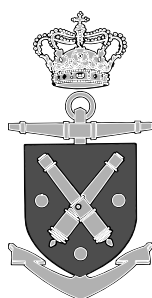


# IS- OG BESEJLINGSFORHOLDENE I DE DANSKE FARVANDE

I VINTEREN 2004-2005

ICE AND NAVIGATIONAL CONDITIONS  
IN DANISH WATERS DURING THE WINTER  
2004-2005



UDGIVET AF  
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# IS- OG BESEJLINGSFORHOLDENE I DE DANSKE FARVANDE I VINTEREN 2004 - 2005

Oplysningerne til denne beretning om is- og besejlingsforholdene i de danske farvande i vinteren 2003-2004 er indsamlet og bearbejdet som i tidligere år.

## Almindelig oversigt

Luftens middeltemperatur og antallet af frostdøgn i efterårs- og vintermånederne var for hele landet, ifølge oplysninger fra Danmarks Meteorologiske Institut, som følger:

### November

+5°5 mod normalt +4°7 (afv. +0°8)

ant. døgn med frost 7,3 mod normalt 7,3 (afv. 0)

### December

+4°1 mod normalt +1°6 (afv. +2°5)

ant. døgn med frost 8,6 mod normalt 15,0 (afv. -6,4)

### Januar

-3°7 mod normalt +0°0 (afv. -3°7)

ant. døgn med frost 9,9 mod normalt 19,0 (afv. -9,1)

### Februar

+0°3 mod normalt +0°0 (afv. +0°3)

ant. døgn med frost 21,5 mod normalt 19,0 (afv. -2,5)

### Marts

+1°5 mod normalt +2°1 (afv. +0°6)

ant. døgn med frost 18,9 mod normalt 15,0 (afv. -3,9)

Overfladevandets temperatur lå generelt over normalen (gennemsnits-temperaturen gennem 35 år). Fra slutningen af februar til midten af marts lå temperaturen lige under normalen, og lå i denne periode på +1°.

Den første ismelding indløb den 24. januar 2005 fra Ringkøbing Havn, de sidste ismelding blev modtaget den 23. marts 2005 og fra den 24. marts var der ikke længere is i de danske farvande.

Der blev i alt modtaget 875 ismeldinger i vinteren 2004 - 2005.

Det kolde vejr fra slutningen af februar til midten af marts var ikke nok til, at der kunne dannes større is forekomster. Isdannelserne i de danske farvande i vinteren 2004 -2005 gav ikke anledning til problemer for skibsfarten.

Første ismelding fra Sverige bev modtaget den 18. november 2004 og den sidste den 20. maj 2005.

Således viser:

Tabel 1: Luftens middeltemperatur og afvigelser fra normalen fra seks vidt forskellige steder i landet.

Tabel 2: Vinterens frostdøgn. Middeltallet for vinterens kuldesum er beregnet til -38,4 mod midelvinterens -96.

Tabel 3: Grafisk oversigt over middeltal af kuldesummer for vintrene fra 1906-07 til dato.

Tabel 4: Forholdene ved observationssteder, hvorfra isforekomster er rapporteret.

Tabel 5: Sammenligning mellem forskellige vintre.

Tabel 6: Statsisbrydernes virksomhed i de sidste 39 år.

Tabel 7: Skematisk oversigt over is- og besejlingsforholdene på strækningen Skagen-Gedser henholdsvis gennem Storebælt og gennem Øresund, endvidere løbene til Fredericia, Kalundborg, og Stignæs samt Limfjorden og Esbjerg i perioden 1929/30 til 2004/05.

Tabel 8: Kurver over overfladevandets gennemsnits-temperatur i gennemsejlingsfarvandene, normaltemperaturen samt lufttemperaturen.

## *ICE AND NAVIGATIONAL CONDITIONS IN DANISH WATERS DURING THE WINTER 2004 -2005*

Information for this report about ice and navigational conditions in Danish waters during the recent winter has been obtained and prepared in the same manner as in previous years.

### **General Survey**

According to information from the Danish Meteorological Institute the mean air temperatures and amount of days with frost for the whole country in the winter months of 2004-2005 (given in centigrade) were as follows:

#### *November*

+5°5 normal +4°7 (div. +0°8)

Days with frost 7,3 normal 7,3 (dev. 0)

#### *December*

+4°1 normal +1°6 (div. +2°5)

Days with frost 8,6 normal 15,0 (dev. -6,4)

#### *January*

-3°7 normal +0°0 (div. -3°7)

Days with frost 9,9 normal 19,0 (div. -9,1)

#### *February*

+0°3 normal +0°0 (div. +0°3)

Days with frost 21,5 normal 19,0 (div. -2,5)

#### *March*

+1°5 normal +2°1 (div. +0°6)

Days with frost 18,9 normal 15,0 (div. -3,9)

The sea surface temperature stayed generally above the normal level (mean temperature in a 35 year period). From the end of February to mid March the temperature was below the normal, and stayed in that period at +1°.

The first report of ice was received on January 24<sup>th</sup> 2005 from Ringkøbind Port, the last reports was received March 23<sup>rd</sup> 2005 and from the march 24<sup>th</sup> there were no ice in the Danish waters.

Altogether approximately 875 reports of ice were received in the season 2004-2005.

The cold weather from end February to mid March was not enough to caused ice formations.

The ice formations in the Danish waters in the winter 2004-2005 did not cause any problems to navigation.

The first ice report from Sweden was received on November 18<sup>th</sup> 2004, and the last ice reports were received May 20<sup>th</sup> 2005.

The table on the following pages contains detailed information about temperatures and ice conditions at selected ice observation stations as follows:

Table 1: Mean air temperature and the variations from the normal 6 widely separated places in the country.

Table 2: Days with frost during the winter. The mean amount of cold has been calculated at -38,4 against the mean amount of a normal winter of about -96.

Table 3: Graphic summary of mean amounts of cold for the winters 1906-07 to date.

Table 4: Conditions at stations from where reports of ice formations have been submitted.

Table 5: A comparison between winters.

Table 6: The activity of the government icebreakers over a period of 39 years.

Table 7: Information in tabular form of ice and navigational conditions from the Skaw to Gedser through the Great Belt and The Sound respectively, and in the approaches to Fredericia, Kalundborg, Stignæs and Esbjerg, and through Limfjorden in the period from 1929/30 to 2004/05.

Table 8: Graphic curves showing the average temperature of the surface water in main through passages, the normal sea temperature and air temperature.

Tab. 1.

**Luftens middeltemperatur samt afvigelserne fra normalen i vinteren 2004-05**  
*Mean temperature of the air and variations from normal during the winter 2004-05*

| Måned<br><i>Month</i> | Middeltemp./afv.<br><i>Mean temp./var.</i> | Skagen<br>Fyr | Rømø/<br>Juvre** | Gniben      | Gedser<br>Odde* | Københavns<br>Lufthavn | Hammer Odde<br>Fyr |
|-----------------------|--|---------------|------------------|-------------|-----------------|------------------------|--------------------|
| November . . . . .    | Middeltemperatur ..<br>Afvigelse .....     | 6,4<br>0,8    | 6,5<br>1,6       | 6,7<br>1,2  | 6,2<br>0,4      | 4,6<br>-0,5            | 6,1<br>0,2         |
| December . . . . .    | Middeltemperatur ..<br>Afvigelse .....     | 5,1<br>2,5    | 4,7<br>2,1       | 4,7<br>2,2  | 4,4<br>1,8      | 3,2<br>1,4             | 4,2<br>1,5         |
| Januar . . . . .      | Middeltemperatur ..<br>Afvigelse .....     | 4,5<br>3,9    | 4,4<br>3,2       | 4,0<br>3,3  | 3,3<br>2,5      | 2,7<br>2,6             | 3,5<br>2,7         |
| Februar . . . . .     | Middeltemperatur ..<br>Afvigelse .....     | 1,0<br>0,9    | 0,7<br>-0,1      | 0,8<br>0,3  | 0,8<br>0,3      | 0,0<br>0,1             | 0,6<br>0,2         |
| Marts . . . . .       | Middeltemperatur ..<br>Afvigelse .....     | 1,4<br>-0,6   | 2,3<br>-0,6      | 4,1<br>-0,3 | 1,3<br>-1,0     | 1,3<br>-0,7            | 0,9<br>-0,9        |
| April . . . . .       | Middeltemperatur ..<br>Afvigelse .....     | 6,8<br>1,6    | 7,9<br>1,4       | 7,4<br>1,9  | 6,9<br>1,2      | 7,5<br>1,8             | 6,1<br>1,5         |

Kilde: Danmarks Meteorologiske Institut

\*) Normaler fra Kegsnæs Fyr.

