UNITED STATES
DEPARTMENT OF INTERIOR
GEOLOGICAL SURVEY

YUKON RIVER ICE: FREEZE-UP DATA (1883 - 1975)

By Andrew G. Fountain[1] and Bruce H. Vaughn[1]

U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 84-601

[1]U.S. Geological Survey, Glaciology, Tacoma, WA

Tacoma, WA
1984

UNITED STATES DEPARTMENT OF THE INTERIOR

William P. Clark, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information write to:

U.S. Geological Survey
Project Office - Glaciology
1201 Pacific Avenue, Suite 450
Tacoma, Washington 98402

YUKON RIVER ICE: FREEZE-UP DATA (1983-1975)

by

Andrew G. Fountain and Bruce H. Vaughn

Introduction

The Yukon River flows from the Yukon Territory, Canada through the midsection of Alaska to its termination in Norton Sound in the eastern Bering Sea. Although the Yukon is the fifth largest river in North America by watershed area, little is known about its hydrology. Information about this river will become more important as the population increases in the basin.

Freeze-up observations have been sporadically collected on the Yukon River since the late 19th century. This report contains data from 29 different locations on the river; the earliest observations were made in 1883. The original purpose for collecting this data seems to have been for determining the closing date of the river to commerical shipping. One report (Ellsworth and Davenport, 1915), refers to the Northern Commercial Company, which was a shipping firm on the Yukon.

The purpose of this report is to compile all the presently known data on the freeze-up of the Yukon River for use in future scientific studies and engineering reports.

Data Tables

The format of this report is intended to be compatable with two previous reports on the break-up of the Yukon River (Stephens and others, 1979). Table 1 presents an annotated list of observation stations along the river. The distances upstream were measured from maps along the centerline of the river by

dividers set at 2-kilometer increments for reaches in the U.S., and 5-kilometer increments in Canada; results were rounded to the nearest kilometer. The origin, 0-kilometers, is on the inland tip of Flat Island, in the Kwikluak Channel of the Yukon River delta (Stephens and others, 1979). Figure 1 shows the origin and approximate location of all the stations along the Yukon River. Table 2 lists the data table headings, their definitions, and source of the data in that heading.

The freeze-up data is presented in Table 3 by station in upstream order. Not all of the possible column headings presented in Table 2 are included for each station; instead, only those headings that have data are shown. The data for each station are presented by year, then in each column by month/day. The years are given in water-year, which starts on October 1 and ends on September 30. This method is compatable with U.S. Geological Survey, practice and with Stephens and others (1979); thus an ice season commences with river freeze-up in the fall of, for example, water year 1960 (calendar year 1959), and ends with ice break-up in the spring of water year (and calendar year) 1960. Allen (1977) refers to an "ice year", which uses the calendar year date from the autumn rather than, as in the water year, the spring. The "ice year" of Allen (1977) may be adjusted to coincide with this report by adding 1 to the "ice year". When combining the freeze-up dates in this report with the breakup dates in Stephens and others (1979), no adjustment is necessary. Because of the ambiguous meaning of the table headings, which are not defined in our sources, and the probable lack of consistant application of standardized rules of freeze-up observation, the interpretation of the data is left to the user, i.e. caveat emptor.

References

Allen, W.T.R., 1977, Freeze-up, break-up and ice thickness in Canada: Fisheries and Environment Canada, Atmospheric Environment publication CLI-1-77, 185 p.

Brooks, A.H., 1906, Geography and geology of Alaska: U.S. Geological Survey Professional Paper 45, 327 p.

Ellsworth, C.E., and Davenport, R.W., 1915, Surface water supply of the Yukon-Tanana region, Alaska: U.S. Geological Survey Water Supply Paper 342, 343 p.

Orth, D.J., 1967, Dictionary of Alaska place names: U.S. Geological Survey Professional Paper 567, 1084 p.

Stephens, C.A., Fountain, A.G., and Osterkamp, T.E., 1979, Break-up dates for the Yukon River. Vol. I. Rampart to Whitehorse, 1896-1978. Vol. II. Alakanuk to Tanana, 1883-1978: Geophysical Institute, University of Alaska, Fairbanks.

U.S. Department of Commerce, 1917-76, Climatological Data, Alaska: Vol. 3-61, (published monthly).

Table 1. List of stations along the Yukon River where Freeze-up observations were made. Their position upstream and pertinent remarks are also included.

