

PUBLIKATIONER
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DET DANSKE METEOROLOGISKE INSTITUT
— AARBØGER —

NAUTISK-METEOROLOGISK AARBOG
NAUTICAL-METEOROLOGICAL ANNUAL

1924



KØBENHAVN
I KOMMISSION HOS G. E. C. GAD

DANMARKS TEKNISKE BIBLIOTEK

Polybib-367

300002093156

Isforholdene i de danske Farvande i Vinteren 1923—1924.

Bearbejdet af Statsmeteorolog Kaptajn SPEERSCHNEIDER.

Oplysningerne om Isforholdene i danske Farvande i den forløbne Vinter er indsamlede og bearbejdede paa lignende Maade som tidligere.

Tabel I viser Middeltemperaturen og Afgigelserne fra Normalen paa 6 Steder i Landet. Det fremgaar af Tabellen, at Afgigelserne var negative ved alle 6 Stationer i de 4 Maaneder.

December 1923. Middellufttrykket^{*)}) var ved Skagen 757.1 mm, og i København 758.3 mm, eller henholdsvis 1.3 mm og 1.5 mm lavere end normalt. Vindretningen var temmelig skiftende, dog forekom Vinde fra østlige Retninger lidt sjældnere end fra de øvrige Retninger. Middeltemperaturen blev i Forhold til Normalen de fleste Steder 2 til 3° for lav, enkelte Steder var Afgigelsen endog større. Antallet af Frostdage var gennemsnitlig 22, normalt 17. Paa Fyrskibene, hvor Temperaturen aflæses 6 Gange i Døgnet, var den laveste Temperatur $\div 9.7$ (Læsø Trindel).

Januar 1924. Middellufttrykket var ved Skagen 762.3 mm, i København 763.7 mm eller henholdsvis 1.9 mm og 1.6 mm højere end normalt. Vindretningen var temmelig skiftende, dog blæste de fleste Vinde fra Horisontens østlige Halvdelen. Middeltemperaturen var i Forhold til det normale overalt 1 til 3° for kold. Antal Frostdage var gennemsnitlig 26 mod det normale 22. Fyrskibene var inddragne den meste Tid.

Februar. Middellufttrykket var ved Skagen 758.2 mm og i København 759.5 mm, eller henholdsvis 1.9 mm og 1.6 mm lavere end normalt. Vindretningen var meget skiftende, ingen Retning kan siges at have været fremherskende. Middeltemperaturen var i Jylland 1 til 2° og paa Øerne 2 til 3° lavere end normalt. Antal af Frostdage var gennemsnitlig 25 mod det normale 20. Fyrskibene var inddragne den meste Tid.

^{*)} Reduceret til 0° C., Havets Overflade og Tyngden ved 45°.

The State of the Ice in Danish Waters during the Winter 1923—1924.

Prepared by Commander SPEERSCHNEIDER, Marine Superintendent.

The information concerning the state of the ice in the Danish waters during the past winter has been gathered and prepared in a similar manner as formerly.

Table I shows the mean temperature and the variations from the normal state at 6 different stations. It will appear from the table that the variations were negative at all the stations during the 4 months.

December 1923. The mean pressure of the air^{*)}) at the Scaw was 757.1 mm, and at Copenhagen 758.3 mm or respectively 1.3 mm and 1.5 mm below the normal. The direction of the wind was rather variable, easterly winds, however, were more scarce than winds from other directions. The mean temperature was almost everywhere 2° to 3° below the normal and at a few stations the variations were even greater. There were 22 days with frost while the normal is 17. At the light ships where the temperature is read 6 times in the 24 hours, the lowest temperature was $\div 9.7$ (Læsø Trindel).

January 1924. The mean pressure of the air at the Scaw was 762.3 mm, at Copenhagen 763.7 mm, or respectively 1.9 and 1.6 mm above the normal. The direction of the wind was rather variable but still winds from the eastern horizon were predominant. The mean temperature was everywhere 1 to 3° too cold. The number of days with frost was 26 while the normal is 22. The light ships were withdrawn most of the time.

February. The mean pressure of the air at the Scaw was 758.2 mm, at Copenhagen 759.5 mm or respectively 1.9 mm and 1.6 mm below the normal. The direction of the wind was very variable. In Jutland the mean temperature was 1 to 2° on the islands 2 to 3° below the normal. The number of frosty days was 25 while the normal is 20. The light vessels were withdrawn most of the time.

^{*)} Reduced to 0° C, the level of the sea and the gravity at Lat. 45°.

Marts. Middellufttrykket var ved Skagen 758.0 mm og i København 759.6 mm, eller henholdsvis 0.2 mm lavere og 0.5 mm højere end normalt. Vindretningen var overvejende omkring Vest og Sydvest. Middeltemperaturen var gennemgaaende 2 til 3° lavere end normalt. Antal Frostdage var gennemsnitlig 28, medens det normale er 18. De fleste Fyrskibe var inddragne.

Tabel 2 viser de Frostperioder og Frostdage, som indtraf i Vinterens Løb. I Slutningen af November faldt enkelte Frostdage, og den 20. December begyndte Vinterens 1ste Frostperiode, der varede ca. 22 Dage. 2den og 3die Periode varede ganske kort, men frembragte dog Isdannelse, og den 4de Periode varede 24 Dage. I Marts faldt der efter enkelte Frostdage.

Af Stationerne i Tabel 2 havde København den største Kuldesum (272.9), Fanø den mindste (198.5).

Tabel 3 viser Vandets Overfladetemperatur og Salt holdighed i Løbet af Vinteren. Middel er opført for hvert Tidøgn. Om Temperaturen se senere under Afsnittet »Oversigt over Isforholdene i de forskellige Farvande».

Saltholdigheden var i December, da Isdannelsen begyndte, særlig lav i det mellemste og sydligste Kattegat. I Marts var den lav i Læsø-Rende. Ved Kyststationerne var Saltholdigheden gennemgaaende hele Vinteren lavere end normalt, kun ved Christiansø var den hele Vinteren lidt højere end normalt.

I Tabel 4 gives en Oversigt over samtlige Stationer, hvorfra der føres Observationer over Is.

For at hjælpe til en ensartet Bedømmelse er Isforholdene udtrykt ved Bogstaver, som har følgende Betydning:

Isfrift	A	Svær Drivis	F
Løs Sjap- og Kvadderis B		Pakis..... I	
Sammenpakket Sjap- og Kvadderis..... E		Skrueis	H
Spredt Drivis..... C		Tynd Fastis	D
Driv Is	K	Svær Fastis	G

Til nærmere Forklaring paa disse Benævnelser tjener følgende Beskrivelse:

B. *Sjapis* kaldes den Masse, der dannes af Sne og Vand eller af smaa Ispartikler, saalænge den ikke er frosset sammen endnu. *Kvadder-Is* kaldes de smaa, i Reglen afrundede Isflader eller Isklumper, som kan optræde for sig, ført sammen af Vind og Sø, men som hyppig træffes i Forbindelse med *Sjapis*.

March. The mean pressure of the air at the Scaw was 758.0 mm at Copenhagen 759.6 mm or respectively 0.2 mm below and 0.5 above the normal. Westerly and southwesterly winds were predominant. The mean temperature was generally 2° to 3° below the normal. The number of frosty days was 28 while the normal is 18. Most of the light ships were withdrawn.

Table 2 gives the occurrence of frosty days during the winter. During the end of November some odd days with frost occurred, and December 20 the first frosty period of the winter commenced and it lasted for 22 days. The second and the third period were quite short, although ice was formed, and the fourth lasted for 24 days. Also in March a few frosty days occurred.

Of the stations mentioned in Table 2 Copenhagen had the greatest amount of cold (272.9) and Fanø the smallest (198.5).

Table 3 gives the temperature and the salinity of the surface water in the course of the winter, the mean values are quoted for each decade. About the temperature is given more under the head of »Summary of the state of the ice in the various waters«.

In December when the ice commenced to form, the salinity was specially low in the middle and the southern part of the Kattegat. In March it was low in Læsø Rende. At the coast stations the salinity was generally below the normal all through the winter.

Table 4 contains a summary of all the stations where observations concerning the ice are taken.

In order to further uniformity of judgement, the state of the ice is indicated by letters having the following signification.

Free of ice.....	A	Heavy drift ice.....	F
Brash and pancake ice. B		Pack	I
Packed brash and pancake ice..... E		Screw ice.....	H
Open ice	C	Thin fixed ice	D
Drift ice.....	K	Heavy fixed ice	G

The following description gives a more precise explanation of the designations above:

B. *Brash ice* is a mass consisting of snow and water, or of very small pieces of ice not yet frozen together. *Pancake ice* consists of small, generally round, ice flakes or ice lumps. It may appear alone, brought together by the wind or the sea, but it often appears in connection with *brash ice*.

- E. *Sammenpakket Sjæl- og Kvadderis* er Sjælis eller Kvadderis eller begge Dele i Forening, som paa Grund af Kuling eller Strøm, eller mulig Hindring for Isens Bevægelse er pakket sammen i en grød-lignende Masse af antagelig Tykkelse.
- C. *Spredt Drivis*. Isflager eller Iskodser, som med større Mellémrum er spredte over Farvandet, og som er i Drift.
- K. *Drivis*. Isflader eller Iskodser i mere samlede Masser, som er i Drift.
- F. *Svær Driv Is* Svære Isflager eller Iskodser i samlede Masser, som er i Drift.
- I. *Pakis*. Svære Iskodser, som af Kuling eller Strøm, eller, hvad oftest er Tilfældet, paa Grund af Indsnævring af Farvandet, er pakkede sammen til en svær tæt Masse.
- H. *Skrueis*. Is, som skruer.
- D. *Tynd Fastis*. En sammenfrosset, landfast Isflade af mindre Styrke.
- G. *Svær Fastis*. En sammenfrosset, landfast Isflade af betydelig Styrke.