\*\*) Normaler beregnet på perioden 1983-97

Tab. 2.

**Kuldedøgn i vinteren 2004-05**  
*Days with frost during the winter 2004-05*

| Skagen Fyr                        |   |              | Gniben                            |   |            | Rømø/Juvre                        |   |              | Gedser Odde                       |   |              | Københavns Lufthavn               |    |              | Hammer Odde Fyr                        |   |              |
|-----------------------------------|---|--------------|-----------------------------------|---|------------|-----------------------------------|---|--------------|-----------------------------------|---|--------------|-----------------------------------|----|--------------|--|---|--------------|
| a                                 | b | c            | a                                 | b | c          | a                                 | b | c            | a                                 | b | c            | a                                 | b  | c            | a                                      | b | c            |
| 25/01                             | 1 | -1,1         | 25/01                             | 1 | -0,4       | 26/12-27/12                       | 2 | -0,7         | 23/01-28/01                       | 6 | -5,8         | 19/11                             | 1  | -0,2         | 226/01                                 | 1 | -0,6         |
| 14/02-16/02                       | 3 | -3,6         | 06/02-08/02                       | 3 | -1,8       | 24/01-26/01                       | 3 | -2,1         | 06/02-08/02                       | 3 | -1,8         | 27/12                             | 1  | -2,0         | 28/01-29/01                            | 2 | -1,1         |
| 22/02-24/02                       | 3 | -7,2         | 15/02-17/02                       | 3 | -2,6       | 28/01                             | 1 | -0,3         | 16/02-17/02                       | 2 | -2,4         | 22/01-29/01                       | 8  | -13,0        | 05/02-08/02                            | 4 | -6,3         |
| 26/02-06/03                       | 9 | -20,8        | 22/02                             | 1 | -1,0       | 06/02-08/02                       | 3 | -6,6         | 26/02-06/03                       | 9 | -22,3        | 06/02-08/02                       | 3  | -2,9         | 15/02-17/02                            | 3 | -1,4         |
| 12/03-13/03                       | 2 | -3,8         | 25/02-27/02                       | 3 | -3,9       | 15/02-16/02                       | 2 | -3,4         | 09/03                             | 1 | -1,3         | 13/02-17/02                       | 5  | -7,4         | 22/02                                  | 1 | -0,2         |
| 19/03                             | 1 | -2,7         | 01/02-06/03                       | 6 | -12,1      | 22/02-23/02                       | 2 | -3,0         | 12/03                             | 1 | -0,5         | 22/02                             | 1  | -1,0         | 26/02-06/03                            | 9 | -17,4        |
|                                   |   |              | 12/03                             | 1 | -1,5       | 25/02-27/02                       | 3 | -6,3         | 19/03-20/03                       | 2 | -1,4         | 25/02-06/03                       | 10 | -28,8        | 12/03-13/03                            | 2 | -12,6        |
|                                   |   |              | 19/03-20/03                       | 2 | -1,7       | 02/03-06/03                       | 5 | -14,7        | 06/03-07/03                       | 2 | -0,8         | 09/03                             | 1  | -2,1         |  |   |              |
|                                   |   |              |                                   |   |            | 12/03                             | 1 | -1,0         |                                   |   |              | 12/03-13/03                       | 2  | -2,3         |  |   |              |
|                                   |   |              |                                   |   |            |                                   |   |              |                                   |   |              | 19/03-20/03                       | 2  | -2,7         |  |   |              |
| Samlet kuldesum<br>Amount of cold |   | <b>-39,2</b> | Samlet kuldesum<br>Amount of cold |   | <b>-25</b> | Samlet kuldesum<br>Amount of cold |   | <b>-38,1</b> | Samlet kuldesum<br>Amount of cold |   | <b>-35,5</b> | Samlet kuldesum<br>Amount of cold |    | <b>-62,8</b> | Samlet kuldesum<br>Amount of cold      |   | <b>-29,6</b> |
|                                   |   |              |                                   |   |            |                                   |   |              |                                   |   |              |                                   |    |              | <b>Middeltal</b><br><i>Mean amount</i> |   |              |
|                                   |   |              |                                   |   |            |                                   |   |              |                                   |   |              |                                   |    |              | <b>-38,4</b>                           |   |              |

NB: a = frostperioder = perioder med daglig middeltemperatur under 0°

b = antal dage i perioden

c = antal dage i perioden

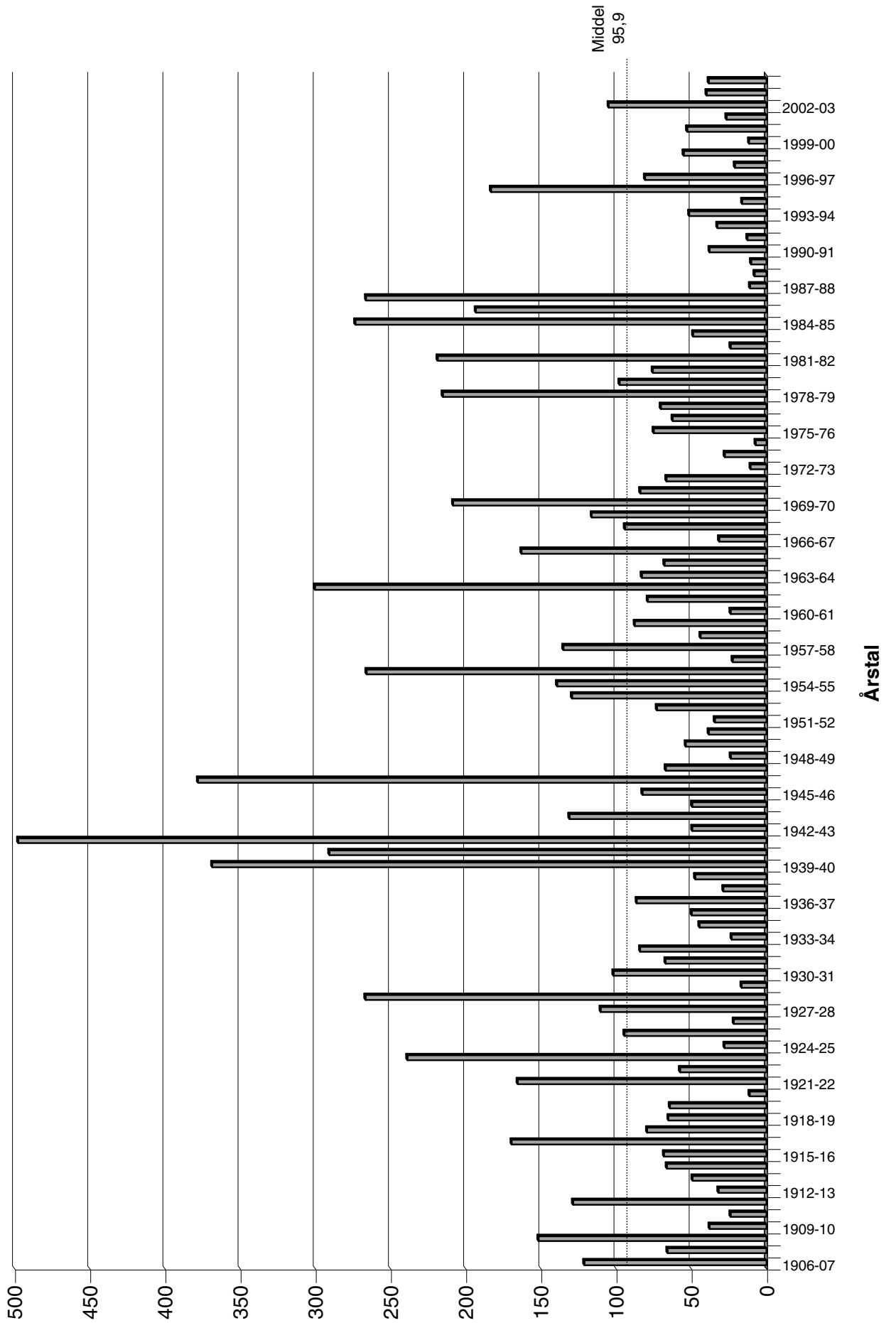
kuldesum = summen af frostperiodens daglige middeltemperatur

amount of cold = sum of daily mean temperatures in the period with frost

Kilde: Danmarks Meteorologiske Institut

Tab. 3.

**Grafisk oversigt over middeltal af kuldesummer for vintrene 1906-07 til 2004-05**  
*Graphic summary of mean amounts of cold for the winters 1906-07 to 2004-05*



Tab. 3.