DISTANCE UP RIVER (km)	STATION	MAP SYMBOL	REMARKS
15	Alakanuk	AL	
20	Kwiguk	KW	
-	Hamilton	HA	On a river branch in the northern part of the Yukon delta, and therefore the system of distances is not applicable.
135	Mountain Village	MV	
143	Saint Marys	SM	Also known as Andreafsky. Rough distance estimate based on 10 km increments from Mountain Village.
175	Pilot Station	PS	
247	Fortuna Ledge	FL	Also known as Marshall
325	Russian Mission	RM	Also known as Ikogmut.
386	Paimiut	PA	Rough distance estimate based on 10 km increments from Russian Mission and Holy Cross.
426	Holy Cross	HC	
495	Anvik	AN	
515	Grayling	GR	
719	Kaltag	KA	
771	Nulato	NU	
800	Koyukuk	KO	
902	Galena	GA	
1,050	Ruby	RU	
1,100	Kokrines	KK	
1,240	Tanana	TA	Settled as "Fort Adams (American Station)" in 1869, later changed to Tanana (Brooks, 1906). Other nearby settlements whose observations are included under the Tanana heading: Mouth of Tanana and Fort Gibbon.

Table 1.--Continued.

DISTANCE UP RIVER (km)	STATION	MAP SYMBOL	REMARKS
1,348	Rampart	RA	
1,420	Stevens Village	SV	
1,547	Beaver	BE	
1,645	Fort Yukon	FY	
1,790	Circle	CI	
1,830	Coal Creek	CC	
2,005	Eagle	EA	
2,109	Fort Reliance	FR	Distance estimated from Dawson based on 10 km increments.
2,117	Dawson	DA	
2,800	Whitehorse	WH	Yukon River always a bit regulated at Marshall Lake for shipping purposes. River dam erected in 1958 (pers. comm. Bureau of Indian and Northern Affairs, Whitehorse, YT)