Besejlingsforholdene er udtrykt ved Bogstaver, som har følgende Betydning:

Skibsfarten uhindret	N
» vanskelig for Sejlskibe	O
» vanskelig; for Sejlskibe kun mulig med Bugserhjælp	P
» lukket for Sejlskibe	Q
» kun mulig for kraftige Dampere. R	R
» kun mulig med Isbryderhjælp... S	S
» helt lukket..... T	T

Rende holdes aaben med Isbryder

I *Tabel 5* er for hvert Sted anført, hvormange Dage der har været Is af de forskellige Arter, og hvormange Dage Skibsfarten har været paavirket deraf. Endvidere findes Rubrikker for det samlede Dageantal med Is samt for Tiderne for første og sidste Ismeldung. Det maa dog erindres, at Stedet i Mellemtiden godt kan have været isfrit selv i længere Tid.

I sidste Rubrik er der for enkelte Pladser anført den største Is-Tykkelse i cm, som der har været Lejlighed til at maale.

Oversigt over Isforholdene i de forskellige Farvande.

Vinterens første Frostperiode begyndte d. 20de December, og ved Fyrskibene begyndte Vandets Temperatur at falde hurtigt omkring 23de—26de December. Negativ Temperatur i Overfladen naaedes ved Østre-Flak allerede den 26de, i det nordlige Kattegat og Sundet 29de—31te og omkring Anholt og Schultz-Grund fra 1ste til 3die Januar.

- E. *Packed brash and pancake ice* is brash ice or pancake ice or both at the same time, which has been packed together in a turbid mass of considerable thickness either by the wind or the current or by some obstruction to the free drift of the ice.
- C. *Open ice* is drifting ice flakes or hummock ice scattered over the water at greater intervals.
- K. *Drift ice* is drifting ice flakes or hummock ice in more collected masses.
- F. *Heavy drift ice* is drifting heavy ice floes or hummock ice in close masses.
- I. *Pack* means heavy ice floes, which have been packed together in heavy, dense masses, either by the wind or the current or — as is generally the case — by a narrowing of the waters.
- H. *Screw ice* means ice that is screwing or nipping.
- D. *Thin fixed ice* means thin land ice.
- G. *Heavy fixed ice* means heavy land ice.

The conditions for navigation are indicated by letters having the following signification.

Navigation unimpeded	N
» difficult for sailing vessels..... O	O
» difficult, impossible for sailing vessels without tug-boat. P	P
» closed for sailing vessels	Q
» only possible for powerful steamers R	R
» impossible without the assistance of icebreaker	S
» quite closed	T
Channel kept open by means of ice breaker U	

In Table 5 is for each station put down the number of days with ice of the various descriptions and the number of days on which navigation has been affected by the ice. Further rubrics will be found giving the total number of days with ice, and the dates of the first and the last report of ice. However, it must be noted, that in the interval the station may very well have been free of ice, even for a longer period.

In the last column is given — for some of the stations — the greatest noted thickness in cm.

Summary of the state of the ice in the various waters.

The first frosty period of the winter commenced on December 20., and at the light ships the temperature of the water began to sink fast about the 23rd to the 26th of December. A negative surface temperature was reached at Østre-Flak as early as the 26th, in the northern part of the Kattegat and the Sound on the 29th to 31st, and at Anholt and Schultz-Grund between the 1st and 3rd of January.

I 5 Meters Dybde blev Temperaturen negativ ved Skagen og Lappegrunden den 31te December, ved Læsø-Trindel og i Læsø-Rende den 1ste Januar.

Hvor Temperaturen faldt under 0° i 5 Meters Dybde begyndte Isdannelsen samtidig eller Dagen efter i Overfladen.

I Læsø-Rende blev hele Vandlaget fra Overfladen til Bund afkølet under 0° . Ved de øvrige Fyrskibe i Kattegat fandtes et koldt Overlag ned til 15 à 20 Meters Dybde. Ved Halskov Rev var Vandet i 15—20 Meters Dybde c. $\div 0.3$, medens det fra 0—10 Meters Dybde holdt sig over 0° .

Under Kysterne faldt Vandets Temperatur hurtigere end i de aabne Farvande. Negativ Temperatur naaedes i Limfjorden den 21de December, i Isefjorden og Femer-Bælt den 26de, i Store-Bælt den 27de og i Lille-Bælt den 29de. Omkring Christiansø holdt Temperaturen sig over 0° indtil den 13de Februar, og samme Dag begyndte Isdannelsen her.

I de aabne Farvande begyndte Isdannelsen ved Helsingør den 31te December, og den følgende Dag var der Isdannelse over hele Sundet, i Langelands-Bælt og ved Assens, den 3die Januar tillige over store Strækninger af Kattegat, den 5te var der Nyis i alle Farvande helt op til Skagen, og i Sundet laa der Vest for en Linie fra Saltholm over Hveen Pakis, der kun var passabel med Isbryderhjælp; denne Pakis var 24 cm tyk.

Fra den 7de drev Kattegatsisen over i Østerrenden, der kun var farbar for kraftige Dampere, Bælterne var renset for Is, medens Sundet stadig var isfyldt paa dansk Side, og her pakkedes Isen den 8de haardt mod Sjælland for stiv NNO-lig Vind, særlig omkring Taarbæk laa der svære Ishindringer. Øst for Anholt laa svær Is, medens de øvrige Farvande ingen videre Ishindringer havde.

Fra den 9de til den 19de laa Pakisen langs Sjællands Kyst fra København Nord over, nogle Dage spærrende hele Sundet; men fra den 14de var der isfrit under Sverige gennem hele Sundet, og i Store Bælt laa en Del Drivis.

Ved den 1ste Frostperiodes Ophør den 10de

At a depth of 5 m the temperature became negative at the Scaw and Lappegrund on December 31, at Læsø-Trindel and Læsø-Rende on January 1.

Where the temperature of the water at a depth of 5 m. sank below 0° , the formation of ice on the surface generally commenced simultaneously or the next day.

In Læsø-Rende the temperature of the water sank below 0° from the surface to the bottom. At the other light ships in the Kattegat there was a cold layer of water reaching to a depth of 15 to 20 m. At Halskov-Rev the temperature of the water was about $\div 0.3$ at a depth of 15 to 20 m, while the temperature remained above 0° from the surface to a depth of about 10 m.

Along the coasts the temperature of the water sank faster than in the open fairways. Negative temperature was reached on December 21 in Limfjorden, on the 26th in Isefjorden and Femer Belt, on the 27th in the Great Belt and on the 29th in the Little Belt. Around Christiansø the temperature kept above 0° to February 13, and on that day the formation of ice commenced.

In the open fairways the ice commenced to form at Elsinore on December 31, and on the next day ice was formed all over the Sound, in Langelands Belt and at Assens. On January 3 large areas of the Kattegat froze over, on the 5th there was young ice right to the Scaw, and in the Sound west of a line from Saltholm to Hveen there was so much pack that it was unpassable except with the assistance of ice breaker. This pack was about 24 cm thick.

From January 7 the ice in the Kattegat drifted eastward filling Østerrenden which only was passable for powerful steamers. The Belts were free of ice but in the Sound there was still ice on the Danish side, and on the 8th a fresh northnortheasterly gale packed the ice hard against the coast of Sealand, especially round Taarbæk. East of Anholt there was still heavy ice while there was only very little ice in the other fairways.

From the 9th to the 19th the pack kept lying along the coast of Sealand from Copenhagen towards the north, and on odd days the ice completely blocked the Sound; from the 14th, however, the Sound was free of ice along the coast of Sweden. In the Great Belt there was some drift ice.

On January 10 when the first frosty period ceased

Januar var Farvandene undtagen Sundets vestlige Side
rensede for Is.

I den 2den Frostperiode fra 13de—18de Januar dannedes Isen hovedsagelig i Bælterne fra den 16de, men Isen hindrede kun Sejlskibsfarten; gennem Sundet var under svensk Kyst en bred, aaben Rende, hvori Skibene gik, og Kattegat var isfrit.

Den 21de Januar begyndte den 3die Frostperiode, der varede til 29de Januar, og med det nu afkølede Vand dannedes Isen saa hurtigt, at der den 23de var Isdannelse overalt undtagen i Lille-Bælt. I Kattegat var Isdannelsen saa stærk, at Sejladsen allerede den 24de kun var mulig for kraftige Dampere fra Skagen gennem Kattegat Østerrende; i Vesterrenden var Forholdene noget lettere. Den 25de sad Dampere fast i Kattegat, og Isen laa nu gennem alle Farvandene. En stærk Strøm hindrede dog videre Isdannelse i Sundet.

SSV-lig Storm den 27de drev Isen mod Farvandenes Østsider, og svære Skruninger fandt Sted langs den svenske Kattegatskyst. Paa nær den sydlige Del af Lille-Bælt var alle Hovedfarvande derfor passable, og fra den 2den Februar isfri paa nær Kystis langs svensk Kattegatskyst.

Den 4de Frostperiode begyndte den 6te Februar, og da Vandet nu var stærkt afkølet, foregik Isens Dannelse hurtigere, end hvis der ingen tidligere Isperiode havde været. I Sundets sydlige Del begyndte Isen allerede den 9de Februar og Isdannelsen fortsatte jævn de følgende Dage.

Den 12. Februar laa Isen pakket mod Sjællands-siden i Sundet, haardest omkring Taarbæk Rev og mod Stevns, medens Passagen gik langs Skaanes Kyst. I Femer-Bælt var der Isdannelse.