**Forholdene ved observationsstederne i vinteren 2004-2005 i henhold til Østersøskoden**  
*Conditions at observation posts during the winter 2004-2005, according to the Baltic Sea Ice Code*

| Sted<br>Place               | Antal dage – Number of days |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    | Ismelding            |   |   |   |   |   |    |   |       |                        |        |       |
|-----------------------------|-----------------------------|----|---|----|----|---|---|---|----|-------------------|----|----|---|---|---|---|---|---|-------------------|---|---|----|----|----------------------|---|---|---|---|---|----|---|-------|------------------------|--------|-------|
|                             | A: Koncentration            |    |   |    |    |   |   |   |    | S: Istykkelse/Art |    |    |   |   |   |   |   |   | T: Isens udseende |   |   |    |    | K: Besejlingsforhold |   |   |   |   |   |    |   |       | Skibs-<br>fart<br>pav. |        |       |
|                             | 0                           | 1  | 2 | 3  | 4  | 5 | 6 | 7 | 8  | 9                 | 0  | 1  | 2 | 3 | 4 | 5 | 6 | 7 | 8                 | 9 | X | 0  | 1  | 2                    | 3 | 4 | 5 | 6 | 7 | 8  | 9 | X     | første                 | sidste |       |
| Jyllands Vestkyst           |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Esbjerg Havn                |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Esbjerg, farv. til Grådyb   |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Grådyb                      |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Ringkøbing Havn             |                             | 4  | 7 | 11 | 13 |   |   |   | 10 |                   | 31 | 10 |   |   |   |   |   |   |                   |   |   | 4  | 35 | 10                   |   |   |   |   |   |    |   | 10    | 24/01                  | 14/03  |       |
| Ringkøbing Fjord            | 2                           | 18 | 7 | 6  | 2  | 2 | 2 | 2 | 31 | 6                 |    |    |   |   |   |   |   |   |                   |   |   | 2  | 29 | 1                    | 7 |   |   |   |   |    | 8 | 24/01 | 14/03                  |        |       |
| Hirshals Fyr                |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Hirshals Havn               |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Limfjorden                  |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Thyborøn Kanal              |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Thyborøn Havn               |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Leemvig Havn og Vig         |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Nissum Bredning             |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Selhuudeholmøb              |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Sruer Havn                  | 1                           |    |   |    |    |   |   |   |    | 1                 |    |    |   |   |   |   |   |   |                   |   |   |    | 1  |                      |   |   |   |   |   |    |   |       | 1                      | 07/03  | 07/03 |
| Venø Sund                   |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Nykøbing Mors Havn          | 1                           | 3  |   | 3  |    |   |   | 3 | 1  |                   | 7  | 4  |   |   |   |   |   |   |                   |   | 7 |    |    | 4                    |   |   |   |   |   |    |   | 4     | 04/03                  | 14/03  |       |
| Sallingsund                 | 4                           | 4  | 2 |    |    |   |   |   |    |                   | 11 |    |   |   |   |   |   |   |                   |   | 8 | 3  |    |                      |   |   |   |   |   |    |   |       |                        | 04/03  | 14/03 |
| Oddesund                    |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Feggesund                   | 1                           | 1  | 1 | 4  | 2  |   |   |   |    |                   | 8  |    |   |   |   |   |   |   |                   |   |   | 1  | 7  | 1                    |   |   |   |   |   |    |   |       | 03/03                  | 11/03  |       |
| Thisted Havn                |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Thisted Bredning            |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Skive Havn                  | 1                           | 1  | 1 | 7  | 2  | 4 |   |   |    |                   | 8  | 7  |   |   |   |   |   |   |                   |   |   | 1  | 5  | 1                    |   | 9 |   |   |   | 1  | 1 | 11    | 4                      | 24/02  | 12/03 |
| Skive Fjord til Lundløhøge  | 1                           | 4  | 3 | 2  | 4  |   |   |   |    |                   | 6  | 7  |   |   |   |   |   |   |                   |   |   | 1  | 3  | 1                    |   | 9 |   |   |   | 1  | 1 | 9     | 4                      | 27/02  | 12/03 |
| Livø Bredning               |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Løgstør Bredning            |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |
| Løgstør, farvandet mod vest | 1                           | 2  | 2 | 1  |    |   |   |   |    |                   | 5  | 2  |   |   |   |   |   |   |                   |   |   | 2  | 4  | 1                    |   |   |   |   |   | 1  | 5 | 1     |                        | 03/03  | 09/03 |
| Løgstør, farvandet mod øst  | 1                           | 3  | 3 |    |    |   |   |   |    |                   | 3  | 4  |   |   |   |   |   |   |                   |   |   | 2  | 1  | 3                    |   |   |   |   |   | 1  | 3 | 3     |                        | 02/03  | 09/03 |
| Aggersund                   | 5                           | 25 | 2 | 3  | 1  | 1 | 5 |   |    |                   | 29 | 4  | 5 |   |   |   |   |   |                   |   | 3 | 29 | 4  | 2                    | 1 | 5 |   |   | 3 | 32 | 4 | 4     |                        | 03/02  | 16/03 |
| Draget                      | 1                           | 2  | 1 | 3  |    |   |   |   |    |                   | 1  | 4  | 2 |   |   |   |   |   |                   |   |   | 2  | 1  | 1                    | 3 |   |   |   |   | 1  | 3 | 3     |                        | 03/03  | 09/03 |
| Ålborg, fjorden mod vest    | 2                           | 3  | 7 | 2  | 1  |   |   |   |    |                   | 4  | 10 | 1 |   |   |   |   |   |                   |   |   | 4  | 8  | 2                    | 1 |   |   |   |   | 5  | 9 | 1     |                        | 03/03  | 17/03 |
| Ålborg, farvandet udfor     | 6                           | 2  | 5 | 2  |    |   |   |   |    |                   | 8  | 7  |   |   |   |   |   |   |                   |   |   | 8  | 5  | 2                    |   |   |   |   |   | 8  | 7 |       |                        | 03/03  | 17/03 |
| Ålborg – Hals               | 2                           |    |   | 7  |    |   |   |   |    |                   | 2  | 7  |   |   |   |   |   |   |                   |   |   | 3  | 4  | 2                    |   |   |   |   |   | 2  | 7 |       |                        | 03/03  | 12/03 |
| Hals Barre, indløbet        |                             |    |   |    |    |   |   |   |    |                   |    |    |   |   |   |   |   |   |                   |   |   |    |    |                      |   |   |   |   |   |    |   |       |                        |        |       |

















### Sammenligning mellem de forskellige vintre

**Tab. 5.**

*Comparison between the various winters*

| Gennemsnitlige antal dage med is for:<br><i>Average number of days with ice in:</i>          | 1906<br>-07 | 1907<br>-08 | 1908<br>-09 | 1909<br>-10 | 1910<br>-11 | 1911<br>-12 | 1912<br>-13 | 1913<br>-14 | 1914<br>-15 | 1915<br>-16 | 1916<br>-17 | 1917<br>-18 | 1918<br>-19 | 1919<br>-20 | 1920<br>-21 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Åbne farvande<br><i>Open waters</i>  | 6.6         | 0.2         | 18.6        | 0.1         | 0.0         | 17.7        | 0.3         | 0.1         | 0.0         | 0.1         | 21.4        | 1.2         | 0.7         | 0.0         | 0.0         |
| Havne ved åbent farvand<br><i>Harbours at open waters</i>                                    | 17.4        | 2.9         | 28.4        | 2.2         | 0.5         | 20.4        | 3.2         | 2.1         | 0.5         | 2.7         | 33.5        | 6.1         | 4.4         | 2.7         | 0.0         |
| Tildels lukkede farvande<br><i>Partly closed waters</i>                                      | 24.2        | 6.7         | 41.0        | 2.1         | 0.2         | 35.1        | 6.2         | 4.6         | 2.7         | 3.7         | 50.7        | 9.1         | 8.5         | 6.9         | 0.1         |
| Havne ved lukkede farvande<br><i>Harbours in closed waters</i>                               | 52.8        | 25.5        | 69.2        | 14.2        | 9.6         | 49.1        | 18.4        | 15.0        | 16.9        | 18.1        | 71.6        | 34.3        | 28.6        | 24.8        | 1.5         |
| Lukkede farvande<br><i>Closed waters</i>   | 57.9        | 32.2        | 66.3        | 20.7        | 5.6         | 52.9        | 19.1        | 16.6        | 19.3        | 22.1        | 78.5        | 48.1        | 31.1        | 41.0        | 4.1         |
| Alle stationer<br><i>All stations</i>  | 30.3        | 10.1        | 38.8        | 5.7         | 2.4         | 31.5        | 7.4         | 6.0         | 6.1         | 7.3         | 44.9        | 15.3        | 11.6        | 11.9        | 0.9         |
| Middeltal af kuldesum for stat. i tab.2<br><i>Mean amount of cold for stations in tab. 2</i> | 121.1       | 65.8        | 151.6       | 37.9        | 23.9        | 128.6       | 31.9        | 49.2        | 66.3        | 68.2        | 169.5       | 79.4        | 65.2        | 64.3        | 11.3        |