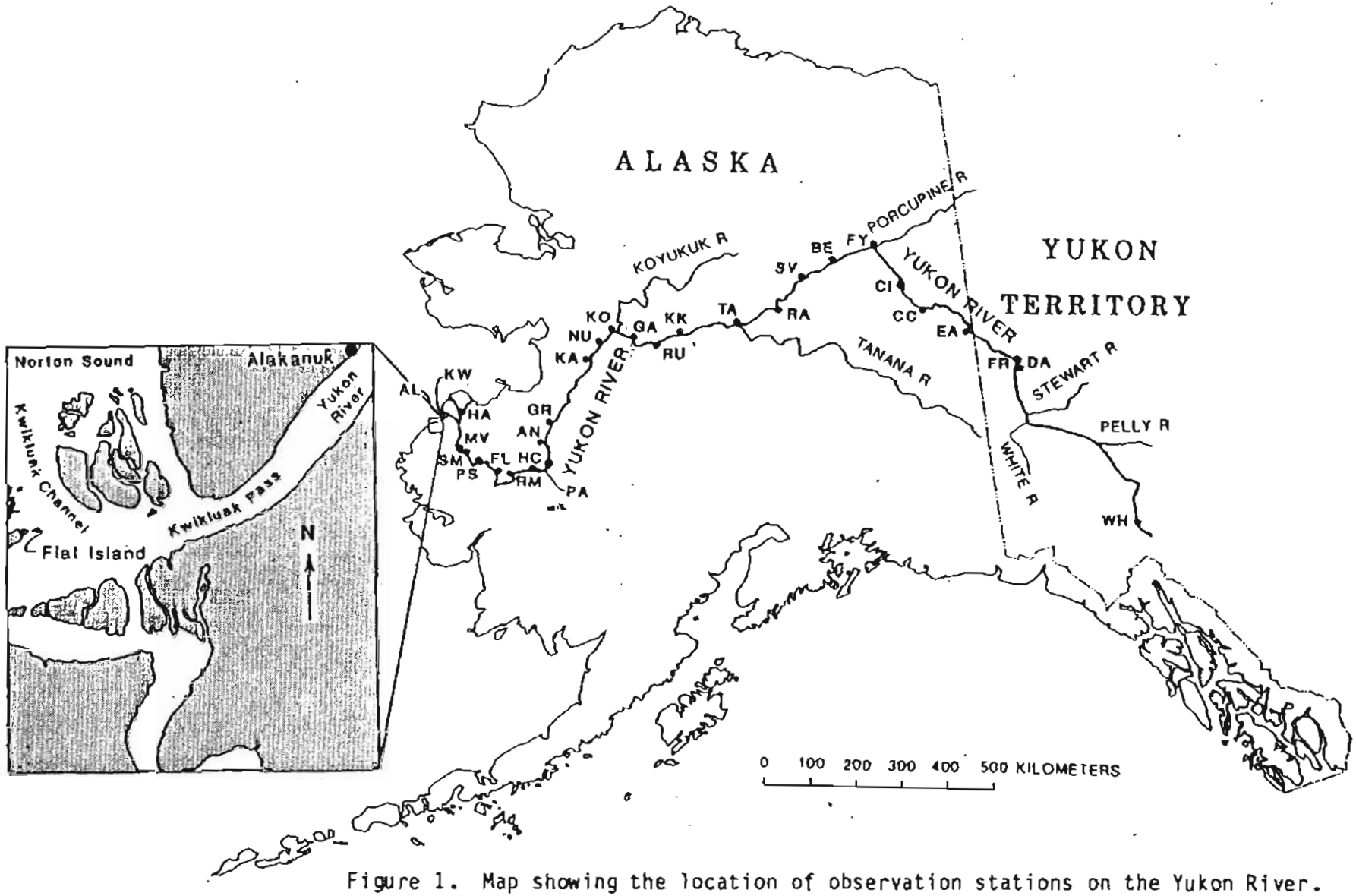

Figure 1. Map showing the location of observation stations on the Yukon River. The key to the abbreviation names are found in Table 1. The inset shows the origin of the distance measurements at Flat Island.

Table 2. A list of headings used in the data tables: their definition and data source.

TABLE HEADING	DEFINITION	SOURCE
Date of first ice	---	U.S. Department of Commerce
Date safe for man	---	do.
Date safe for vehicle	---	do.
Date ice conditions terminated	---	do.
Date closed in autumn	---	do.
Freeze-up	---	do.
Ice began running	---	Brooks (1906)
River closed	---	do.
Freeze-up (2)*	---	Ellsworth and Davenport (1915)
First permanent ice	The date "new ice formed on the water surface and did not melt completely again until its final deterioration during break-up the following" spring. Some doubt in earlier records.	Allen (1977)
Complete freeze over	The date "is the earliest date on which the water body was reported to be completely covered except for small open areas in rapids or water falls". Some doubt in earlier records.	do.
Ice safe for traffic	"in opinion of observer...to be safe for use by various types of traffic, or was in use by such traffic."	do.

*This notation indicates the same heading, but from a different source.

Table 3.1 Freeze-up dates for ALAKANUK given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating
1968	10/31			
1967	10/21	10/28	11/03	
1965	10/18	11/04	11/10	10/20
1964	10/18	10/25	11/03	10/18
1962	10/22	11/04	11/06	10/15
1960		11/17		
1959	10/20	10/24		
1958	10/25	11/10		
1957	10/17	10/19		
1956	10/19	10/28		
1955	11/01	11/14		

Table 3.2 Freeze-up dates for KWIGUK given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating
1964	10/31	11/05	11/10	10/15
1963	10/31	11/05	11/10	10/15
1962	10/12	11/08	11/10	10/08
1956		11/01		

Table 3.3 Freeze-up dates for HAMILTON given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Freeze up
1967	10/18	10/23	11/15		
1965	10/22	10/30	11/13	10/17	
1962	10/16	10/27	11/17	10/10	
1961	10/23	11/02			
1960		10/04			
1959	10/18	10/22			
1958	10/27	11/01			
1957	10/16	10/19			
1956	10/18	10/22			
1955	10/23	10/30			
1954	10/25	10/31			
1953	10/22	11/01			
1952	10/05	10/22			
1951	10/27	11/01			
1950					10/29
1949					10/21
1947					11/01
1946					10/22
1945					10/23
1944					10/30
1942					10/19
1941					10/22
1940					10/15
1939					11/02

Table 3.4 Freeze-up dates for MOUNTAIN VILLAGE given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up
1974	10/15	11/10	11/15	10/15		
1972	10/15	11/08	11/10	10/21		
1971	10/10	10/28	10/30	10/10		
1970	10/30	11/07	11/12	10/29		
1969	10/20	11/04	11/07			
1968	10/19	11/04	11/08	10/19		
1967	10/18	10/28	10/29			
1966	10/13	10/29	10/29	10/15		
1965	10/25	11/09	11/09	10/18		
1964	10/19	11/03	11/08	10/27		
1963	10/14	11/10	11/12	11/05		
1962	10/12	11/06	11/08	10/12		
1961	10/15					
1960	10/18	10/31				
1959	10/19	10/29				
1958	10/23	11/09				
1957	10/14	10/28				
1956	10/17	10/31				
1955	10/21	11/12				
1954	10/09	11/04				
1953	10/15	11/17				
1951		11/04			10/26	
1950					12/22	
1946						11/12
1945						11/08
1944						11/02
1941						11/05
1940						11/01
1938						11/20

Table 3.5 Freeze-up dates for SAINT MARYS given by month and day.