Den følgende Nat blæste nordostlig Vind, hvorfor Isen den 13de dannedes i Østsiden af Kattegat. I Sundet forværedes Forholdene, der laa svær Pakis Vest for en Linie fra Hveens Sydspids over Middelgrundsfortet til Saltholms Nordpynt; Øst herfor var Forholdene lettere. Den svære Is gik Syd paa til Stevns, og Syd herfor foregik Isdannelsen under Land forbi Møen og Gedser gennem Femer-Bælt og Lange-lands-Bælt, i Smaalandsfarvandet og i Store-Bælt Øst-

the fairways were free of ice excepting the western side of the Sound.

During the second frosty period from the 13th to the 18th of January the ice was mainly formed in the Belts after the 16th, but only sailing vessels were impeded by the ice. In the Sound there was a broad open navigable lane along the Swedish coast, and the Kattegat was free of ice.

The third frosty period commenced on January 21 and lasted to the 29th. As the water now was cold the ice formed so fast that on the 23rd all the waters were covered with ice except the Little Belt. In the Kattegat the ice was so thick that on the 24th only powerful steamers were able to work their way from the Scaw through the Kattegat Østerrende; in Vesterrenden the conditions were somewhat easier. On the 25th steamers stuck fast in the Kattegat and now there was ice in all the fairways. A strong current in the Sound, however, prevented further formation of ice.

On the 27th a southsouthwesterly gale drove the ice eastward and heavy screwings took place in the Kattegat along the Swedish coast. Excepting the southern part of the Little Belt all the main fairways had become passable, and from February 2 they were free of ice except the Kattegat along the Swedish coast.

The fourth frosty period commenced on February 6, and as the water now was very cold the ice was formed much faster than if no earlier frosty period had occurred. In the southern part of the Sound the formation of the ice commenced on February 9 and continued during the following days.

On the 12th the ice was lying packed against the coast of Sealand especially about Taabæk Rev and Stevns, while the navigation passed along the coast of Scania. Ice was also formed in Femer-Belt.

The ensuing night northeasterly wind was blowing and consequently the eastern side of the Kattegat froze over on the 13th. In the Sound the conditions grew worse; west of a line from the south point of Hveen over the fort on the Middleground to the north point of Saltholm there was heavy pack, while the conditions were easier east of this line. Southward the heavy ice reached to Stevns and further southward the water froze along the land past Møen and Gedser through

side. Ogsaa ved Hammeren dannedes Is; Vandets Temperatur gik samme Dag under 0° ved Christiansø.

Fra den 14de var Isforholdene haardest i Kattegat Østerrende, hvor Dampere sad fast. I Sundet var Skibsfart kun mulig med Isbryderhjælp, og Bælterne var isfyldt. I Østersøen dannedes Isen over hele Omraadet fra Sjælland til Bornholm, hvor Dampere sad fast fra den 17de.

Denne Isdannelse i Østersøen satte sit Præg paa Isperiodens Varighed; uden Isdannelse i Østersøen havde Isperioden i Sundet ikke haft den Varighed, som den fik, thi betydelige Mængder af Is fra Østersøen mellem Møen og Bornholm blev Gang paa Gang af Vind og Strøm ført gennem Sundet og ikke gennem Store-Bælt. Denne Østersøis kunde ikke smelte paa Stedet, da Vandets Temperatur var negativ hele Marts Maaned.

VSV-lig stiv Kuling den 17de om Eftermiddagen drev Kattegatsisen mod svensk Kyst, hvor Isen fra d. 18de laa som et bredt Pakisbælte. Sundet var isfyldt og kun farbart med Isbryderhjælp; i den vestlige Del af Østersøen laa Fastisen til Øst for Bornholm, med svær Pakis mange Steder, og 20 cm ren Is. Sejladsen var kun mulig med Isbryderhjælp. I Bælterne laa Isen pakket i Farvandenes Østsider, men i øvrigt var der Drivis i selve Farvandet.

Forholdene var saa nogenlunde de samme i de følgende Dage, dog dannedes den 21de, paa Grund af vestlig Vind, en bred, aaben Rende i Sundet langs dansk Kyst fra Helsingør til Dragør.

Den 24de Februar var Kattegat isfrit, og Bælterne havde kun noget Drivis.

Den 25de indtraf der med OSO-lig Vind og Søndenvande en stærk Isdrift gennem Sundet, og Isdriften fortsattes op langs svensk Kyst i Kattegat. Med stærk Frost den 27de tiltog Isen igen, og dannedes i alle danske Farvande undtagen Strækningen fra Skagen gennem Læsø-Rende til Fornæs. Kattegat Østerrende, Store-Bælt og Femer-Bælt var kun passabelt for kraftige Dampere, og Sundet kun med Isbryderhjælp. Forholdene var nogenlunde ens de følgende Dage, og fra 2den Marts maatte Skibsfarten anses som standset Syd fra til Sundet.

Femer Belt and Langelands Belt, in Smaalandsfarvandet and the eastern side of the Great Belt. Ice was also formed at Hammeren and on the same day the temperature sank below 0° at Christiansø.

From the 14th the conditions of the ice were worst in the Kattegat Østerrende where several steamers stuck fast. Passage through the Sound was only possible with the assistance of ice breaker, and the Belts were also filled with ice. In the Baltic the whole area from Sealand to Bornholm froze over and some steamers stuck fast on the 17th.

This formation of ice in the Baltic was of the greatest consequence for the duration of the icy period in the Sound, because considerable masses of ice from that part of the Baltic that lies between Møen and Bornholm was again and again of wind and current driven through the Sound as it cannot get through the Great Belt, and it could not melt where it was lying owing to the temperature of the water which remained below 0° all through the month of March.

In the afternoon of the 17th a gale of westsouthwest drove the ice in the Kattegat against the Swedish coast where, from the 18th, the ice formed a belt of pack. The Sound was full of ice and only passable with the assistance of ice breaker. In the western part of the Baltic the fixed ice reached to east of Bornholm, the ice was about 20 cm thick and in many places there was heavy pack ice. Navigation was only possible with the assistance of ice breaker. In the Belts the ice was lying packed along the eastern sides of the fairways, while otherwise there was drift ice in the fairways.

The conditions did not change much during the following days, but on the 21st westerly wind formed a broad open lane in the Sound along the Danish coast from Elsinore to Dragør.

On February 24 the Kattegat was free of ice while there was a little drift ice in the Belts.

On the 25th an eastsoutheasterly wind combined with southerly current caused a violent ice drift through the Sound northwards along the Swedish coast in the Kattegat. Owing to severe frost on the 27th ice was again formed in all the Danish waters except the stretch from the Scaw to Fornæs through Læsø-Rende. The Kattegat Østerrende, the Great Belt and Femer Belt were only navigable for powerful steamers and the Sund only with the assistance of ice breaker. For some days the conditions remained almost unaltered but from March 2 the southern entrance to the Sound was closed to all navigation.

Den 4. Marts pakkedes Isen med sydlig Storm haardt mod Drogden, i Østersøen mod Skaanes Kyst og i Femer-Bælt mod Laalands Kyst.

For disse Dage haves følgende Meddelelse fra den isbrydende Damper »Arcturus«:

»Fra Finland til Christiansø var der isfrit. Ved Hammeren var haard Fastis. Fra Hammeren mod Arkona Fastis indtil 23 Sømil Nord for Arkona; holdt Iskanten Vest efter mod Møen, mødte Fastis fra 30 Sømil Sydost for Stevns og videre op til Dragør.«

Da Skibsfarten Syd fra lukkedes til Sundet, aabnedes den 4de en Rute fra København Nord om Sjælland via Store-Bælt og langs tysk Kyst ind i Østersøen. Skibe kommende fra Skagen gik gennem Kattegat Vesterrende ad samme Rute ind i Østersøen.

Læsø-Rende Fyrskib var inddraget fra $\frac{2}{1}$ — $\frac{29}{1}$ og fra $\frac{15}{2}$ — $\frac{18}{2}$, det blev holdt paa Station saa længe som muligt af Hensyn til, at Skibsfarten i lange Tider gik gennem Læsø-Rende. Efter 29. Januar var Fyrskibet kun inddraget i 3 Dage, hvori der var Is i Læsø-Rende.

Fra d. 4de Marts faldt Vinterens haardeste Isforhold, og saaledes forblev Isen hovedsagelig til den 12te Marts, da stærk Frost foraarsagede Nyisdannelse flere Steder. Sundet og Bælterne var driftsyldte, nogle Steder maaltes 50 cm tyk Is, og Sundets sydlige Del var lukket af Pakis indtil den 15. Marts. I Østersøen observeredes Fastis indtil 90 cm. Tykkelse.

Den 16. Marts indtraadte en betydelig Bedring. Kattegat var stadig isfrit, Bælterne havde aftagende Drivis, og i Sundet var dannet en isfri Rende Nord fra langs Sjælland ned til Dragør. Adgangen Syd fra var nu tilgængelig for kraftige Dampere, men Driven fra Østersøen drev stadig gennem Sundet, og stiv NO-lig Kuling den 20de pakkede Isen haardt mod Sjælland.

Den 21de om Aftenen begyndte atter en stærk nordgaaende Isdrift gennem Sundet, den vedblev den 22de, og Sundisen drev den 23de langt ud i Kattegat.

Fra 25de Marts fandtes kun spredt Is i Bælterne og Sundet, og i de nærmest følgende Dage var alle Hovedfarvande isfri undtagen Sundet, hvor Drivis endnu

On March 4 a southerly gale pressed the ice hard against the south coast of Scania and Laaland and into the Drogden.

Concerning these days the following report has been received from the icebreaking steamer »Arcturus«:

»From Finland to Christiansø the sea was free of ice. At Hammeren hard fixed ice was encountered. From Hammeren towards Arkona there was fixed ice to 23 miles north of Arkona; followed the edge of the ice westwards towards Møen, met with fixed ice from 30 miles southeast of Stevns to Dragør.«

As the southern entrance to the Sound became closed for navigation a route was opened on the 4th from Copenhagen north of Sealand via the Great Belt along the German coast into the Baltic. Vessels coming from the Scaw went through the Kattegat Vesterrende and further followed the above mentioned route into the Baltic.