| 1921<br>-22 | 1922<br>-23 | 1923<br>-24 | 1924<br>-25 | 1925<br>-26 | 1926<br>-27 | 1927<br>-28 | 1928<br>-29 | 1929<br>-30 | 1930<br>-31 | 1931<br>-32 | 1932<br>-33 | 1933<br>-34 | 1934<br>-35 | 1935<br>-36 | 1936<br>-37 | 1937<br>-38 | 1938<br>-39 | 1939<br>-40 | 1940<br>-41 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 30.6        | 2.5         | 40.3        | 0.0         | 0.4         | 0.0         | 7.0         | 48.4        | 0.2         | 1.0         | 0.3         | 1.3         | 0.0         | 0.0         | 0.5         | 8.5         | 0.0         | 0.3         | 56.5        | 47.1        |
| 34.4        | 10.1        | 51.2        | 0.2         | 5.8         | 0.0         | 17.8        | 49.3        | 0.0         | 4.1         | 1.3         | 5.1         | 0.3         | 0.0         | 2.7         | 17.7        | 0.0         | 1.3         | 61.6        | 58.2        |
| 37.5        | 8.2         | 71.3        | 0.0         | 10.7        | 0.3         | 19.9        | 61.2        | 0.7         | 8.3         | 2.1         | 7.6         | 0.7         | 0.8         | 3.0         | 21.2        | 0.7         | 3.2         | 74.7        | 60.5        |
| 52.7        | 20.5        | 97.6        | 1.3         | 36.9        | 6.3         | 47.6        | 79.5        | 7.0         | 27.1        | 12.7        | 21.5        | 6.5         | 7.9         | 15.5        | 33.4        | 7.0         | 14.2        | 84.1        | 74.3        |
| 52.9        | 23.8        | 111.3       | 2.0         | 53.2        | 4.3         | 57.5        | 87.1        | 8.5         | 37.1        | 15.2        | 26.8        | 9.5         | 11.0        | 22.6        | 43.9        | 9.4         | 20.1        | 97.3        | 84.7        |
| 39.4        | 11.0        | 68.0        | 0.5         | 16.9        | 1.7         | 25.4        | 62.3        | 2.9         | 12.9        | 6.3         | 12.2        | 3.4         | 4.0         | 9.6         | 26.4        | 3.8         | 8.6         | 78.5        | 67.3        |
| 165.4       | 57.5        | 238.8       | 27.9        | 94.4        | 21.8        | 110.3       | 266.7       | 16.6        | 101.8       | 67.1        | 84.0        | 23.2        | 44.6        | 49.7        | 86.3        | 28.7        | 47.5        | 368.5       | 290.7       |

| 1941<br>-42 | 1942<br>-43 | 1943<br>-44 | 1944<br>-45 | 1945<br>-46 | 1946<br>-47 | 1947<br>-48 | 1948<br>-49 | 1949<br>-50 | 1950<br>-51 | 1951<br>-52 | 1952<br>-53 | 1953<br>-54 | 1954<br>-55 | 1955<br>-56 | 1956<br>-57 | 1957<br>-58 | 1958<br>-59 | 1959<br>-60 | 1960<br>-61 |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 71.1        | 0.0         | 0.0         | 1.0         | 0.3         | 65.0        | 0.6         | 0.0         | 0.2         | 0.0         | 0.1         | 1.9         | 13.6        | 9.0         | 29.6        | 0.1         | 5.5         | 0.2         | 1.8         | 0.0         |
| 72.5        | 3.3         | 0.0         | 2.0         | 2.2         | 70.0        | 0.8         | 0.0         | 2.9         | 1.3         | 0.5         | 4.3         | 25.1        | 13.4        | 29.8        | 0.2         | 9.5         | 0.3         | 5.0         | 1.4         |
| 82.4        | 2.1         | 0.0         | 3.4         | 1.4         | 78.0        | 2.8         | 0.0         | 2.8         | 1.9         | 0.6         | 4.6         | 32.0        | 18.6        | 37.7        | 0.2         | 7.2         | 1.3         | 7.7         | 1.3         |
| 85.7        | 11.9        | 1.3         | 16.7        | 15.3        | 85.6        | 15.1        | 0.5         | 11.7        | 11.0        | 4.7         | 16.3        | 45.5        | 42.3        | 48.0        | 2.2         | 28.8        | 9.2         | 24.1        | 7.4         |
| 93.6        | 14.6        | 1.5         | 20.7        | 17.8        | 97.3        | 20.4        | 1.5         | 15.2        | 16.3        | 6.1         | 21.5        | 52.0        | 51.8        | 56.8        | 3.5         | 44.9        | 12.5        | 36.2        | 11.3        |
| 83.6        | 7.1         | 0.7         | 9.8         | 8.2         | 82.0        | 9.1         | 0.5         | 7.2         | 7.0         | 2.7         | 10.7        | 35.7        | 30.2        | 42.7        | 1.4         | 21.1        | 5.6         | 17.2        | 4.9         |
| 497.5       | 49.4        | 131.1       | 49.5        | 82.5        | 378.0       | 67.0        | (23.8)      | 53.7        | 38.4        | 34.4        | 72.9        | 129.3       | 139.2       | 226.0       | 22.4        | 135.1       | 43.9        | 87.6        | 23.9        |





Tab. 6.

**Statsisbrydernes virksomhed**  
*Activity of the government icebreakers*

| År<br><i>Year</i> | Lillebjørn<br>bygget<br><i>built</i><br>1926 | Storebjørn<br>bygget<br><i>built</i><br>1931 | Elbjørn<br>bygget<br><i>built</i><br>1953 | Danbjørn<br>bygget<br><i>built</i><br>1965 | Isbjørn<br>bygget<br><i>built</i><br>1966 | I alt dage<br><i>No. of<br/>days</i> | Benyttelse af fremmed hjælp<br><i>Chartered-in vessel</i>           |
|-------------------|--|--|---|--|---|--------------------------------------|---|
| 1966-67           | —  | —  | —   | —  | —   | 0                                    | Goliath 1 dag   |
| 1967-68           | udgået                                       | —  | 13/1-27/1                                 | —  | —   | 15                                   | Goliath 38 og Ymer 43 dage  |
| 1968-69           |  | 1/3-9/3                                      | 20/2-11/3                                 | —  | —   | 29                                   | Goliath, Ymer og Frigga i alt 122 dage                              |
| 1969-70           |  | 31/1-17/3                                    | 26/1-24/3                                 | 17/2-21/3                                  | 9/2-10/3                                  | 167                                  | Goliath 115 dage og Ymer 4 dage                                     |
| 1970-71           |  | —  | —   | —  | —   | 0                                    |   |
| 1971-72           |  | —  | 2/2-17/2                                  | —  | —   | 16                                   | Goliath 21 dage   |
| 1972-73           |  | —  | —   | —  | —   | 0                                    |   |
| 1973-74           |  | —  | —   | —  | —   | 0                                    |   |
| 1974-75           |  | udgået                                       | —   | —  | —   | 0                                    |   |
| 1975-76           |  |  | —   | —  | —   | 0                                    |   |
| 1976-77           |  | Thorbjørn<br>bygget                          | —   | —  | —   | 0                                    |   |
| 1977-78           |  | <i>built</i><br>1980                         | —   | —  | —   | 0                                    |   |
| 1978-79           |  |  | 20/2-3/4                                  | 26/1-27/3                                  | 4/1-28/3                                  | 188                                  | Goliath 40 dage   |
| 1979-80           |  |  | —   | —  | —   | 0                                    | Goliath 18 dage   |
| 1980-81           |  | 2/3-9/3                                      | —   | —  | —   | 0                                    |   |
| 1981-82           |  | Ångerm.El<br>28/12-8/3                       | 22/1-18/2                                 | 9/1-7/2                                    | 19/1-10/2                                 | 152                                  | Goliath 49 dage   |
| 1982-83           |  | —  | —   | —  | —   | 0                                    |   |
| 1983-84           |  | —  | —   | —  | —   | 0                                    | Goliath 8 dage  |
| 1984-85           |  | 9/1-31/3                                     | 13/1-15/3                                 | 21/1-6/3                                   | 15/1-21/1                                 |                                      |   |
| 1985-86           |  | 15/2-13/3                                    | 19/2-18/3                                 | —  | 14/2-23/3                                 | 231                                  | Goliath 58, Svitzer 3 og andre 6 dage                               |
| 1986-87           |  | 12/1-29/3                                    | 15/1-16/2<br>10/3-2/4                     | 13/1-16/2                                  | 21/2-20/3                                 | 83                                   | Goliath 49, Svitzer 3 og andre 3 dage                               |
| 1987-88           |  | —  | —   | —  | 13/1-26/3                                 | 237                                  | Goliath 47, Svitzer 7 og andre 16 dage                              |
| 1988-89           |  | —  | —   | —  | —   | 0                                    | Farvandsvæsenet 5 dage  |
| 1989-90           |  | —  | —   | —  | —   | 0                                    |   |
| 1990-91           |  | —  | —   | —  | —   | 0                                    | Goliath 1 dag   |
| 1991-92           |  | —  | —   | —  | —   | 0                                    |   |
| 1992-93           |  | —  | —   | —  | —   | 0                                    |   |
| 1993-94           |  | —  | —   | —  | —   | 0                                    | Goliath 7 dage  |
| 1994-95           |  | —  | —   | —  | —   | 0                                    |   |
| 1995-96           |  | 31/1-27/3                                    | 9/2-12/2                                  | 9/2-1/3                                    | 6/2-22/3                                  | 129                                  | Goliath 93, Rauni som erstatning for<br>Elbjørn 16 og andre 38 dage |
| 1996-97           |  | —  | —   | —  | —   | —                                    | Goliath 10 dage; andre 6 dage                                       |
| 1997-98           |  | —  | —   | —  | —   | 0                                    |   |
| 1998-99           |  | —  | —   | —  | —   | 0                                    |   |
| 1999-00           |  | —  | —   | —  | —   | 0                                    |   |
| 2000-01           |  | —  | —   | —  | —   | 0                                    | Svitzer, Goliath 1 dag  |
| 2001-02           |  | —  | —   | —  | —   | 0                                    |   |
| 2002-03           |  | —  | —   | —  | —   | 15                                   | Stevens Charter & Towage A/S  |
| 2003-04           |  | —  | udgået                                    | —  | —   | 0                                    |   |
| 2004-05           |  | —  | —   | —  | —   | —                                    |   |