Water year	Freeze up(2)
1912	11/08
1911	10/22
1910	10/06
1909	10/23
1908	10/09

Table 3.6 Freeze-up dates for PILOT STATION given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up
1973	11/02	11/15	11/20			
1970	10/27	11/05	11/13			
1969	10/16	11/01	11/11			
1968	10/17	11/30				
1966	10/02	10/10	11/12			
1962		11/12	11/17			
1957	10/15	10/24				
1956	10/20	11/01				
1944						11/11
1939						11/09
1926					11/13	
1925					10/27	

Table 3.7 Freeze-up dates for FORTUNA LEDGE given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up
1975	10/11	10/20	10/28	10/11		
1974	10/15	11/01	11/04	10/15		
1973	11/01	11/06	11/10	10/30		
1972	10/12	11/06	11/09	10/12		
1971	10/15	10/27	10/29	10/14		
1970	10/30	11/07	11/10	10/29		
1969	10/19	10/26	10/30	10/18		
1968	10/20	10/27	11/06	10/19		
1966	10/12	10/21	11/01	10/11		
1965	10/26	11/08	11/16			
1964	10/19					
1963	10/10	10/20	11/01	10/15		
1962	10/12	10/28	11/07			
1961	10/15	11/11				
1960		11/06				
1959	10/17	10/27				
1958	10/20	11/18				
1957	10/12	10/29				
1956	10/17	10/28				
1955	10/20	11/12				
1954	10/20	11/09				
1953	10/22	11/25				
1952	10/05	10/30				
1951	10/26	11/06				
1950						11/19
1941						10/27
1940						10/21
1939						11/11
1938						11/06

Table 3.8 Freeze-up dates for RUSSIAN MISSION given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	River closed
1975	10/11	10/31	11/06				
1974	10/15		11/09				
1973	10/06	11/07	11/09	11/01			
1972	10/08	11/30	12/01				
1971	10/14			11/04			
1970	10/29		11/27				
1969	10/18	11/07	11/17				
1968	10/19	12/02					
1967	10/16	11/25					
1961	10/15	11/12					
1960		11/06					
1955	10/19	11/14					
1945						11/08	
1944						10/22	
1942						11/04	
1941						11/12	
1940						11/01	
1939						11/06	
1938						11/15	
1929					10/21		
1886							10/30

Table 3.9 Freeze-up dates for PAIMIUT given by month and day.

Water year	Date of first ice	Date safe for man	Freeze up
1956	10/11	10/27	
1955	10/27	11/12	
1945			11/09
1944			11/11

Table 3.10 Freeze-up dates for HOLY CROSS given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Ice began running	River closed
1975	10/20	10/28	10/30				
1974	10/28	10/30	11/02				
1973	11/04	11/10	11/12				
1970	10/27	11/03	11/08				
1968	10/19	10/29	10/28	10/23			
1967	10/20	11/01	11/05				
1966	10/11	10/23	10/25	10/14			
1965	10/27	11/06	11/13	10/27			
1964	10/14	11/07	11/26	10/16			
1963	10/21	11/11		10/07			
1962	10/14	10/25	10/28	10/12			
1961	10/15	11/04					
1960	10/13	10/24					
1959	10/20	10/26					
1958	10/14	11/15					
1957	10/05	11/01					
1956	10/16	10/28					
1955	10/17	11/03					
1953	10/22	11/23					
1952	10/11	10/24					
1951		11/01			10/21		
1950					11/07		
1949					10/09		
1948					10/15		
1945					11/11		
1944					11/02		

Table 3.10 (con't.) Freeze up dates for HOLY CROSS given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Ice began running	River closed
1942					10/25		
1941					10/24		
1940					10/22		
1939					11/09		
1938					11/15		
1937					11/13		
1936					11/01		
1935					11/30		
1933					10/15		
1932					10/12		
1931					10/18		
1930					10/15		
1929					11/06		
1928					10/20		
1927					11/07		
1926					11/09		
1925					10/24		
1922					10/28		
1918					10/27		
1917					11/04		
1916					10/24		
1915					11/05		
1914					10/24		
1913					10/24		
1912					10/26		
1911					11/08		
1910					10/21		
1909					10/16		

Table 3.10 (con't.) Freeze-up dates for HOLY CROSS given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Ice began running	River closed
1908					10/23		
1907					10/26		
1906					11/02		
1905					10/23		
1904					11/02		
1903					10/19		
1902					11/02		
1901					10/25	10/16	10/25
1900					10/29	10/05	10/29
1899					10/29		
1898					10/19		10/19
1897					11/03	10/10	11/03
1896					11/04		
1895					10/24	10/14	10/24
1893					10/17		
1892					11/01		
1891					10/24		
1890					10/17		

Table 3.11 Freeze-up dates for ANVIK given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	Ice began running	River closed
1975	10/02	10/25	10/25	10/02				
1974	10/09	10/15	10/16	10/09				
1973	10/06	11/09	11/10	11/05				
1972	10/10	11/04	11/10	11/04				
1971	10/02	11/02	11/02	10/27				
1970	10/28	11/06	11/09	11/01				
1969	10/08	11/02	11/15					
1968	10/18	10/25	11/20	10/19				
1967	10/21	10/28	11/03					
1966	10/11	10/30	11/02	10/11				
1964	10/13	10/19	11/01	10/16				
1963	10/26	11/04	11/16	10/12				
1959	10/07	10/15						
1958	10/15	11/14						
1957	10/13	10/19						
1955	10/20	11/10						
1954	10/26	10/03						
1953	10/22	11/25						
1952	10/09	11/07						
1950						11/15		
1949						10/26		
1947						11/05		
1946						11/04		
1945						11/03		
1944						11/02		