Læsø-Rende light ship was withdrawn from $\frac{2}{1}$ to $\frac{29}{1}$ and from $\frac{15}{2}$ to $\frac{18}{2}$; it was kept on its station as long as possible in view of the fact that the navigation during long periods had to pass through Læsø Rende. After January 29 the light ship was only withdrawn for 3 days during which time there was ice in Læsø-Rende.

After March 4 the conditions of the ice were very bad and remained almost unaltered to the 12th, when severe frost again caused the formation of young ice in several localities. The Sound and the Belts were filled with drift ice that in some places was about 50 cm thick. The southern part of the Sound was blocked by the pack until March 15. In the Baltic the fixed ice attained a thickness of 90 cm.

On March 16 the conditions improved. The Kattegat was free of ice, the drift ice in the Belts was decreasing and in the Sound an icefree lane had been formed along the coast of Sealand southward to Dragør. From the south powerful steamers were able to force the ice, but the drift ice from the Baltic continued to drift through the Sound, and on the 20th a fresh northeasterly wind pressed the ice hard against the coast of Sealand.

In the evening of the 21st a violent northward icedrift through the Sound again set in, and on the 23rd the Sound ice had drifted far into the Kattegat.

From March 25 there was only scattered ice in the Belts and the Sound and during the following days all the main fairways were free of ice excepting

holdt sig, men her var tilgængeligt for alle Skibe undtagen Sejlskibe.

Den 31te kunde Sejlskibe komme gennem Sundet; men stadig laa der Drivis i den vestlige Østersø langs Skaanes Kyst.

Den 2den og 3die April drev Isen fra Skaanes Sydkyst for østlig Vind mod Stevns og den 4de var Køge- og Fakse-Bugt tildels isfyldt, medens selve Sundet havde spredt Is.

Fra den 7de April var der isfrit overalt.

For de enkelte Hovedfarvande var Isens Styrke og Varighed i Vinterens Løb vidt forskellig, som det fremgaar af følgende Oversigt:

the Sound were there still was drift ice although it was navigable for all vessels except sailing ships.

On the 31st sailing vessels were able to pass through the Sound, but in the western part of the Baltic there was still drift ice along the coast of Scania.

On the 2nd and 3rd of April easterly wind drove the ice from the south coast of Scania towards Stevns and on the 4th Køge and Fakse-Bugt were partly filled with ice while there was scattered ice in the Sound.

From April 7th the sea was free of ice everywhere.

As it will appear from the following schedule the strength and duration of the ice are very different in the various mainfairways:

Vinteren 1923—1924	Is i Antal Dage Total number of days with ice	deraf besværlig for Dampere thereof difficult for steamers	deraf med Isbryderhjælp eller helt lukket thereof with assistance of icebreaker or quite closed	deraf helt lukket thereof quite closed
Kattegat, Læsø-Rende	19	3		
Kattegat Øst for Anholt, Læsø . .	32	14		
Syd om Hesselø	22	5		
Lille-Bælt	61	20		
Store-Bælt	71	20		
Femer-Bælt, Gedser	65	21		
Sundet	82	57	38	14
Vestlige Østersø (mellem Møen og Bornholm)	53	34	26	14

Kattegat kan saaledes ikke siges at have haft hverken langvarige eller særlig haarde Isforhold. Bælterne havde Is lidt over et Par Maaneder, men ikke særlig besværlige Isforhold, da kraftige Dampere stedse kunde passere. Vinterens haarde Isforhold indtraf mellem Møen og Bornholm og i Sundet, hvilket sidste Farvand foruden sin egen Is var besværliggjort af Østersøens Is, der forårsagede svære Isdrifter gennem Sundet, der derved fik Is i ca. 3 Maaneder, og i et Par Uger var det sydlige Sund og den nordlige Del af Farvandet fra Møen til Bornholm helt. lukket.

I tidligere Dage vilde Sundisen — efter min personlige Mening — være bleven liggende mellem Frostperioderne og rimeligvis i Vinterens Løb være bleven saa stærk, at man havde kunnet gaa over Sundet. Nu bryder Isbryderne stadig deres Render, hvorfor Isen kommer i Drift for enhver stærk Kuling. At Sundet Syd fra var lukket for Skibsfarten i 14 Dage skyldes

Thus it will be seen that the conditions of the ice in the Kattegat cannot be said to have been neither very severe nor very long-lasting. The Belts have ice for a little more than 2 months, but the conditions were not specially difficult as powerful steamers always were able to get through. The worst conditions during the winter occurred between Møen and Bornholm and in the Sound, the latter fairway because it besides its own ice was impeded with the ice from the Baltic, which caused the violent ice drifts through the Sound. The Sound therefore had ice for about 3 months and for a few weeks the southern part of the Sound and the northern part of the water between Møen and Bornholm were quite closed.

In former days the ice in the Sound — according to my personal view — should have kept lying between the frosty periods and in the course of the winter it would probably have become so strong that one might have walked over the Sound. Nowadays the icebreakers continually break new lanes so that any fresh wind will set the ice adrift. That the southern part of the

ikke manglende Isbryderhjælp, da Isbryderne selv med Lethed kunde gaa igennem, men Isforholdene kan blive saa haarde, at almindelige Dampere ikke taaler at følge Isbryderne eller at slæbes gennem Pakis og Skrueis.

Forholdene fra tidligere Aar, hvor Sundisen kunde ligge fast Maaneder igennem, vil man derfor næppe mere kunne regne med.

I signalstationerne blev i udstrakt Grad benyttet af Skibe, særlig benyttedes Skagen og Helsingør. Skagen modtog ialt 151 Forespørgsler om Is og Helsingør 20 à 30 daglige Forespørgsler fra Skibe i Søen og ved Land samt fra Personer. Tillige telefoneredes daglig til Stationerne fra nærliggende Havn. Det vilde sikkert være formaalstjenligt, om Havnene anskaffede sig en Radiomodtager, hvorved Havnene allerede Kl. 10 $\frac{1}{2}$ Fm. kan modtage Istelegrammer fra 35 Steder Landet rundt.

Vestkysten. Graadyb havde Is i ca. 2 Maaneder, heraf kun 4 Dage vanskelig for Dampske. Ringkøbing Fjord havde Is i 4 $\frac{3}{4}$ Maaned.

I Limfjorden begyndte Isdannelsen 23. November og her blev Isen nogle Steder liggende til 21 April. Fra Tyborøn til Oddesund laa Isen i 2 Maaneder; fra Oddesund til Løgstør i ca. 3 Maaneder; fra Løgstør til Hals i ca. 4 Maaneder og ud for Løgstør i henved 5 Maaneder. Allerede 26. December gik man over ved Aggersund.

Af Fjordene ved Kattegat havde Mariager- og Randers Fjord Is i 17 Uger, Odense Fjord i 14 Uger, medens Havnene havde Is fra 3—14 Uger. I Bugter og Vige laa Isen fra 4—9 Uger.

I Sundet var der Is i næsten 3 Maaneder, og Havnene havde Is i 10 à 12 Uger.

I Store-Bælt laa Isen nogle Steder i lidt over 2 Maaneder. Kallundborg Havn havde Is i 14 Uger, Nyborg Havn og Korsør Havn i 8 Uger, Nakskov Havn i 12 Uger.

I Lille-Bælt var der Is i ca. 2 Maaneder. Vejle- og Haderslev Fjord og Havn havde Is i ca. 15 Uger, Kolding Fjord og Havn i 14 Uger, Aabenraa Fjord og Havn i 8 Uger, Bogense- og Fredericia Havn i ca. 5 Uger.

Sound became closed for about a fortnight was not owing to want of assistance from the icebreakers as these vessels easily could get through, but it was because the ice may be so difficult that common steamers cannot stand the pressure of the ice when they follow the icebreaker or are towed through pack and screwice.

It is therefore unlikely that the ice in the Sound ever again will keep on lying firm for months as formerly not so seldom happened.

The ice signal stations were very much used by vessels, and especially the Scaw and Elsinore were very often called up. Altogether the Scaw received 151 inquiries, and Elsinore was called up 20 to 30 times a day by ships as well out at sea as in port and also by persons. The stations were also called on the telephone from the neighbouring harbours. It would certainly be expedient if the harbours were furnished with a radio receiver which would make it possible for the harbours as early as 10 $\frac{1}{2}$ a. m. to receive telegrams concerning the ice from 35 places all over the country.

The West coast of Jutland. Graadyb had ice for about 2 months, but it was only for 4 days that the ice was difficult for steamers. Ringkøbing Fjord had ice for 4 $\frac{3}{4}$ months.

In Limfjorden the formation of ice commenced on November 23 and in some places the ice kept on lying till April 21. From Thyborøn to Oddesund there was ice for 2 months, from Oddesund to Løgstør for 3 months; from Løgstør to Hals for about 4 months. Already on Dec. 26 one might walk over the ice at Aggersund.

Of the Fjords at the Kattegat Mariager and Randers Fjord had ice for 17 weeks, Odense Fjord for 14 weeks, while the harbours had ice for 3—14 weeks. In bights and creeks the ice was lying for 4—9 weeks.

In the Sound there was ice for almost 3 months and the harbours had ice for 10—12 weeks.

In the Great Belt the ice was in some places lying for a little more than 2 months. Kallundborg had ice for 14 weeks, Nyborg and Korsør for 8 weeks and Nakskov for 12 weeks.

In the Little Belt there was ice for about 2 months. Vejle and Haderslev Fjords and harbours had ice for about 15 weeks, Kolding Fjord and harbours for 14 weeks, Aabenraa Fjord and harbour for 8 weeks, Bogense and Fredericia harbours for about 5 weeks.