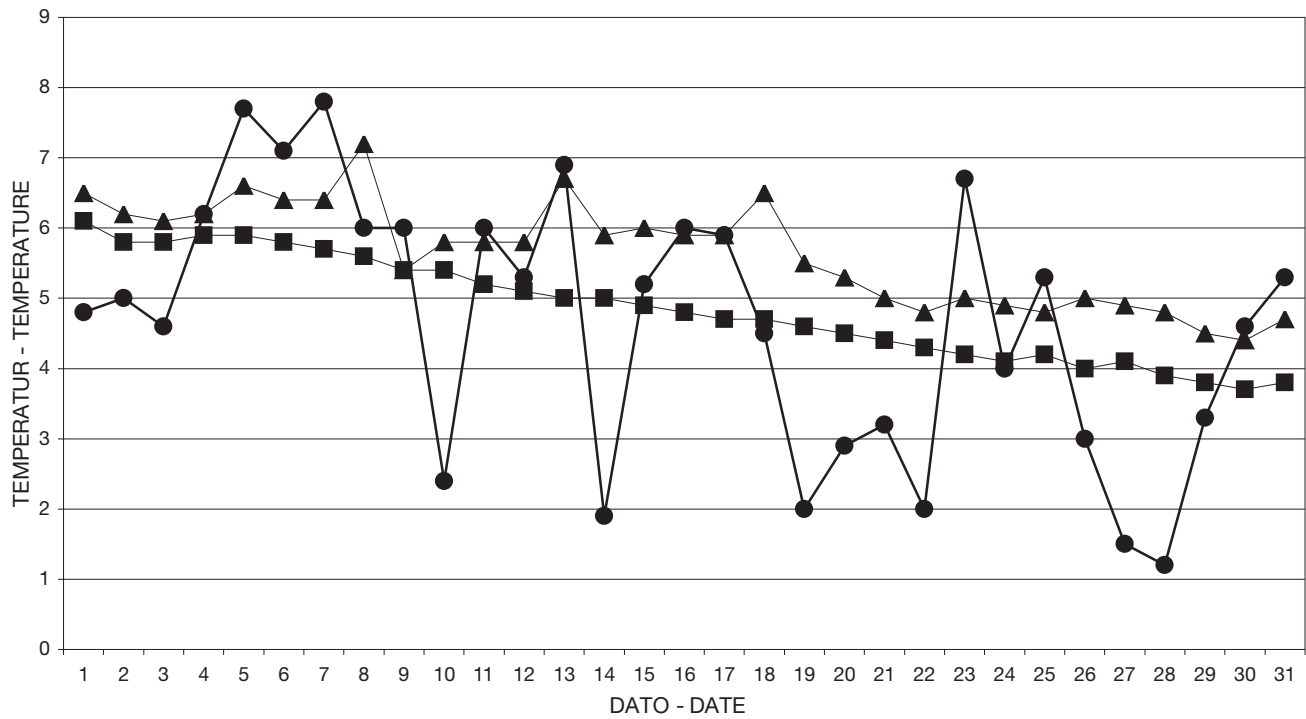
Tab. 7.

**Is- og besejlingsforholdene i hovedfarvandene i vintrene 1929/30 til 2004/2005**  
*Ice and navigational conditions in the main waters during the winters 1929/30 to 2004-2005*