Table 3.11 (con't.) Freeze-up dates for ANVIK given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	Ice began running	River closed
1942						10/31		
1941						10/26		
1940						11/03		
1939						11/10		
1938						11/19		
1885					10/12		10/05	10/12
1884					11/07		10/25	11/07
1883					10/27		10/26	10/27

Table 3.12 Freeze-up dates for GRAYLING given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating
1975	10/07	10/24	10/25	10/07
1974	10/04	11/02	11/02	10/14
1973	10/04	11/06	11/07	10/26
1972	10/08	11/09	11/09	10/09
1971	10/30	11/05	11/05	11/04
1970	10/20			

Table 3.13 Freeze-up dates for KALTAG given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Freeze up
1975	10/07	11/01	11/03	10/07	
1974	11/01	11/10	11/11	11/03	
1973	10/05	11/10	11/14	10/15	
1967	10/15	10/24	11/14		
1966	10/10		11/18		
1964	11/03	11/06	11/08		
1963	10/19	11/14	11/19	11/11	
1962	10/02	11/11	11/25	11/25	
1960	11/02	11/06			
1956	10/14	11/04			
1955	10/15	11/16			
1951	10/12	11/13			
1950					11/07
1945					11/08
1944					11/06
1942					11/03
1941					11/04
1938					11/18

Table 3.14 Freeze-up dates for NULATO given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	River closed
1965	10/18	11/13					
1964	10/14	11/01	11/05				
1963	10/19	11/17	11/18				
1962	10/09	11/11					
1960	10/13	11/03					
1959	10/07	10/18					
1958	10/14	11/28					
1955	10/14	11/12					
1954	10/19	10/31					
1953	10/20	11/02					
1952	10/10	10/27					
1951	10/13	11/03					
1950						11/10	
1949						10/31	
1947						11/10	
1946						11/04	
1945					11/07		
1944					11/05		
1942					10/13		
1941					10/25		
1940					10/22		
1939					11/05		
1938					11/17		
1937					11/06		
1936					10/26		
1935					11/06		
1934							

Table 3.14 (con't.) Freeze-up dates for NULATO given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	River closed
1924					11/09		
1923					11/08		
1922					11/14		
1921					11/20		
1920					11/16		
1919					10/30		
1918					10/30		
1916					11/01		
1913					10/24		
1912					11/11		
1910					10/22		
1909					10/28		
1908					10/29		
1895							10/16

Table 3.15 Freeze-up dates for KOYUKUK given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Freeze up
1964	10/25	11/16	11/16	11/15	
1963	10/25	11/16	11/16	11/15	
1956	11/05	11/06			
1955	10/14	10/25			
1954	10/21	11/06			
1953	10/20	12/01			
1952	10/13	10/15			
1951	10/12	11/15			
1950					11/14
1949					11/08
1947					11/09
1946					11/10
1945					11/10
1942					11/20
1941					11/12
1940					10/25

Table 3.16 Freeze-up dates for GALENA given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn
1975	10/01	10/23	12/11	10/03	
1968	10/08	11/11	11/15	11/01	
1967	10/10	10/25	10/29		
1966	10/07	10/27	11/10	10/08	
1965	11/04	11/15	11/20	11/09	
1964	10/11	10/19	11/28	10/24	
1963	10/05	11/10	11/20		
1958	10/13	10/31			
1957	10/03	10/18			
1956	10/15	10/25			
1955		11/20			
1953		11/04			
1952	10/05	11/05			
1951		12/08			10/29
1950					11/08
1949					10/27
1948					10/11
1947					11/07
1946					11/06
1945					11/07
1944					11/10

Table 3.17 Freeze-up dates for RUBY given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up
1975	10/06	10/28	10/31	10/04		
1974	10/12	11/06	11/06	10/15		
1973	10/04	11/12	11/18	10/07		
1967	10/16	11/20				
1965	10/20	11/14	11/14			
1963	10/17	11/12	11/15			
1962	10/08	10/30	11/06	10/01		
1961	10/10	11/13				
1958	10/16	11/09				
1957	10/04	10/25				
1956	10/07	10/29				
1955	10/11	11/13				
1944						11/01
1942					10/30	
1941					11/06	
1939					11/02	
1938					11/18	
1937					11/13	
1936					11/15	
1922					11/02	