I den vestlige Østersø havde Nysted Bredning Is i 13 Uger, Præstø Fjord i 16 Uger, Rødby Havn i 10 Uger, medens Farvandet havde Is i 8 Uger.

Omkring Bornholm var der Is i Østersøen i henved 2 Maaneder, men ved Østkysten ud for Nexø, kun i 20 Dage. Rønne havde Is i 11 Uger, Nexø Havn i 5 Uger.

De indre Farvande. I Isefjorden begyndte Isdannelsen den 27. November i Roskilde Fjord, og Isen laa her til 10. April. Havnene havde Is fra 14—16 Uger.

I Smaalandsfarvandet optraadte Isen fra Slutningen af December til Begyndelsen af April. Vordingborg Havn havde Is i 16 Uger, Skelskør og Nykøbing i 15 Uger, Bandholm i 12 Uger.

I Farvandet mellem Øerne Syd for Fyen optraadte Isen fra Slutningen af December til Begyndelsen af April. Af Havnene havde Marstal Is i 15 Uger, Faaborg i 14 Uger, Rudkøbing 12 Uger og Svendborg 7 Uger.

Af 141 Stationer var i Vinteren 1923—24 kun 1 Station, Vyl, isfri. 47 Stationer havde Is i mere end 3 Maaneder; 7 Stationer i mere end 4 Maaneder.

Det højeste Antal Dage med Is — 148 — havde Limfjorden ud for Løgstør. Den første Is viste sig den 21. November (Ringkøbing Fjord, sydlig Del); den sidste Is saas den 21. April (Limfjorden ud for Løgstør).

Isens Tykkelse blev maalt fra 54 Stationer. Gennemsnitstykkelsen var nærlig ens for Farvande, Fjorde og Havne, nemlig 32 cm. Den største Tykkelse ren Is var 90 cm, observeret fra Statens Isbryder »Isbjørn« i Østersøen. Pakisen var fra 1—1.9 Meter tyk og Skrullinger var efter »Isbjørn« Opgivelse saa dybe, at hele Skibets Bund har været aftegnet i Isen.

Tabel 6 viser, hvorlænge Fyrskibene gennemsnitlig har været inde for Is siden 1879. Det fremgaar af Tabellen, at Fyrskibene inden for Skagen som Regel inddrages i 1 af 3 Vintre. Naar Fyrskibene inddrages er de gennemsnitlig inde i ca. 36 Dage.

In the western part of the Baltic Nysted Bredning had ice for 13 weeks, Præstø Fjord for 16 weeks, Rødby harbour for 10 weeks, while the fairways had ice for 8 weeks.

Around Bornholm there was ice for about 2 months but off Neksø on the east coast only for 20 days. Rønne harbours had ice for 11 weeks, Neksø harbour for 5 weeks.

The inner waters. In Isefjorden the ice commenced to form in Roskilde Fjord on November 27 and kept on lying till April 10. The harbours had ice for 14—16 weeks.

In Smaalandsfarvandet there was ice from the end of December to the beginning of April. Vordingborg harbour had ice for 16 weeks, Skelskør and Nykøbing for 15 weeks and Bandholm for 12 weeks.

In the waters between the islands south of the Funen there was ice from the end of December to the beginning of April. Marstal had ice for 15 weeks, Faaborg for 14 weeks, Rudkøbing for 12 weeks and Svendborg for 7 weeks.

Out of 141 station only one, Vyl, was free of ice during the winter 1923—24. 47 stations had ice for more than 3 months and 7 stations for more than 4 months.

The highest number of days with ice — 148 — was reported from Limfjorden off Løgstør. The first ice appeared on November 21 (southern part of Ringkøbing Fjord); the last ice was observed April 21 (Limfjorden off Løgstør).

The thickness of the ice was measured at 54 stations. The mean thickness was 32 cm and it was almost the same in the fairways as in the Fjords and harbours. The greatest thickness of clean ice was 90 cm and it was observed from the Government's ice-breaker »Isbjørn« in the Baltic. The pack ice attained a thickness of 1—1.9 m and according to the reports from the »Isbjørn« the thickness of the ice in the screwings was some times greater than the draught of the vessel.

Table 6 gives the mean duration of the withdrawal of the light ships since 1879. It appears from the table that the light ships inside the Scaw as a rule are withdrawn one winter out of 3. When the light ships are withdrawn, the withdrawal usually lasts for about 36 days.

Ismeldingstjenesten, som træder i Virksomhed, naar Is begynder at optræde i Hovedfarvandene, var etableret fra 29de December 1923 til 8de April 1924. Af 31 Vintre har Istjenesten været etableret i 12, hvilket svarer til Is i Hovedfarvandene i 1 af 3 Vintre. Istjenes-ten begynder som Regel ikke før i Slutningen af Januar, men i Vinteren 1923—24 begyndte den 29de December.

Til Sammenligning mellem Vinteren 1923—24 og de 17 foregaaende Vintre tjener *Tabel 7*, hvor Tallene angiver det gennemsnitlige Antal Dage med Is for de forskellige Slags Farvande og Havne. Det ses, at Vinteren 1923—24 var en særlig langvarig, idet Gennemsnittet af Antal Isdage for »alle Stationer« var 68.0, medens Gennemsnittet for 18 Aar er 19.4 Dage med Is.

De sidste 18 Vintre grupperer sig med Hensyn til Isdagenes Antal i 2 skarpt adskilte Grupper. For de 6 isrige Vintre, med Is i Hovedfarvandene, er Gennemsnittet 42.2 Dage med Is med Grænserne 30.3 og 68.0. Gennemsnittet for de 12 isfattige Vintre er 8.0 Dag med Is og med Grænserne 0.9 og 15.3; af disse Vintre var Vinteren 1920—21 en særlig isfattig Vinter.

Gennemsnittet af Antal Isdage for »Aabne Farvande« er for de 6 isrige Vintre 22.5, men for Vinteren 1923—24 ialt 40.3 Dage. For »Aabne Farvande« til-tager Antal Dage med Is jævnt fra Vinteren 1907 til Vinteren 1924.

I Tabel 7 er tillige anført Middeltallene og Kulde-summen for Stationer i Tabel 2, heraf ses, at Gennem-snittet af Middeltal for de 6 isrige Vintre er 162.5, og for de 12 andre Vintre 51.7.

Meteorologisk Institut bringer sin Tak til alle de Observatorer, hvis Iagttagelser har gjort det muligt at fremkomme med de foreliggende Oplysninger om Is-forholdene i de danske Farvande i Vinteren 1923—1924.

Maj 1924.

The ice signal service, which is carried into effect when the ice begins to appear in the main waters, was established from December 29 1923 to April 8 1924. Out of 31 winters the ice signal service has been established in 12, which corresponds with the appearance of ice in the main waters one out of three winters. Generally the ice signal service does not begin before the end of January but in the winter 1923—24 it was established on December 29.

In order to be able to compare the winter 1923—24 with the 17 preceding winters, Table 7 has been compiled, the ciphers of which give the average number of days with ice in the various waters and harbours. It will be seen that the winter 1923—24 was specially long-lasting the average number of days with ice at all the stations being 68.0 while the mean for 18 years is 19.4 days with ice.

Relative to the number of days with ice the last 18 winters form 2 distinctly different groups. During the 6 icy winters, with ice in the main waters, the mean is 42.2 days with ice, the limits being 30.3 and 68.0. The mean for the 12 winters with only a little ice is 8.0 days with ice the limits being 0.9 and 15.3. Of these winters the winter 1920—21 was specially mild.

The average number of days with ice in the »open faiways« during the 6 icy winters is 22.5, but during the winter 1923—24 it was 40.3 days. In the »open fairways« the number of days with ice is gradu-ally increasing from the winter 1907 to the winter 1924.

In Table 7 is also given the means of the amount of cold at the stations mentioned in Table 2. It will be seen that the mean for the 6 icy winters is 162.5 and for the other 12 winters 51.7.

The Meteorological Institute herewith desires to express its thanks to the many observers who have rendered it possible to publish the present particulars concerning the state of the ice in the Danish waters during the winter 1923—1924.

May 1924.

Tab. 1.

Luftens Middeltemperatur samt Afgigelserne fra Normalen i Vinteren 1923—1924.

The mean-temperature of the air and the variations from the normal temperature during the winter 1923—1924.

		Fanø (Nordby)	Skagen (Fyret)	Hesselø (Fyret)	Bogø (Navig. Skolen)	København (Trekroner)	Hammershus (Sandvig)
December	Middeltemp..	— 0.6	0.0	0.3	— 1.1	— 0.4	0.1
	Afgigelsen ..	— 1.5	— 1.8	— 1.3	— 2.3	—	— 1.8
Januar	Middeltemp..	— 1.3	— 1.3	— 1.8	— 2.4	— 2.4	— 1.6
	Afgigelsen ..	— 1.7	— 2.1	— 2.2	— 2.2	—	— 1.9
Februar	Middeltemp..	— 0.9	— 1.4	— 2.3	— 2.9	— 2.6	— 3.0
	Afgigelsen ..	— 1.5	— 1.8	— 2.8	— 3.1	—	— 3.3
Marts	Middeltemp..	0.2	— 0.9	— 0.9	— 0.2	— 0.5	— 0.4
	Afgigelsen ..	— 1.3	— 2.2	— 2.0	— 1.9	—	— 1.6

Tab. 2.

Frostperioderne og Frostdagene i Vinteren 1923—1924.

The frosty periods and frosty days during the winter 1923—1924.