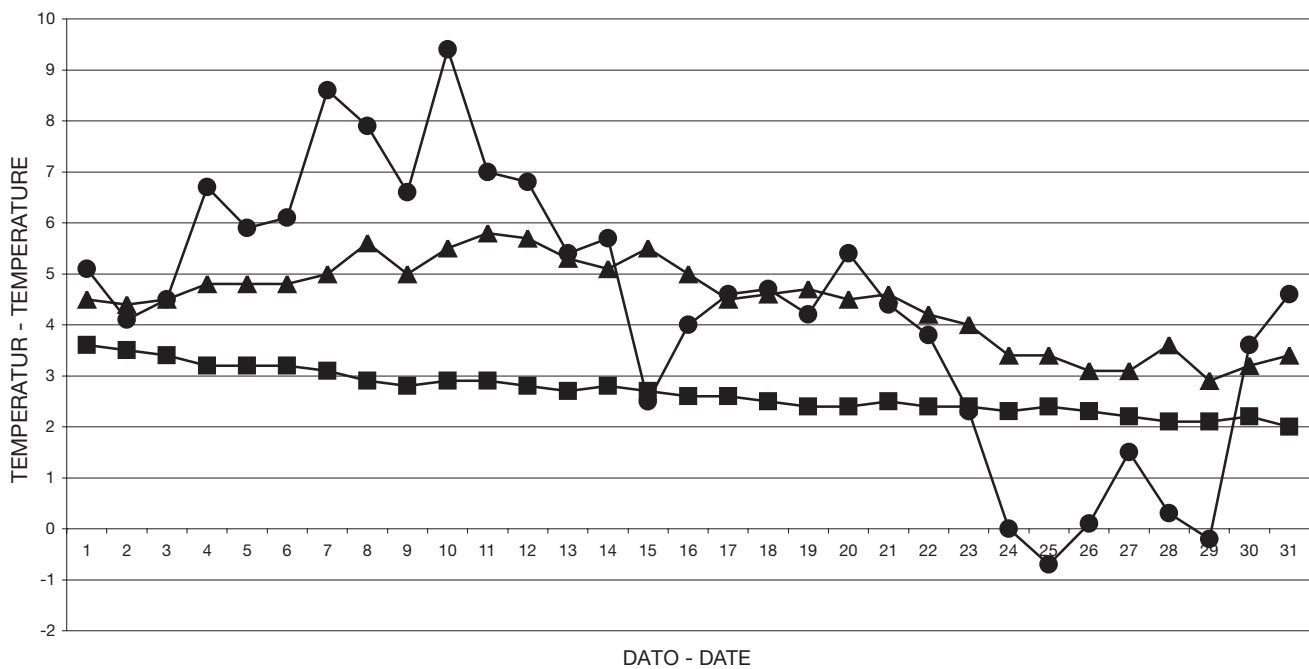
|   | Antal vintre observeret<br>No. of winters observed | Antal af vintre med is<br>No. of winters with ice | Forholdene under vintre med is<br>Conditions during icewinters                               |  |  | Besejlingsforhold<br>Navigational conditions  |   |   |                                 |
|---|--|---|--|--|--|---|---|---|---------------------------------|
|   |  |   | Tidligste dato for<br>tilisningens begyndelse<br>Earliest date of beginning ice<br>formation | Seneste dato for<br>isperiodens slutning<br>Latest date of end of ice period | Højeste antal dage med is<br>Max. No. of days with ice | Højeste antal dage<br>skibsfarten påvirket<br>Max. No. of days<br>navigation affected | Højeste antal dage isbry-<br>derhjælp nødvendig<br>Max. No. of days icebreaker<br>assistance required | Sejlads indstillet<br>Navigation closed |                                 |
|   |  |   |  |  |  |   |   | Antal vintre<br>No. of winters          | I alt dage<br>Total No. of days |
| Fra Skagen til Gedser gennem Øresund eller Storebælt, endvidere løbene til Fredericia, Kalundborg og Stigsnæs samt Limfjorden og Esbjerg.<br><br><i>From the Skaw to Gedser through The Sound or Great belt, and approaches to Fredericia, Kalundborg and Stigsnæs, furthermore the Limfjorden and Esbjerg.</i> |  |   |  |  |  |   |   |   |                                 |
| Skagen Fyr, farvandet mod S . . . . .   | 76   | 25  | 3-1  | 30-3   | 62   | 57  | 13  | 3                                       | 69                              |
| Læsø, Østerby, farvandet mod Ø . . . . .  | 76   | 24  | 29-12  | 4-4  | 72   | 68  | 20  | 4                                       | 88                              |
| Anholt Fyr, farvandet mod Ø . . . . .   | 72   | 23  | 4-1  | 6-4  | 72   | 67  | 31  | 2                                       | 12                              |
| Fornæs Fyr, farvandet udfor . . . . .   | 76   | 21  | 3-1  | 6-4  | 63   | 54  | 4   | 5                                       | 104                             |
| Sejrø Fyr, farvandet mod V og SV . . . . .  | 74   | 17  | 9-1  | 9-4  | 80   | 65  | 27  | 5                                       | 81                              |
| Ballen, farvandet udfor . . . . .   | 64   | 15  | 4-1  | 4-4  | 85   | 76  | 19  | 6                                       | 120                             |
| Røsnæs Fyr, farvandet mod V . . . . .   | 66   | 19  | 8-1  | 13-4   | 81   | 66  | 21  | 4                                       | 73                              |
| Romsø Fyr, farvandet mod Ø . . . . .  | 71   | 17  | 8-1  | 8-4  | 79   | 69  | 18  | 4                                       | 106                             |
| Sprogø, Østerrenden . . . . .   | 76   | 29  | 24-12  | 21-4   | 92   | 77  | 13  | 2                                       | 69                              |
| Sprogø, Vesterrenden . . . . .  | 76   | 23  | 24-12  | 21-4   | 87   | 75  | 13  | 2                                       | 82                              |
| Omø Fyr, farvandet mod V . . . . .  | 76   | 25  | 1-1  | 17-4   | 89   | 80  | 15  | 4                                       | 158                             |
| Spodsbjerg, farvandet udfor . . . . .   | 75   | 23  | 4-1  | 22-4   | 93   | 83  | 13  | 2                                       | 84                              |
| Albuen, farvandet mod V . . . . .   | 76   | 34  | 23-12  | 20-4   | 98   | 77  | 20  | 3                                       | 72                              |
| Keldsnor Fyr, Langelandsbælt . . . . .  | 76   | 20  | 4-1  | 22-4   | 93   | 80  | 22  | 3                                       | 86                              |
| Keldsnor Fyr, farvandet mod SØ . . . . .  | 76   | 18  | 5-1  | 22-4   | 93   | 81  | 27  | 3                                       | 78                              |
| Gedser Fyr, farvandet V for revet . . . . .   | 74   | 32  | 22-12  | 4-5  | 104  | 91  | 15  | 2                                       | 44                              |
| Gedser Fyr, farvandet Ø for revet . . . . .   | 74   | 31  | 22-12  | 5-5  | 105  | 103   | 14  | 2                                       | 44                              |
| <i>Til Fredericia:</i>  |  |   |  |  |  |   |   |   |                                 |
| Vesborg Fyr, farvandet mod S . . . . .  | 74   | 17  | 6-1  | 6-4  | 75   | 63  | 14  | 2                                       | 25                              |
| Æbelø Fyr, farvandet . . . . .  | 76   | 16  | 2-1  | 10-4   | 79   | 77  | 26  | 4                                       | 202                             |
| Fredericia, Bæltet udfor . . . . .  | 75   | 18  | 2-1  | 8-4  | 68   | 54  | 10  | 4                                       | 98                              |
| <i>Til Kalundborg:</i>  |  |   |  |  |  |   |   |   |                                 |
| Kalundborg Yderfjord . . . . .  | 75   | 21  | 5-1  | 12-4   | 81   | 66  | 3   | 4                                       | 72                              |
| Kalundborg Inderfjord . . . . .   | 76   | 21  | 5-1  | 12-4   | 87   | 69  | 20  | 3                                       | 59                              |
| <i>Til Stigsnæs:</i>  |  |   |  |  |  |   |   |   |                                 |
| Agersø Sund . . . . .   | 69   | 39  | 16-12  | 17-4   | 95   | 83  | 32  | 5                                       | 220                             |
| <i>Øresund:</i>   |  |   |  |  |  |   |   |   |                                 |
| Nakkehoved Fyr, farvandet udfor . . . . .   | 75   | 25  | 4-1  | 29-4   | 76   | 60  | 38  | 1                                       | 2                               |
| Helsingør, farvandet udfor . . . . .  | 75   | 33  | 4-1  | 3-5  | 94   | 84  | 15  | 3                                       | 43                              |
| København, Sundet udfor . . . . .   | 75   | 32  | 27-12  | 4-5  | 100  | 79  | 66  | 0                                       | 0                               |
| Kastrup, farvandet udfor . . . . .  | 64   | 32  | 24-12  | 4-5  | 112  | 110   | 30  | 4                                       | 145                             |
| Drogden Fyr, Drogden . . . . .  | 75   | 32  | 22-11  | 2-5  | 114  | 96  | 42  | 3                                       | 87                              |
| Drogden Fyr, Køge Bugt N-del . . . . .  | 76   | 36  | 27-12  | 5-5  | 105  | 100   | 14  | 2                                       | 60                              |
| Flinterenden . . . . .  | 76   | 31  | 2-1  | 4-5  | 97   | 89  | 20  | 2                                       | 39                              |
| Stevns Fyr, farvandet udfor . . . . .   | 76   | 29  | 2-1  | 5-5  | 105  | 103   | 54  | 2                                       | 46                              |
| <i>Limfjorden:</i>  |  |   |  |  |  |   |   |   |                                 |
| Hals Barre, farvandet . . . . .   | 74   | 34  | 27-12  | 6-4  | 68   | 57  | 31  | 7                                       | 161                             |
| Hals, indløb over barren . . . . .  | 76   | 42  | 1-12   | 13-4   | 90   | 84  | 33  | 6                                       | 178                             |
| Aalborg-Hals . . . . .  | 76   | 53  | 30-11  | 15-4   | 100  | 95  | 42  | 5                                       | 166                             |
| Aalborg, fjorden ud for byen . . . . .  | 76   | 57  | 30-11  | 15-4   | 84   | 82  | 17  | 5                                       | 153                             |
| Aalborg, fjorden mod V . . . . .  | 76   | 57  | 30-11  | 15-4   | 103  | 103   | 69  | 8                                       | 342                             |
| Draget . . . . .  | 42   | 29  | 28-11  | 8-4  | 106  | 104   | 56  | 4                                       | 63                              |
| Aggersund . . . . .   | 75   | 70  | 22-11  | 23-4   | 134  | 95  | 62  | 12                                      | 422                             |
| Løgstør, farvandet mod Ø . . . . .  | 76   | 60  | 17-11  | 12-4   | 109  | 103   | 73  | 8                                       | 329                             |
| Løgstør, farvandet mod V . . . . .  | 75   | 61  | 12-12  | 22-4   | 112  | 102   | 66  | 7                                       | 343                             |
| Løgstør Bredning . . . . .  | 73   | 49  | 11-12  | 20-4   | 118  | 117   | 109   | 6                                       | 332                             |
| Livø Bredning . . . . .   | 74   | 48  | 11-12  | 18-4   | 116  | 113   | 105   | 6                                       | 329                             |
| Skive, Havnen . . . . .   | 76   | 65  | 4-11   | 14-4   | 106  | 103   | 83  | 8                                       | 391                             |
| Skive, fjorden til Lundøhage . . . . .  | 76   | 65  | 4-11   | 15-4   | 139  | 125   | 97  | 8                                       | 393                             |
| Feggesund . . . . .   | 75   | 53  | 10-12  | 20-4   | 122  | 122   | 109   | 5                                       | 267                             |
| Thisted Bredning . . . . .  | 75   | 46  | 10-12  | 19-4   | 114  | 112   | 72  | 8                                       | 388                             |
| Thisted, havnen . . . . .   | 75   | 53  | 10-12  | 14-4   | 96   | 91  | 23  | 8                                       | 340                             |
| Nyløbing Mors, havnen . . . . .   | 76   | 61  | 22-11  | 14-4   | 101  | 90  | 74  | 6                                       | 219                             |
| Sallingsund . . . . .   | 75   | 51  | 11-12  | 16-4   | 100  | 89  | 68  | 7                                       | 281                             |
| Struer, Venø Sund . . . . .   | 76   | 45  | 1-12   | 13-4   | 102  | 102   | 88  | 7                                       | 260                             |
| Struer, havnen . . . . .  | 76   | 58  | 30-11  | 9-4  | 113  | 111   | 93  | 7                                       | 265                             |
| Oddesund . . . . .  | 75   | 43  | 11-12  | 15-4   | 107  | 102   | 60  | 4                                       | 156                             |
| Nissum Bredning . . . . .   | 76   | 33  | 22-12  | 12-4   | 96   | 86  | 43  | 4                                       | 262                             |
| Lemvig Havn og Lem Vig . . . . .  | 76   | 54  | 28-11  | 8-4  | 106  | 104   | 69  | 6                                       | 280                             |
| Thyborøn, Sælhundeholmløb . . . . .   | 52   | 20  | 22-12  | 29-3   | 72   | 30  | 22  | 0                                       | 0                               |
| Thyborøn, havnen . . . . .  | 52   | 18  | 17-12  | 26-3   | 70   | 17  | 0   | 0                                       | 0                               |
| Thyborøn, kanalen . . . . .   | 76   | 24  | 21-12  | 12-4   | 56   | 29  | 3   | 1                                       | 2                               |
| Esbjerg, havnen . . . . .   | 76   | 44  | 16-12  | 4-4  | 84   | 52  | 0   | 0                                       | 0                               |