Table 3.17 (con't.) Freeze-up dates for RUBY given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up
1918					10/28	
1917					11/18	
1916					10/30	
1915					10/07	
1914					10/27	
1913					10/27	
1912					11/09	

Table 3.18 Freeze-up dates for KOKRINES given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up
1956	10/13	10/29				
1955	10/12	11/08				
1947						11/03
1946						10/11
1941						11/05
1940						10/24
1939						11/06
1911					11/03	
1910					10/29	
1909					10/24	
1908					10/27	
1907					11/12	

Table 3.19 Freeze-up dates for TANANA given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Ice began running	River closed
1974	10/13	11/10	11/21	10/13			
1973	10/02	11/10	11/18	10/02			
1972	10/03	11/20	12/11	10/15			
1971	10/01	10/28	11/07	10/10			
1970	10/20	11/14	12/07	10/22			
1967	A 10/17	10/31					
	B 10/17	10/31					
1966	10/07	11/07		11/03			
1965	A 10/20	11/10	11/20	10/22			
	B 10/18	11/11	11/20	10/20			
1962	10/08	11/07	11/15	10/10			
1961	10/10	11/01					
1960	10/18						
1959	10/04	10/20					
1958	10/12	11/09					
1957	10/08	10/14					
1956	10/12	11/05					
1955	10/06	11/10					
1954	10/05	11/03					
1953	10/10	11/15					
1952	10/04	10/29					
1951		11/05			10/09		
1949					10/28		
1948					11/10		

A Above confluence with Tanana River
B Below confluence with Tanana River

Table 3.19 (con't.) Freeze-up dates for TANANA given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Ice began running	River closed
1942					10/24		
1941					11/07		
1940					10/28		
1939					11/08		
1938					11/22		
1937					11/13		
1936					11/12		
1935					11/04		
1934					10/24		
1933					11/06		
1932	11/06						
1931	10/13						
1930	10/21						
1929	11/05						
1928	10/30						
1927	10/18						
1926	11/09						
1925	11/01						
1924	11/15						
1923	11/03						
1922	11/04						
1920	11/06						
1919	10/26						
1918	10/29						
1917	11/07						
1916	10/26						
1915	11/10						
1914	10/26						

Table 3.19 (con't.) Freeze-up dates for TANANA given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Ice began running	River closed
1913	11/04						
1912	11/08						
1911	11/04						
1910	11/03						
1909	10/26						
1908	10/27						
1907	11/09						
1906	10/26						
1905	11/04						
1904	10/21						
1903	11/07						
1902	11/03						
1901	10/30						
1886	11/29					10/14	11/29
1884	11/04					10/25	11/04
1883	10/30						

Table 3.20 Freeze-up dates for RAMPART given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	Freeze up(2)
1975	10/02	10/31	10/31	10/04			
1967	10/17	11/02	11/02				
1966	10/18	10/24	11/02	10/09			
1964	10/18	11/10	12/02	10/18			
1960	10/11	11/04					
1959	10/05	10/28					
1957	10/10	10/26					
1956	10/13	11/07					
1955	10/13	11/15					
1954	10/05	11/05					
1953	11/05	11/22					
1952	10/07	10/28					
1951	10/10	11/06					
1950						11/21	
1949						11/06	
1947						11/03	
1946						11/23	
1945						11/12	
1944						11/06	
1931					10/13		
1930					10/17		
1929					11/14		
1928					11/04		

Table 3.20 (con't.) Freeze-up dates for RAMPART given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	Freeze up(2)
1927					11/22		
1926					11/11		
1925					11/11		
1924					11/20		
1923					11/11		
1922					11/06		
1921					10/16		
1919					10/25		
1918					10/31		
1914					10/29		
1913					11/07		
1912					11/07		
1911					11/06		11/06
1910					11/06		11/06
1909					10/29		10/29
1908					11/02		11/02
1907					11/10		11/10
1906					10/29		10/29
1905					11/11		11/11
1904					10/24		10/24
1903					11/09		11/09
1902					11/08		11/08
1901					11/03		11/03
1900					11/06		11/06
1899					10/27		10/15

Table 3.21 Freeze-up dates for STEVENS VILLAGE given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Freeze up
1974	10/13	10/20			
1973	10/02	10/14	10/26		
1972	11/03	11/05	12/01		
1970	10/19	11/17	11/24	10/21	
1967	10/17	10/24			
1960	10/10	10/16			
1959	10/04	10/20			
1958	10/13	11/10			
1957	10/10	10/28			
1955	10/13	11/13			
1954	09/10	11/03			
1953	10/20	11/30			
1952	10/05	11/01			
1951	10/11	11/14			
1950					11/30
1947					11/01
1946					11/12
1944					11/10
1941					11/15