	Frostdage frosty days	Frostperioder frosty periods	Frostdage frosty days	Samlet Kuldesum Total amount of cold							
Fanø (Nordby)	a $\frac{21}{11} - \frac{28}{11}$ b 8 c — 18.8	$\frac{20}{12} - \frac{9}{1}$ 20 m. Afb. — 86.5	$\frac{15}{1} - \frac{18}{1}$ 4 — 13.5	$\frac{22}{1} - \frac{26}{1}$ 5 — 9.3	$\frac{8}{2} - \frac{4}{3}$ 22 m. Afb. — 51.3	$\frac{7}{3} - \frac{8}{3}$ 2 — 3.8	$\frac{12}{3} - \frac{18}{3}$ 2 — 2.6	$\frac{18}{3} - \frac{21}{3}$ 4 — 12.5	$\frac{27}{3}$ 1 — 0.2	198.5	
Skagen (Fyret)	a $\frac{21}{11} - \frac{28}{11}$ b 6 m. Afb. c — 15.2	$\frac{7}{12}$ 1 — 0.7	$\frac{21}{12} - \frac{10}{1}$ 21 — 87.6	$\frac{16}{1} - \frac{18}{1}$ 3 — 5.2	$\frac{21}{1} - \frac{25}{1}$ 5 — 20.9	$\frac{6}{2} - \frac{8}{3}$ 20 m. Afb. — 65.3	$\frac{5}{3} - \frac{8}{3}$ 3 — 2.8	$\frac{11}{3} - \frac{18}{3}$ 3 — 3.1	$\frac{17}{3} - \frac{28}{3}$ 11 m. Afb. — 30.5		231.3
Hesselø (Fyret)	a $\frac{22}{11} - \frac{28}{11}$ b 4 c — 8.8	$\frac{20}{12} - \frac{10}{1}$ 22 — 75.3	$\frac{14}{1} - \frac{18}{1}$ 5 — 7.0	$\frac{21}{1} - \frac{29}{1}$ 7 m. Afb. — 21.1	$\frac{6}{2} - \frac{2}{3}$ 26 — 74.6	$\frac{5}{3} - \frac{8}{3}$ 4 — 4.1	$\frac{11}{3} - \frac{14}{3}$ 4 — 6.8	$\frac{17}{3} - \frac{22}{3}$ 6 — 16.5	$\frac{27}{3}$ 1 — 1.1	215.3	
Bogø (Navig. Skolen)	a $\frac{23}{11} - \frac{24}{11}$ b 2 c — 6.0	$\frac{20}{12} - \frac{10}{1}$ 22 — 112.5	$\frac{18}{1} - \frac{18}{1}$ 6 — 13.7	$\frac{21}{1} - \frac{29}{1}$ 7 m. Afb. — 18.2	$\frac{8}{2} - \frac{2}{3}$ 26 m. Afb. — 97.1	$\frac{7}{3} - \frac{8}{3}$ 2 — 3.0	$\frac{11}{3} - \frac{14}{3}$ 4 — 6.3	$\frac{17}{3} - \frac{21}{3}$ 5 — 14.6		271.4	
København (Trekroner)	a $\frac{22}{11} - \frac{26}{11}$ b 5 m. Afb. c — 11.8	$\frac{20}{12} - \frac{10}{1}$ 22 — 104.6	$\frac{14}{1} - \frac{18}{1}$ 5 — 8.4	$\frac{21}{1} - \frac{29}{1}$ 7 m. Afb. — 23.2	$\frac{6}{2} - \frac{4}{3}$ 27 m. Afb. — 94.0	$\frac{7}{3} - \frac{8}{3}$ 3 — 5.4	$\frac{11}{3} - \frac{18}{3}$ 3 — 4.9	$\frac{17}{3} - \frac{22}{3}$ 6 — 20.0	$\frac{27}{3}$ 1 — 0.6	272.9	
Hammershus (Sandvig)	a $\frac{23}{11} - \frac{24}{11}$ b 2 c — 3.7	$\frac{20}{12} - \frac{10}{1}$ 22 — 82.4	$\frac{15}{1} - \frac{18}{1}$ 4 — 9.4	$\frac{21}{1} - \frac{29}{1}$ 7 m. Afb. — 17.6	$\frac{6}{2} - \frac{1}{3}$ 24 m. Afb. — 96.9	$\frac{7}{3} - \frac{8}{3}$ 3 — 5.9	$\frac{11}{3} - \frac{14}{3}$ 4 — 7.4	$\frac{17}{3} - \frac{22}{3}$ 6 — 16.8	$\frac{28}{3} - \frac{31}{3}$ 3 m. Afb. — 3.0	243.1	

Anm. 1: a er Frostperiodens Varighed (the duration of the frosty period).

b er Antal af Dage, hvilke Middeltemperatur var under 0° (number of days with a mean temperature below 0°).

c er Kuldesummen (Produktet af Frostperiodens Middeltemperatur og Dageantallet) (the amount of cold (the product of the mean temperature of the frosty period and the number of days of the period)).

m. Afb. betyder med Afbrydelse (with interruption).

Tab. 3.

Middeltal af Vandets Overfladetemperatur og Saltholdighed Kl. 8 Fm. i Vinteren 1923—1924
The mean temperature and salinity of the surface water at 8 a. m. during the winter 1923—1924.
(Det øverste Tal i hver Rubrik angiver Temperaturen, det underste Saltholdigheden i %)
(The upper number in each rubric indicates the temperature, the lower the salinity).

1923—1924	Skagens-Rev	Læsø-Rende	Anholt-Knob	Lappe-Grund	Gedser-Rev	Halskov-Rev	Odde-Sund	Aalborg	Middelfart	Svendborg-Sund	Kels-Nor	Hundested	Middelgrunds-fortet	Masnedø	Christiansø
1/12—10/12	5.1 29.2	3.6 23.6	4.0 19.1	4.2 9.5	5.1 9.2	3.8 10.9	—0.1 28.3	0.5 21.7	3.8 17.0	2.2 17.4	4.2 9.5	2.7 18.9	4.3 8.8	4.2 9.2	5.4 7.6
11/12—20/12	4.4 32.1	4.9 25.9	3.8 18.3	3.6 13.2	4.3 10.7	3.7 12.6	0.3 28.9	0.4 17.5	3.3 17.3	2.4 16.7	3.6 11.7	2.7 15.7	4.0 12.7	3.7 9.8	4.0 7.4
21/12—31/12	1.9 30.6	1.1 26.6	1.4 21.3	0.6 12.8	1.8 10.3	1.3 14.8	—1.1 28.6	—1.4 22.0	1.2 17.7	0.0 16.9	0.6 13.8	—0.2 17.7	0.9 11.0	1.2 11.0	2.9 7.5
1/1—10/1	—	—	—	—	—	—	—0.1 28.3	—1.4 24.3	—0.1 16.5	—1.0 16.3	—0.5 11.1	—1.0 18.6	—0.4 8.7	—0.2 9.1	1.8 7.2
11/1—20/1	—	—	—	—	—	—	—0.4 28.9	—0.6 10.3	—0.4 16.2	—0.7 16.8	—0.5 9.3	—0.7 18.4	—0.1 7.9	—0.2 9.1	0.9 7.1
21/1—31/1	—	—	—	—	—	—	—1.1 28.7	—0.5 11.7	—0.4 16.2	—0.7 15.7	—0.2 12.1	—0.8 17.4	0.1 12.1	— —	0.6 7.1
1/2—10/2	1.6 30.7	1.7 29.3	—0.4 17.4	0.3 15.4	0.8 19.2	0.1 29.7	—0.7 16.3	1.6 21.0	0.0 17.5	0.8 17.5	—0.5 17.1	0.8 17.1	0.8 17.1	— —	0.6 7.2
11/2—20/2	—	0.0 25.1	—	—	—	—	—1.0 18.2	—1.0 17.0	—0.7 16.7	—1.0 16.7	—0.7 12.9	—0.6 18.2	—0.4 8.9	— —	—0.3 7.5
21/2—29/2	0.9 31.6	0.1 26.4	—	—	—	—	—1.2 29.3	—0.8 15.6	—0.6 17.7	—1.0 16.8	—0.7 14.2	—0.8 19.1	—0.2 10.2	— —	—0.5 7.4
1/3—10/3	0.6 32.9	0.3 24.2	—	—	—	—	—1.0 29.7	—1.0 22.3	—0.7 16.9	—0.7 17.1	—0.5 12.8	—0.8 18.8	—0.2 9.7	— —	—0.4 7.5
11/3—20/3	1.0 29.5	—0.1 23.3	—	—	—	—	—0.7 29.4	—1.0 20.6	—0.2 18.1	—0.7 16.4	—0.5 12.2	—0.5 18.5	—0.2 10.4	—0.4 11.5	—0.5 7.4
21/3—31/3	0.4 27.9	—0.1 22.1	—	—	0.8 10.0	—	—0.6 28.3	—0.6 19.8	0.2 18.1	0.5 17.0	0.6 12.3	0.4 18.9	0.5 7.9	—0.2 9.9	—0.2 7.5

Tab. 4.

Liste over alle Isobservationssteder.
List of all iceobservation stations.
Jyllands Vestkyst.

Esbjerg
Graadyb
Farv. v. Vyl Fyrskib
Ringk. Fjord sydl. Del
, , nordl., ,

Limfjorden.

Thyborøn-Kanal
Lemvig Havn og Lem-Vig
Nissum-Bredning
Odde-Sund
Struer Havn og Bugt
Thisted-Bredning
Salling-Sund
Livø-Bredning
Skive Havn og Fjord
Løgstør-Bredning
Limfjorden ud for Løgstør
Agger-Sund
Limfjord. Vest for Nørre-Sundby
Limfjorden ud for Aalborg
Limfjorden Aalborg—Hals
Hals-Barre

Kattegat.