**Overfladevandets gennemsnitstemperatur i gennemsejlingsfarvandene**  
*Average temperature of surface water in main through passages*

DECEMBER 2004



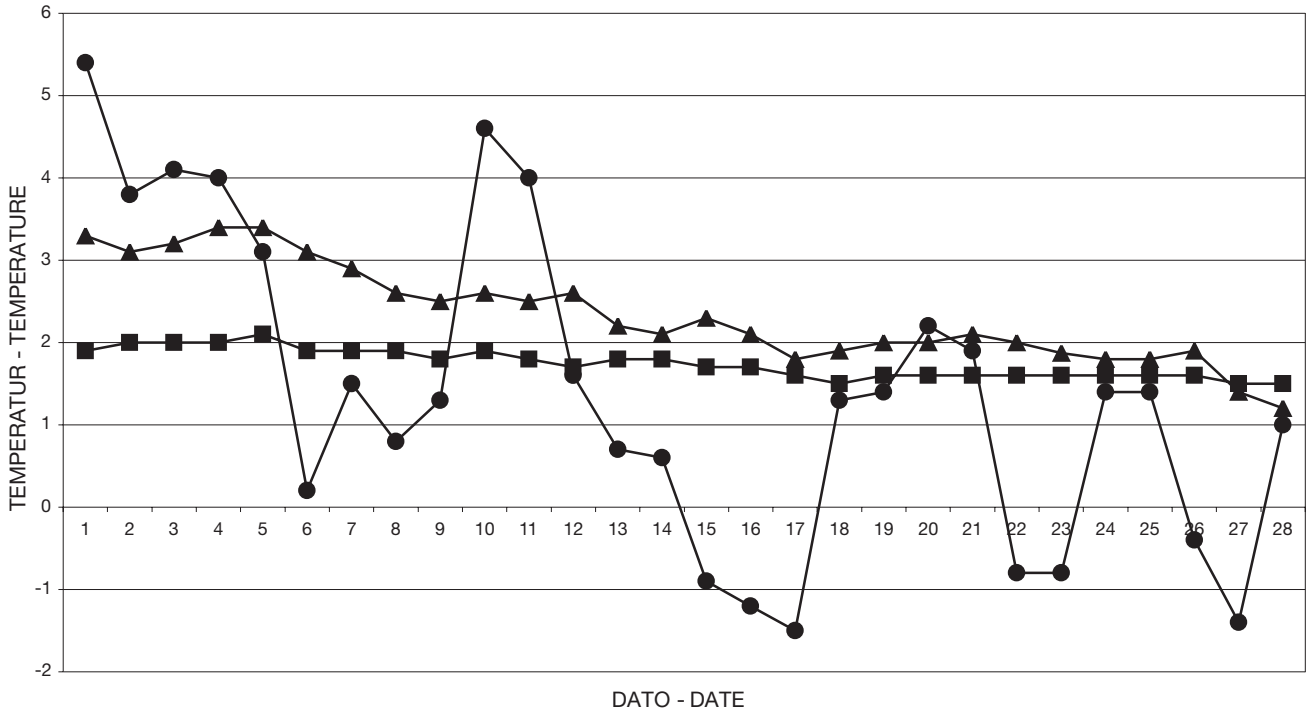
JANUAR 2005



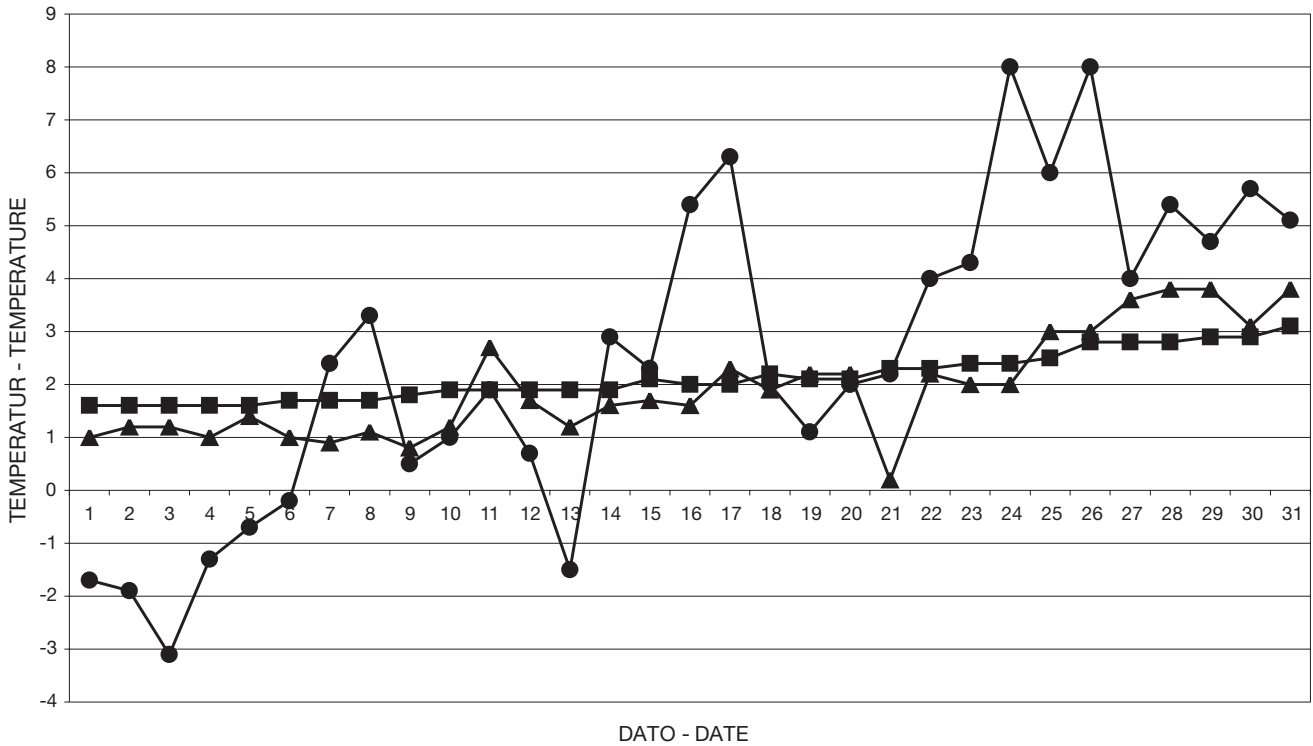

 Overfladevandets gennemsnitstemperatur (35 år)  
*Average temperature of sea surface water through 35 years*