Table 3.22 Freeze-up dates for BEAVER given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Freeze up
1975	10/02	11/15	11/25	10/03	
1974	10/09	10/25	10/28	10/15	
1973	10/01	11/08	11/08	10/01	
1972	10/21				
1971	10/15	11/01	11/01		
1970	10/21	11/01	11/01		
1969	10/17	12/01	12/01		
1966	10/12	11/01	11/12		
1964	10/18	11/08	11/20	10/18	
1963	10/23		11/23	11/03	
1962	10/08	11/20		10/18	
1961	10/11	10/30			
1960	10/11	11/04			
1959	10/05	11/02			
1957	10/10	10/18			
1956	10/13	11/08			
1955	10/11	11/08			
1954	10/19	11/01			
1953	10/12	11/24			
1950					10/26
1949					10/27
1947					11/02
1946					11/12
1945					11/12
1944					11/16
1942					10/26
1941					11/03

Table 3.23 Freeze-up dates for FORT YUKON given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Ice began running	River closed
1975	10/02	10/10	10/10	10/01			
1974	10/09	10/20	10/20	10/09			
1973	09/30	10/18	10/25	10/02			
1972	10/02	11/01	11/01				
1971	10/10		11/01				
1970	10/12	10/30		10/10			
1965	10/05	11/04	11/23				
1963	10/05		11/20	10/29			
1961	10/12	11/12					
1960		10/25					
1958	10/12	10/19					
1957	09/25	10/21					
1956	10/12						
1953	10/26	11/15					
1952	10/09	10/25					
1951		10/27					
1950					10/27		
1949					11/01		
1948					11/02		
1947					10/30		
1946					10/30		
1945					10/30		
1944					11/09		

Table 3.23 (con't.) Freeze-up dates for FORT YUKON given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Ice began running	River closed
1943							
1942					10/14		
1941					11/06		
1940					10/15		
1939					11/14		
1938					11/12		
1937					11/05		
1934	10/21						
1933	10/25						
1932	10/22						
1931	10/21						
1930	10/23						
1929	10/20						
1928	10/19						
1927	10/26						
1926	10/30						
1925	10/15						
1922	10/28						
1919	10/22						
1900	10/26					10/03	10/26

Table 3.24 Freeze-up dates for CIRCLE given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up(2)
1965	10/26	11/08				
1962	09/10	10/15	12/01	09/18		
1958	10/20	11/04				
1956	10/01	11/07				
1953	11/18	11/26				
1951	10/22	11/01				
1950					11/14	
1949					11/05	
1947					11/01	
1946					11/02	
1945					11/08	
1942					10/18	
1941					11/05	
1940					10/18	
1939					10/04	
1918					10/25	
1917					11/01	
1916					10/19	
1915					11/10	
1914					10/24	
1913					10/26	10/26
1912					11/02	11/02

Table 3.24 (con't.) Freeze-up dates for CIRCLE given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up(2)
1911					10/29	10/29
1910					10/02	10/02
1909					10/23	10/23
1908					10/18	10/18
1907					11/08	11/08
1906					10/23	10/23
1905					11/03	11/03
1904					10/21	10/21
1903					11/05	11/05
1902					10/15	10/15

Table 3.25 Freeze-up dates for COAL CREEK given by month and day.

Water year	Freeze up(2)
1947	11/12
1946	11/04
1945	11/12
1944	11/07
1941	11/20
1939	11/01

Table 3.26 Freeze-up dates for EAGLE given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	Ice began running	River closed	Freeze up(2)
1975	10/03	11/30	11/30	10/19					
1974	10/15	11/16	11/20	10/20					
1973	10/10	11/29	12/04	10/22					
1972	10/17	12/05	12/09	10/15					
1971		11/24							
1970	10/24	12/01	12/10	11/17					
1969	10/28	12/15	12/20	10/30					
1960	10/15	11/23							
1959	10/09	11/14							
1958	10/24	12/05							
1957	10/12								
1956	10/15	11/12							
1955	11/11	12/04							
1954	10/25	11/26							
1953	10/30	12/09							
1952	10/12	11/23							
1950					12/11				
1949					11/22				
1948					12/09				
1947						11/21			
1946						11/17			
1944					12/09				
1942						11/11			
1941						11/10			
1940						11/03			

Table 3.26 (con't.) Freeze-up dates for EAGLE given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	Ice began running	River closed	Freeze up(2)
1939						11/16			
1938						11/26			
1934					10/19				
1932					11/18				
1931					10/18				
1930					10/21				
1929					11/29				
1928					11/14				
1927					11/25				
1926					12/03				
1925					11/30				
1924					11/30				
1923					11/18				
1922					11/23				
1919					10/28				
1918					11/11				
1914					11/16				
1913					11/16				11/16
1912					11/15				11/15
1911					11/08				11/08
1910					11/22				11/22
1909					10/29				10/29
1908					11/04				11/04
1907					11/14				11/14

Table 3.26 (con't.) Freeze-up dates for EAGLE given by month and day.