Nord for Skagen
Syd for Skagen
Skagen Havn
Ved Hirsholmene
Frederikshavn
Kysten Hirsholm—Sæby
Læsø-Rende
Frhvn.-Gøteborg, vestl. Del
Frhvn.-Gøteborg, østl. Del
Kattegat Øst for Læsø
Kattegat Øst for Anholt
Kattegat Vest for Anholt
Anholt-Havn
Uden for Hals-Barre

Mariager-Fjord

Indl. til Mariager-Fjord
Katteg. v. Rand. og Mariag. Fjd.
Randers-Fjord
Indløb til Randers-Fjord
Grenaa Havn
Kattegat ved Grenaa
Kattegat ved Hjelm
Ebeltoft-Vig
Aarhus-Bugt
Aarhus Havn
Horsens Havn og Fjord
Farv. Vest for Samsø
Farv. Syd for Samsø
Odense Havn og Kanal
Odense-Fjord
Odense-Gab
Mellem Revsnæs og Samsø
Farvandet ud for Sejrø
Farv. ved Schultz's-Grund
Kattegat ved Hesselø

Sundet.

Farv. ud for Nakkehoved
Farvandet ved Helsingør
Helsingør Havn
Sundet ved København
Adgang til Kbhvn. Havn
Københavns Havn
Drogden
Flinterenden
Farv. Syd for Drogden
Køge-Bugt underste Del
Farvandet ved Stevns

Store-Bælt

Kallbg. Havn & indenf. Gisseløre
Kallundborg-Fjord
St.-Bælt ud for Romsø
Kerteminde Bugt
Nyborg Havn

Nyborg-Fjord

Vesterrenden
Østerrenden
Korsør Havn
St.-Bælt ved Omø
St.-Bælt ved Albuen
Nakskov Havn
Nakskov-Fjord
Indløb til Nakskov-Fjord
St.-Bælt ved Kels-Nor

Lille-Bælt.

Farv. ud for Åbelø
Vejle Havn og Fjord
Bogense Havn
Fredericia Havn
Lille-Bælt ved Middelfart
Kolding Havn og Fjord
Lille-Bælt ved Assens
Haderslev-Fjord
Aarø-Sund
Aabenraa Havn og Fjord
Als-Sund
Farvandet Syd for Als-Sund
Farvandet ud for Skjoldnæs

Østersøen.

Gulstav—Femern
Rødby-Havn
Femer-Bælt ud for Rødby
Nysted-Bredning
Farvandet ud for Gedser
Løbene til Gedser
Gedser—Warnemünde
Farvandet ud for Møen
Faxe-Bugt underste Del
Præstø Havn og Fjord

Bornholm.

Rønne Havn
Østersøen ved Rønne

Østersøen ved Hammeren

Østersøen ved Christiansø
Nexø Havn
Østersøen ved Nexø
Østersøen ved Dueodde

Isefjorden.

Indløbet til Rørvig
Kattegat ved Rørvig
Nykøbing Havn og Fjord
Holbæk Havn og Fjord
Roskilde Havn
Roskilde-Fjord

Smaalandsfarvandet.

Skelskør Havn og Fjord
Omø-Sund
Karrebæksminde Havn
Farvandet Nord for Vejø
Staalbybet
Bandholm Havn
Farvandet ud for Bandholm
Guldborg-Sund udf. Nykøbing
Guldborg-Sund nordlige Del
Farvandet Nord for Guldborg
Storstrøm
Vordingborg Havn
Kallehave—Stege
Bøgestrøm

Farvandet Syd f. Fyen.

Faaborg Havn og Fjord
Svendborg Havn
Svendborg-Sund østl. Del
Rudkøbing Havn
Rudkøbing-Løb nordlige Del
Marstal Havn
Farvandet ved Marstal
Farvandet Nord for Skjoldnæs
Ærøskøbing—Drejø

Bemærkninger
Remarks

Løs Sjæl- og Kvradderis	Isforholdene State of ice								Besejlingsforholdene Navigation								Sisteste opg. Tykk. i cm Greatest noted thick. of ice cm		
	Sammenpakket				Spredt Drivis				Svær Drivis				Pakis						
	b	e	c	k	f	i	h	d	g	Skruis	Tynd Fastis	Svær Fastis	n	Skibsf. vansklig	Skibsf. vansklig	Skibsf. lukket	Skibsf. kun mulig		
Jyllands Vestkyst.																			
Esbjerg	32	6	I	21	..	..	..	..	..	2	24	32	2	..	..	..	60	28/12 24/11 28/8
Graadby	23	14	8	3	3	5	I	..	..	11	19	16	7	4	..	..	57	22/8 28/8
Favr. v. Vyle Fyrskib . . . . .	..	..	..	4	7	14	..	4	6	106	..	..	..	..	..	..	..	75
Ringkøbing-Fjord sydl. Del. . . . .	..	..	2	6	4	..	4	10	88	3	11	..	..	..	..	..	..	35
Ringkøbing-Fjord nordl. Del. . . . .	..	..	..	..	..	..	..	..	..	4	..	4	13	2	127	141	9/4 4/4	
Limfjorden.																			
Thyborøn-Kanal	9	..	3	2	2	..	..	..	..	6	3	5	2	..	..	..	16	20/12 20/11 14/2
Lemvig Havn og Lem-Vig . . . . .	..	5	..	I	12	..	..	18	44	3	1	9	11	56	..	..	80	21/3
Nissum-Bredning	I	5	13	7	2	..	..	II	4	4	17	2	6	13	9	..	47	19/3
Odde-Sund	2	8	19	10	..	2	..	I	18	5	8	8	11	16	12	..	60	26/3 26/12	
Struer Havn og Bugt	I	..	..	..	15	..	7	21	76	..	13	5	4	31	67	..	120	25/11 31/3
Thisted-Bredning . . . . .	..	..	4	..	33	..	..	14	41	..	I	3	..	44	44	..	92	25/12 25/3
Salling-Sund . . . . .	..	I	28	9	12	..	..	6	38	2	4	I	30	13	11	..	94	28/3
Livø-Bredning	3	..	27	10	4	3	..	14	31	..	..	5	44	5	2	36	..	92
Skive Havn og Fjord . . . . .	..	..	I	3	3	..	I	11	113	..	..	18	3	8	2	101	13	132
Løgstør-Bredning	2	..	..	I	4	..	5	92	..	..	..	2	6	..	96	..	104	15/4 21/4
Limfjorden ud for Løgstør	14	..	18	5	..	56	8	12	35	..	32	19	..	18	79	..	148	26/11 21/4	
Agger-Sund . . . . .	..	..	26	8	4	13	I	9	71	20	9	9	6	4	2	82	..	132
Limfjorden Vest f. Nørre-Sundby	7	9	6	2	2	..	..	9	102	..	23	12	4	5	93	..	137	7/4
Limfjorden ud for Aalborg	22	7	6	14	..	..	..	21	34	..	30	16	II	47	..	..	104	28/11 28/3
Limfjorden Aalborg—Hals	29	..	..	I	5	3	..	27	31	..	36	29	9	31	..	28	105	26/11 27/8
Hals-Barre	19	25	29	..	3	II	..	..	..	5	34	23	2	16	7	..	87	25/11 24/8
Kattegat.																			
Nord for Skagen	5	..	4	..	..	..	..	..	..	4	3	2	..	..	..	..	9	4/1 24/1
Syd for Skagen	2	..	4	2	..	I	..	..	..	2	I	5	1	..	..	..	9	24/1 26/1
Skagen Havn	3	..	16	..	..	..	..	..	..	I	I	17	..	..	..	..	19	8/1 5/1
Ved Hirsholmene	3	..	2	I	..	..	..	..	..	3	2	I	..	..	..	..	6	24/1
Frederikshavn	33	I	..	..	..	..	..	7	..	15	5	21	..	..	..	..	41	4/8
Kysten Hirsholm—Sæby	2	..	6	II	I	3	..	..	..	3	8	4	6	I	I	..	23	7/3
Læsø-Rende	2	..	5	II	I	..	..	..	..	2	10	4	3	..	..	..	19	1/1 21/3
Frhavn—Göteborg vestl. Del.	3	..	4	I	..	..	..	..	..	3	..	5	..	..	..	..	8	14/2
Frhavn—Göteborg østl. Del.	6	..	17	I	9	..	..	2	..	2	13	8	12	..	..	..	35	6/3
Kattegat Øst for Læsø	3	I	9	4	7	1	..	2	I	11	6	8	1	2	..	..	28	21/1 5/3
Kattegat Øst for Anholt	5	2	10	4	8	3	..	..	..	13	5	1	5	8	..	..	32	5/3
Kattegat Vest for Anholt	3	..	12	17	2	..	..	2	..	7	9	8	12	..	..	..	36	23/3
Anholt Havn	27	..	13	..	..	..	..	33	7	26	20	13	21	..	..	..	80	25/12 24/8
Uden for Hals-Barre	13	I	3	..	..	..	..	3	..	II	5	2	2	I	..	..	21	26/12 7/3
Mariager-Fjord	4	..	..	I	..	I	..	8	106	2	10	..	..	2	101	5	120	28/11 8/4
Indløb til Mariager-Fjord . . . . .	..	..	..	..	..	..	..	2	104	..	..	93	I	6	6	..	96	106
Kattegat v. Rand. og Mariag. Fj. . . . .	..	..	3	I	..	8	2	3	..	..	..	..	6	9	2	..	17	20/12 1/2
Randers-Fjord . . . . .	..	..	8	15	4	3	3	..	3	83	2	14	103	..	..	..	84	119
Indløb til Randers-Fjord . . . . .	..	4	74	7	4	II	..	I	12	3	35	29	7	28	II	..	80	24/11 31/4
Grenaa Havn	3	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	3	18/1 10/1
Kattegat v. Grenaa . . . . .	..	..	5	6	..	..	..	..	..	3	2	3	3	..	..	..	11	18/1 22/2
Kattegat v. Hjelm	14	..	9	6	1	..	..	..	..	18	4	3	4	I	..	..	30	29/12 8/4
Ebeltoft-Vig	13	IO	I	..	9	..	..	6	24	..	..	22	8	33	..	..	63	26/12 28/3
Aarhus-Bugt	II	12	I	2	..	I	..	..	..	9	4	9	5	..	..	..	27	5/1 17/2
Aarhus Havn	21	I	17	..	..	..	..	..	..	19	7	12	..	..	..	..	38	26/12 28/2
Horsens Havn og Fjord	8	14	..	8	..	..	..	48	22	5	I	68	16	10	..	..	45	24/11 29/12
Favr. Vest f. Samsø	4	..	9	12	2	I	..	2	..	2	7	5	8	8	..	..	30	5/1 14/3
Favr. Syd f. Samsø	I	..	4	10	I	..	..	4	..	5	9	5	I	..	..	..	20	10/1 14/3
Odense Havn og Kanal . . . . .	..	..	I	4	..	..	..	9	56	..	6	62	..	2	..	..	38	22/12 6/3
Odense-Fjord . . . . .	..	..	7	14	..	..	..	20	57	I	3	70	..	15	..	..	62	23/12 24/12
Odense-Gab	3	5	27	28	30	5	5	I	..	6	38	17	..	34	9	..	104	24/11 23/3	
Mell. Revsnes og Samsø	I	..	15	16	12	3	..	I	2	5	15	5	7	18	..	..	50	12/1 23/3
Favr. ud for Sejrsø	9	I	10	4	..	..	..	..	..	4	10	7	3	..	..	..	24	3/1 15/8
Favr. ved Schultz'-Grund	I	..	2	I	..	..	..	..	..	1	2	..	I	..	..	..	4	22/12 22/3
Kattegat v. Hesselø	4	4	9	2	..	3	..	..	..	8	3	4	3	3	I	..	..	57
Sundet.										14	17	..	19	4	27	81	26/12 2/4
Favr. ud for Nakkehoved	2	..	22	2	10	5	..	2	2	II	4	10	16	4	..	..	45	1/1 31/3
Favr. ved Helsingør	4	3	16	12	27	7	..	..	I	..	14	2	18	27	9	..	70	27/12 7/4
Helsingør Havn	IO	35	12	..	..	25	..	3	I	..	18	22	8	24	14	..	86	20/12 6/4
Sundet v. København	4	I	20	9	8	23	I	8	8	9	14	7	9	32	II	..	82	30/12 6/4	
Afgang til Københavns Havn	3	I	14	16	6	3	18	4	2	5	10	7	22	7	18	7	71	26/12 6/4	
Københavns Havn	II	35	9	2	3	II	..	I	12	6	30	23	I	..	..	..	72	27/12 8/4
Drogden	29	2	27	4	7	..	2	..	8	16	19	I	21	9	I	..	79	30/12 2/4	
Flinterenden	I	I	8	12	28	..	..	..	7	2	..	20	..	I	5	..	57	30/12 2/4
Favr. Syd f. Drogden	28	4	17	4	5	..	8	..	15	14	17	..	19	4	27	..	81	26/12 2/4	

