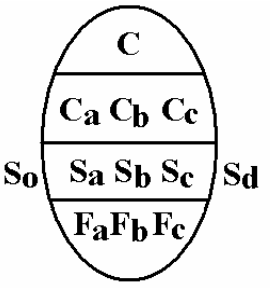
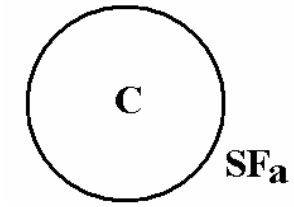
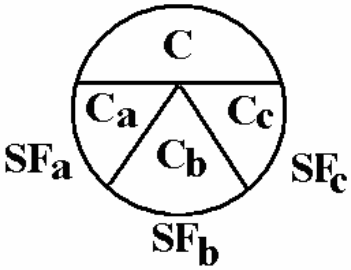
Reference tables for International and Russian national symbology according to [1] *WMO Sea-Ice Nomenclature, Supplement № 4, WMO/OMM/BMO -No.259, 1989*, [2] *Manual on ice air reconnaissance* (Rukovodstvo po proizvodstvu ledovoi aviatsionnoi razvedki), GIMIZ, 1974 and [3] *Ice Chart Colour Standard, WMO/Td-No.1215, 2004*



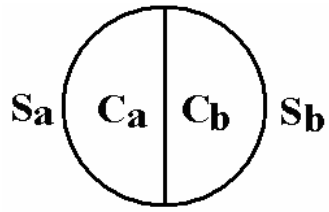
International egg-symbol



Drifting ice, Russian symbol



Drifting ice, Russian symbol



Fast ice, Russian symbol

Table 1. Total concentration of ice (C)

Concentration	Symbol
Ice free	
Less than one tenth	0
1/10	1
2/10	2
3/10	3
4/10	4
5/10	5
6/10	6
7/10	7
8/10	8
9/10	9
More than 9/10 less than 10/10	9+
10/10	10
Undetermined or unknown	x

Concentration (C)
C – Total concentration of ice in the area, reported in tenths (see symbols in table 1).
Note: Ranges of concentration may be reported.
C_a C_b C_c – Partial concentrations of thickest (C_a), second thickest (C_b) and third thickest (C_c) ice, in tenths.
Note: Less than 1/10 is not reported. 10/10 of one stage of development is reported by C, S_a and F_a or C S_a F_p F_s
Note: **a**cc. to **Russian national symbology** fast ice is indicated by **hatching**

Stage of development (S)
S_a S_b S_c – Stage of development of thickest (S_a), second thickest (S_b) and third thickest S_c) ice, of which the concentrations are reported by C_a, C_b, C_c respectively (see symbols in table 2).
Notes:
(1) If more than one class of stage of development remains after selection of S_a and S_b, S_c should indicate the class having the greatest concentration of the remaining classes (see also Note (2))
(2) Reporting of S_a, S_b and S_c should generally be restricted to a maximum of three significant classes. In exceptional cases, further classes can be reported as follows:
S_o – stage of development of ice thicker than Sa but having a concentration of less than 1/10;
S_d – stage of development of any other remaining class.
(3) No concentration are reported for S_o and S_d.
(4) **a**cc. to **Russian national symbology** depiction of stages of development (SF_a SF_b SF_c) is combined with depiction of forms of ice

Form of ice (F)
(a) First variant-
F_a F_b F_c – Form of ice (floe size) corresponding to S_a, S_b and S_c respectively (see symbols in table 3.3).
Notes: (1) Absence of information on any one of these forms of ice should be reported with an "x" at the corresponding position.
(2) When icebergs are present in sufficient numbers to have concentration figure, this situation can be reported with $F_a = 9$, the appropriate symbol for S_a and the corresponding partial concentration C_a.
(3) In situation when only two stages of development are present, a dash (-) should be added in place of F_c to separate these situations from those when F_p and F_s are being reported.

(b) Second variant
F_p F_s – Predominant (F_p) and secondary (F_s) floe size, reported independently from S_a, S_b and S_c respectively (see symbols in table 3.3).
Note: If only the predominant floe size (form of ice) is reported, only the symbol for F_p shall be reported.