Water year	Date of first ice	Date safe for man	Date safe for vehicle	Date ice conditions terminated boating	Date closed in autumn	Freeze up	Ice began running	River closed	Freeze up(2)
1906					10/19				10/19
1905					11/14				11/14
1904					11/13				11/13
1903					11/19		10/21	11/19	11/11
1902					11/15				11/15
1901					11/13				11/13
1900					11/02				11/02
1899					11/08				11/08
1886							11/09		
1885							10/05	10/10	
1883							10/13	11/05	

Table 3.27 Freeze-up dates for FORT RELIANCE given by month and day.

Water year	Ice regan running	River closed
1886	10/17	11/09
1883	10/22	11/02

Table 3.28 Freeze-up dates for DAWSON given by month and day.

Water year	Date closed in autumn	Freeze up(2)	First permanent ice	Complete freeze over	Ice safe for traffic*
1975			09/27	11/15	01/05
1974			10/12	11/04	11/14
1973			10/03	11/05	11/25
1972			10/14	11/09	12/01
1971			10/04	11/17	12/07
1970			10/16	11/14	12/16
1956				11/03	
1955				11/13	
1954				11/06	
1953				12/01	
1951				11/02	
1950				11/26	
1949				11/09	
1947	11/09			11/09	
1946	11/04			11/04	
1945	12/09			12/09	
1944	11/29			11/29	
1943				12/18	
1942	11/03			11/03	
1941	11/06			11/06	
1940	11/12			11/12	
1939	11/05			11/05	
1938	11/25			11/25	
1937				12/04	
1919	11/16				
1918	11/04				
1917	11/07				
1916	10/27				

* Traffic over 10,000 lbs.

Table 3.28 (con't.) Freeze-up dates for DAWSON given by month and day.

Water year	Date closed in autumn	Freeze up(2)	First permanent ice	Complete freeze over	Ice safe for traffic
1915	11/15				
1914	11/07				
1913	11/08	11/08			
1912	11/08	11/08			
1911	11/04	11/04			
1910	11/11	11/11			
1909	10/26	10/26			
1908	11/02	11/02			
1907	11/07	11/07			
1906	10/10	10/10			
1905	11/06	11/06			
1904	11/09	11/09			
1903	11/04	11/04			
1902	11/12	11/12			
1901	11/02	11/02			
1900	10/23	10/23			
1899	11/05	11/05			
1898	11/08	11/08			
1897	11/13	11/13			

Table 3.29 Freeze-up dates for WHITEHORSE given by month and day.

Water year	Freeze up(2)	First permanent ice	Complete freeze over	Ice safe for traffic
1975		10/10	01/07	01/15*
1974		11/05	11/15	
1973		11/17	12/15	
1972		11/03	11/26	
1971		11/18	12/18	
1970		11/16		
1969		12/10	01/08	
1968		11/24	01/14	
1967		10/20	12/12	
1966		10/17	12/30	
1965		10/30e	12/14e	
1964		11/15	01/14	
1963		11/19	01/21	
1962		10/07	12/23e	
1961		11/06	01/10	
1960		11/11e	01/05	
1959		11/15e	12/06	
1958			12/07	12/08**
1957			12/01	
1956			11/10	
1955			11/30	
1954			12/07	
1953			12/10	
1952			11/16	
1951			11/06	
1950			12/17	
1949			11/21	
1948			12/10	
1947			11/17	
1946			11/12	
1945			12/23	

* for person to snowmobile weight
** estimated person to snowmobile weight
e approximate date

Table 3.29 (con't.) Freeze-up dates for WHITEHORSE given by month and day.

Water year	Freeze up(2)	First permanent ice	Complete freeze over	Ice safe for traffic
1944			01/02	
1943			11/09	
1942			11/16	
1941			11/24	
1940			11/16	
1939			11/22	
1938	12/07		12/07	
1937			12/06	
1936			12/04	
1935			11/23	
1934			11/27	
1933			11/10	
1932			11/18	
1931			11/17	
1930			12/08	
1929			11/24	
1928			11/14	
1927			11/25	
1926			12/05	
1925			12/14	
1924			12/08	
1923			12/04	
1922			11/20	
1921			11/25	
1920			11/24	
1919			12/08	
1918			11/29	
1917			11/27	
1916			11/27	
1915			12/03	
1914			11/20	
1913			12/03	

Table 3.29 (con't.) Freeze-up dates for WHITEHORSE given by month and day.

Water year	Freeze up(2)	First permanent ice	Complete freeze over	Ice safe for traffic
1912			11/14	
1911			11/19	
1910			11/12	
1909			11/01	
1908			12/13	
1907			11/29	
1906			11/27	
1905			11/23	
1904			11/14	
1903			11/22	
1902			11/21	