun 6	148.	11.	
12	147.	10.	Open channels in places from 17km Naesset, and over to Little Koldeway.
18	146.	8.	
26	145.	6.	
28	143.	5.	
30	20 icebergs in area November 1959 through June 1960.		
Jul 1	Ice broke up from Ornens Island as far northward and off from land as visible, ice concentration about 4/5 (4 icebergs).		
5	Large openings in ice at Cape Christian, Cape Bismarck and between Little Koldeway and Badskaeret 22 icebergs in northern part, and 35 in southern (visible) part of Dovebugt. Remainder of ice quite rotten but good enough for seal hunting.		
6	Ice on ocean began drifting southward far as visible. About 6 - 8 km surface water northward.		
15	Ice in harbor and shipping lane has disappeared. Concentration in harbor about 5 - 6 and in corridor about 6 - 7 tenths.		
18	Fast ice in Dovebugt w/ exception of scattered small openings in ice. Ice in the shipping lane broken up in a straight line from northern point of Little Koldeway to Badskaeret. Harbor partly ice free. Over the ocean, ice lies close to land, a single crack extends from 17km Naesset in a southerly direction. Some drift ice around crack.		
21	Stormbugt broke up. Surface water along entire coast, in entire Stormbugt past Stormnaesset toward Storesnenaes. About half of Oresund broke up and partly ice free.		
22	Fast ice in entire Dovebugt, 7/8 drift ice in Stormbugt. Northern part of Oresund 1/8 drift ice, rest fast ice.		
27	At 17km Naesset open water to horizon, 1/8 drift ice. Fast ice in Dovebugt.		
28	Stormbugt 1/2 drift ice, Oresund 1/4 drift ice. Shipping lane 3/8 drift ice. Over ocean about 10 kilometers surface water w/ 1/4 scattered drift ice. Beyond this is about 1/2 drift ice.		

APPENDIX B: SUPPLEMENTARY ICE THICKNESS OBSERVATIONS IN GREENLAND.

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd):			
1960			
Jul 31	Lumskebugten broke up, 7/8 drift ice. Stombugten 3/8 drift ice. Water temp varied between -1.2 deg and .1 deg C. 19 to 27 icebergs in area during July.		
Danmarkshavn: September 1960 through June 1961.			
1960			
Sep 2	Young ice in harbor.		
6	Scattered icebergs in the shipping lane.		
7	Thin young ice 50 meters wide along coast.		
10	Water temp since the 7th varied between .8 and 1.4 deg C.		
12	.5		Too much ice to be able to measure water temp.
13	1.		35 knot wind blew ice out of harbor, but driven in again next day.
15	3.		
17	5.		
20	7.		Shipping lane ice free.
24	9.		
25	10.		Fast ice in harbor.
26	11.		
27	12.		
28	14.		Fast ice 2 - 3 km wide along coast.
29	16.		
30	18.		33 to 45 icebergs in area during September. No snow on ice this month.
Oct 1	20.		
3	22.		
5	25.		
6	Heavy fast ice everywhere.		
7	27.		
9	28.		
11	29.		
13	No snow on ice since the 1st.		
14	32.	2.	
16	34.	1.	
18	38.	1.	
19	41.	1.	
20	43.	1.	
25	45.	1.	
29	48.	1.	
30	50.	4.	
Nov 1	Heavy fast ice.		
5	53.	15.	
7	55.	15.	
9	57.	15.	
11	59.	15.	
13	61.	15.	
15	63.	15.	
18	66.	15.	
22	70.	16.	
26	73.	17.	
30	76.	18.	
Dec 1	Heavy fast ice.		
3	77.	19.	
6	80.	19.	
11	84.	21.	
13	86.	25.	
17	89.	26.	
21	92.	26.	
25	95.	26.	
27	97.	30.	
31	100.	31.	
1961			
Jan 1	101.	30.	Heavy fast ice.
4	104.	30.	
8	108.	30.	
14	110.	32.	
17	112.	35.	
24	116.	35.	
28	119.	38.	
Feb 1	121.	38.	Heavy fast ice.
6	122.	38.	
10	124.	38.	

Date	Ice Thickness (cm)	Snow Depth (cm)	Remarks
Danmarkshavn (cont'd): 1961			
Feb 14	126.	38.	
18	128.	38.	
23	130.	50.	
26	132.	51.	
Mar 1	134.	51.	Fast ice.
4	136.	52.	
6	138.	52.	
9	140.	52.	
14	142.	53.	
18	144.	54.	
22	146.	54.	
26	148.	54.	
Apr 1	150.	54.	Fast ice.
7	152.	55.	
10	154.	55.	
13	156.	55.	
17	158.	55.	
21	160.	55.	
24	162.	55.	
27	166.	55.	
May 1	168.	52.	Fast ice.
Jun 1	Opening in ice estimated to be about 70 km long and 2 km wide extends from 17kmNaesset toward south point of Great Koldeway.		
2	165.	23.	
3	160.	20.	
4	Water on ice and ice broke up.		
15	East and west river broke up.		
23	Thick drift ice in opening from Cape Bismarck northward. Large crack (100 - 200 meters) from Badskaeret to Little Koldeway (Cape Bornholm) - Several puddles due to melted snow on ice.		
29	Water temp -0.6 deg C.		
30	33 icebergs in area October 1960 through June 1961.		