(c) Russian national symbology
Acc. to **Russian national symbology** depiction of stages of development (SF_a SF_b SF_c) is combined with depiction of forms of ice

Table 2. Stage of development and thickness (S_a S_b S_c S_o S_d)

№ WMO Nomen.	Stage of development	Ice thickness interval	Symbol		Sample coding		Color code
			[1]	[2]	Drifting ice	Fast ice	[3]
1	2	3	4	5	6	7	8
4.2.8	Ice free	-	0				
2.1	New ice	-	1				
2.2	Nilas	< 10 cm	2				
2.2.1	Dark nilas	0-5 cm	2				
2.2.2	Light nilas	5-10 cm	2				
2.2.3	Ice rind	0-5 cm	2				
2.4	Young ice	10-30 cm	3				
2.4.1	Grey ice	10-15 cm	4				
2.4.2	Grey-white ice	15-30 cm	5				
2.5	First-year ice (FY)	30-200 cm	6				
2.5.1	FY thin ice (white ice)	30-70 cm	7				
2.5.1.1	FY thin ice (white ice) first stage	30-50 cm	8				
2.5.1.2	FY thin ice (white ice) second stage	50-70 см	9				
2.5.2	FY medium ice	70-120 см	1•				
2.5.3	FY thick ice	> 120 см	4•				
2.6	Old ice (MY)		7•				
2.6.1	FY residual ice	50—180 cm	6•				-
2.6.2	Second-year ice	180-280 cm	8•				
2.6.3	Multi-year ice	> 300 cm	9•				
10.4	Drifting ice of land origin		▲•				▲▲
	Ice of undefined stage of development		x				? ?
	Indicator of ice thickness intervals (cm) beginning from the oldest	100-150 20-50					

Table 3. - Form of ice (F_a F_b F_c F_p F_s)

№ WMO Nomen.	Form of ice	Floe size	Symbol	
	1	2	3	4
4.3.1	Pancake ice	-	0	
4.3.3.1	Small ice cake; brash ice	< 2 m	1	
4.3.3	Ice cake	2-20 m	2	
4.3.2.5	Small floe	20-100 m	3	
4.3.2.4	Medium floe	100-500 m	4	
4.3.2.3	Big floe	500 m-2 km	5	
4.3.2.2	Vast floe	2-10 km	6	
4.3.2.1	Giant floe	> 10 km	7	
3.1	Fast ice	-	8	See table 2
10.4.2	Icebergs, bergy bits, growlers or floebergs	-	9	See table 4
	Undetermined or unknown	-	x	

Table 4. – Calved ice of land origin (icebergs)

№. WMO Nomen.	Iceberg form	Symbol
1	2	3
10.4.2.1	Glacier berg	
10.4.2.2	Tabular berg	
	Dome-shaped berg	
	Inclined berg	
	Destructing berg	
10.4.4	Bergy bit	
10.4.5	Growler	
	Icebergs concentration	C C
10.4.3	Ice island	

Table 5. Sea ice surface characteristics and openings in ice

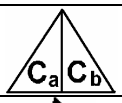
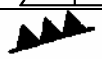
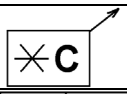
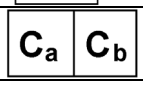
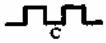
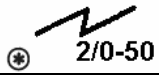
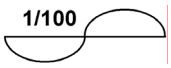
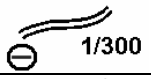
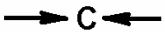
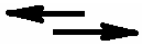
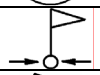
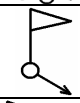
№ WMO Nomen.	Characteristic	Symbol
1	2	3
8.2.3.1	Hummocks concentration (points)	
8.2.2.	Ridge	
8.6	Snow on ice concentration (points) and predominant direction of zastrugi (arrow)	
9.0	Stages of melting (points)	
6.4	Rafted ice and raftness concentration (points)	
4.4.8.1.1	Jammed brash barrier	
7.1.1	Crack (ice stage of development covering the crack, number within area/width)	
7.1.2-7.1.5	Fracture (ice stage of development covering the crack, number within area/width)	
7.3	Lead (ice stage of development covering the crack, number within area/width)	
5.	Ice drift	
5.1	Diverging	
5.2	Compacting (points)	
5.3	Shearing	

Table 6. Terms related to surface shipping

№ WMO Nomen.	Characteristic	Symbol
1	2	3
	Recommended place for the ship	
12.1	Ship beset by ice	
	Recommended route for the ship	
	Route of ship drift