Overfladevandets gennemsnitstemperatur i gennemsejlingsfarvandene  
Average temperature of surface water in main through passages

FEBRUAR 2005



MARTS 2005



▲ Aktuelle overflade gennemsnitstemperatur  
Average temperature of sea surface water measured  
at different places in Danish main waters

● Aktuelle gennemsnitstemperatur  
Mean air temperature measured at different  
places in Danish main waters

## ØSTERSØKODEN

(ASTK)

**Første tal i koden:**

|    |  |                                 |
|----|--|---------------------------------|
| A: | Koncentration af is  |                                 |
| 0  | Isfrit   |                                 |
| 1  | Åbent vand   | - mindre end 1/10               |
| 2  | Spredt drivis  | - 1/10 til mindre end 4/10      |
| 3  | Åben drivis  | - 4/10 til 6/10                 |
| 4  | Tæt drivis   | - 7/10 til 8/10                 |
| 5  | Meget tæt drivis   | - 9/10 til 9 <sup>+</sup> /10*) |
| 6  | Kompakt drivis, inklusive sammenfrosset drivis - koncentrationen 10/10         |                                 |
| 7  | Fastis med drivis udenfor  |                                 |
| 8  | Fastis   |                                 |
| 9  | Åben rende i meget tæt eller kompakt drivis eller rende langs den faste iskant |                                 |
| X  | Ukendt   |                                 |

\*) 9<sup>+</sup>/10 betyder 10/10 iskondensation med åbninger**Tredie tal i koden:**

|    |   |                             |
|----|---|-----------------------------|
| T: | Isens udseende, flagestørrelse eller topografi                        |                             |
| 0  | Tallerkenis, isskosse, isskive, kvadderis                             | - mindre end 20 m i tværmål |
| 1  | Isflager 20 til 100 m i tværmål                                       | - små isflager              |
| 2  | Isflager 100 til 500 m i tværmål                                      | - mellemstore isflager      |
| 3  | Isflager 500 til 2000 m i tværmål                                     | - store isflager            |
| 4  | Kæmpe isflager - mere end 2000 m i tværmål - eller jævn is            |                             |
| 5  | Overlappende is (pakis)   |                             |
| 6  | Kompakt snejsjap eller isklumper, eller kompakt kvadderis             |                             |
| 7  | Skruis eller skruisvolde  |                             |
| 8  | Smeltevandshuller (våger) eller mange smeltevandspytter på overfladen |                             |
| 9  | Rådden is   |                             |
| X  | Ukendt  |                             |

**Andet tal i koden:**

|    |   |   |
|----|---|---|
| S: | Istykkelse og art   |   |
| 0  | Is mindre end 5 cm tyk - nyis eller mørk tyndis                   |   |
| 1  | Is  | 5 til 10 cm tyk - lys tyndis eller isskorpe |
| 2  | Is 10 til 15 cm tyk   |   |
| 3  | Is 15 til 30 cm tyk   |   |
| 4  | Is 30 til 50 cm tyk   |   |
| 5  | Is 50 til 70 cm tyk   |   |
| 6  | Is 70 til 120 cm tyk  |   |
| 7  | Is overvejende tyndere end 15 cm med forekomst af tykkere is      |   |
| 8  | Is overvejende 15-30 cm tyk med forekomst af is tykkere end 30 cm |   |
| 9  | Is overvejende tykkere end 30 cm med forekomst af tyndere is      |   |
| X  | Ukendt  |   |

**Fjerde tal i koden :**

|    |  |  |
|----|--|--|
| K: | Besejlingsforhold  |  |
| 0  | Skibsfart uhindret   |  |
| 1  | Sejlads vanskelig eller farlig for træskibe uden isforhudning  |  |
| 2  | Sejlads vanskelig for stålskibe, der er svagt bygget eller har ringe maskinkraft. Sejlads for træskibe selv med isforhudning ikke tilrådelig |  |
| 3  | Sejlads uden isbryderhjælp er kun mulig for stærkt byggede skibe egnet for sejlads i is og med god maskinkraft                               |  |
| 4  | Sejlads foregår i rende uden isbryderhjælp   |  |
| 5  | Isbryderhjælp gives kun til skibe egnet for sejlads i is og af speciel størrelse   |  |
| 6  | Isbryderhjælp gives kun til skibe af særlig isklasse og speciel størrelse *)   |  |
| 7  | Isbryderhjælp gives kun til skibe efter særlig aftale  |  |
| 8  | Sejladsen indstillet indtil videre   |  |
| 9  | Sejladsen ophørt   |  |
| X  | Ukendt   |  |

\*) Særlig isklasse er i Østersøområdet defineret som den gældende svensk - finske isklasse

## THE BALTIC SEA ICE CODE

(ASTK)

**First digit:**

|    |   |  |
|----|---|--|
| A: | Amount and arrangement of sea ice   |  |
| 0  | Ice free  |  |
| 1  | Open water - concentration less than 1/10                                 |  |
| 2  | Very open drift ice - concentration 1/10 to less than 4/10                |  |
| 3  | Open drift ice - concentration 4/10 to 6/10                               |  |
| 4  | Close drift ice - concentration 7/10 to 8/10                              |  |
| 5  | Very close drift ice - concentration 9/10 to 9 <sup>+</sup> /10*)         |  |
| 6  | Compact drift ice, including consolidated drift ice - concentration 10/10 |  |
| 7  | Fast ice with drift ice outside   |  |
| 8  | Fast ice  |  |
| 9  | Lead in very close or compact drift ice or along the fast ice edge        |  |
| X  | Unable to report  |  |

\*) 9<sup>+</sup>/10 means 10/10 ice concentration with openings**Third digit:**

|    |  |  |
|----|--|--|
| T: | Topography or form of ice  |  |
| 0  | Pancake ice, ice cakes, brash ice - less than 20 m across        |  |
| 1  | Small ice floes - 20-100 m across                                |  |
| 2  | Medium ice floes - 100-500 m across                              |  |
| 3  | Big ice floes - 500-2000 m across                                |  |
| 4  | Vast or giant ice floes - more than 2000 m across - or level ice |  |
| 5  | Rafted ice   |  |
| 6  | Compacted slush or shuga, or compacted brash ice                 |  |
| 7  | Hummocked or ridged ice  |  |
| 8  | Thaw holes or many puddles on the ice                            |  |
| 9  | Rotten ice   |  |
| X  | No information or unable to report                               |  |

**Second digit:**

|    |   |  |
|----|---|--|
| S: | Stage of ice development  |  |
| 0  | New ice or dark nilas (less than 5 cm thick)                      |  |
| 1  | Light nilas (5-10 cm thick) or ice rind                           |  |
| 2  | 10-15 cm thick ice  |  |
| 3  | 15-30 cm thick ice  |  |
| 4  | 30-50 cm thick ice  |  |
| 5  | 50-70 cm thick ice  |  |
| 6  | 70-120 cm thick ice   |  |
| 7  | Ice predominantly thinner than 15 cm with some thicker ice        |  |
| 8  | Ice predominantly 15-30 cm thick with some ice thicker than 30 cm |  |
| 9  | Ice predominantly thicker than 30 cm with some thinner ice        |  |
| X  | No information or unable to report                                |  |

**Fourth digit:**

|    |  |  |
|----|--|--|
| K: | Navigation conditions in ice   |  |
| 0  | Navigation unobstructed  |  |
| 1  | Navigation difficult or dangerous for wooden vessels without ice sheathing   |  |
| 2  | Navigation difficult for unstrengthened or low-powered vessels built of iron or steel. Navigation for wooden vessels even with ice sheathing not advisable |  |
| 3  | Navigation without icebreaker assistance possible only for high-powered vessels of strong construction and suitable for navigation in ice                  |  |
| 4  | Navigation proceeds in lead or broken ice-channel without the assistance of an icebreaker  |  |
| 5  | Icebreaker assistance can only be given to vessels suitable for navigation in ice and of special size  |  |
| 6  | Icebreaker assistance can only be given to vessels of special ice class and special size*)   |  |
| 7  | Icebreaker assistance can only be given to vessels after special permission  |  |
| 8  | Navigation temporarily closed  |  |
| 9  | Navigation has ceased  |  |
| X  | Unknown  |  |

\*) Swedish-Finnish ice class