{Mangelf. Opl. p. Gr.
(af Fyrsk.s Indd.)

Tab. 5.

	Isforholdene State of ice												Besejlingsforholdene Navigation												Bemærkninger Remarks															
	Løs Sjæl. og Kvædderis	b	Sammenpakket	e	Sjæl. og Kvædderis	c	Spredt Drivis	k	Drivis	f	Pakis	i	Svær Drivis	h	Tynd Fastis	d	Svær Fastis	g	Med Is;	n	Skibsf. uhindret	o	Skif. vanskelig	p	Skibsf. vanskelig;	q	Skibsf. lukket	r	Skibsf. kun mulig	s	Skibsf. kun mulig	t	Rende holdes	u	Aantal Dage med Is	v	Første Ismeldung	w	Sidste Ismeldung	x
Sundet.																																								
Køge-Bugt ind. Del													Antal Dage (Number of days)													Antal Dage (Number of days)														
Køge-Bugt ind. Del .....	. 5	8	..	19	18	..	15	..	29	52	2	..	3	.	4	15	..	5	8	..	34	22	52	9	..	..	91	1/1	3/1	5/4	100	—					
Farv. v. Stevns	5	1	19	18	15	..	..	..	29	52	8	..	3	.	4	15	..	5	8	..	34	22	52	9	..	..	69	3/1	5/4	5/4	—	—			
Store-Bælt.																																								
Kallbg. Havn & indenf. Gisseløre	..	..	2	..	..	19	..	..	23	51	6	4	20	54	11	..	..	..	..	68	95	23/12	31/3	31/3	35	—	—	—	—	—	—	—	—	—	—
Kallundborg-Fjord	10	..	4	17	7	20	1	1	9	12	9	9	21	60	4/1	22/8	22/8	22/8	—	—	—	—	—	—	—	—	—	—	—				
St.-Bælt ud for Romsø	2	..	23	7	2	2	..	6	13	12	3	2	36	5/1	22/3	22/3	22/3	—	—	—	—	—	—	—	—	—	—	—				
Kerteminde-Bugt	3	12	5	17	3	9	..	..	..	..	6	2	..	20	21	..	..	..	..	49	1/1	17/3	17/3	17/3	—	—	—	—	—	—	—	—	—	—	—
Nyborg Havn	14	31	1	..	..	..	..	..	9	..	5	..	33	17	..	..	..	..	..	55	4/1	16/3	16/3	16/3	—	—	—	—	—	—	—	—	—	—	—
Nyborg-Fjord	3	25	10	..	..	8	..	..	7	..	..	12	17	16	8	..	..	..	..	53	27/13	16/3	16/3	16/3	—	—	—	—	—	—	—	—	—	—	—
Vesterrenden	4	8	23	24	4	..	..	..	..	..	8	16	18	13	8	..	..	..	..	63	4/1	22/3	22/3	22/3	—	—	—	—	—	—	—	—	—	—	—
Østerrenden	3	8	24	21	4	6	1	2	..	..	6	16	19	14	14	..	..	..	..	69	8/1	25/3	25/3	25/3	—	—	—	—	—	—	—	—	—	—	—
Korsør Havn	14	32	3	5	..	3	..	2	..	..	..	13	36	10	..	..	..	..	..	59	4/1	27/3	27/3	27/3	—	—	—	—	—	—	—	—	—	—	—
St.-Bælt v. Omø	6	..	54	7	3	2	..	..	1	..	13	14	9	22	14	1	..	..	..	73	1/1	4/4	4/4	4/4	12	—	—	—	—	—	—	—	—	—	—
St.-Bælt v. Albuen	12	2	28	15	4	..	..	..	..	..	..	4	26	24	7	..	..	..	..	61	31/12	22/8	22/8	22/8	—	—	—	—	—	—	—	—	—	—	—
Nakskov Havn .....	..	2	..	71	..	..	..	..	19	..	..	73	19	..	..	..	..	..	..	92	23/12	28/3	28/3	28/3	8	—	—	—	—	—	—	—	—	—	—
Nakskov-Fjord .....	..	..	8	..	..	..	..	..	4	88	..	..	11	70	19	..	..	..	..	93	100	23/13	81/3	81/3	15	—	—	—	—	—	—	—	—	—	—
Indløbet til Nakskov-Fjord	2	5	5	..	..	62	..	2	4	..	1	8	47	24	..	..	..	..	80	25/12	22/3	22/3	22/3	—	—	—	—	—	—	—	—	—	—	—	—
St.-Bælt v. Kelsnor	3	4	11	5	11	3	..	..	4	9	2	3	15	12	..	..	..	..	41	16/1	21/3	21/3	21/3	—	—	—	—	—	—	—	—	—	—	—	—
Lille-Bælt.																																								
Farv. ud for Åbelø	5	..	16	3	2	..	..	..	3	..	12	11	3	2	1	..	..	..	..	86	101	4/1	24/1	29/3	—	—	—	—	—	—	—	—	—	—	—
Vejle Havn og Fjord	2	6	..	2	10	27	54	..	14	38	49	86	101	21/11	21/13	21/13	30	—	—	—	—	—	—	—	—	—	—	—				
Bogense Havn	3	..	1	1	23	12	7	8	4	4	8	9	40	21/13	15/3	15/3	15/3	—	—	—	—	—	—	—	—	—	—	—	—			
Fredericia Havn	9	4	7	6	9	..	23	..	8	4	35	24/1	15/3	15/3	15/3	—	—	—	—	—	—	—	—	—	—	—	—				
Lille-Bælt v. Middelfart	12	..	27	5	12	16	6	34	18/1	13/3	13/3	13/3	—	—	—	—	—	—	—	—	—	—	—	—			
Kolding Havn og Fjord	5	10	2	7	73	2	5	15	72	3	89	97	28/1	29/3	29/3	30	—	—	—	—	—	—	—	—	—	—	—	—			
Lille-Bælt v. Assens	27	2	16	3	30	15	40	109	26/11	31/3	31/3	30	—	—	—	—	—	—	—	—	—	—	—	—			
Haderslev-Fjord	3	3	..	12	12	79	3	..	60	18	28	40	109	26/11	31/3	31/3	30	—	—	—	—	—	—	—	—	—	—	—	—		
Aarø-Sund	4	20	..	29	14	..	26	1	12	1	12	53	20/9	7/3	7/3	7/3	—	—	—	—	—	—	—	—	—	—	—	—	—		
Aabenraa Havn og Fjord	7	19	4	17	8	8	14	16	5	12	22	55	28/12	31/3	31/3	30	—	—	—	—	—	—	—	—	—	—	—	—	—		
Als-Sund	5	..	36	..	2	11	6	5	31	..	18	6	60	10/1	25/3	25/3	25/3	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Farv. Syd f. Als-Sund	1	..	19	7	6	1	4	14	..	22	3	13	22	..	3	63	18/1	25/3	25/3	25/3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Farv. ud for Skjoldnæs	4	1	17	6	8	6	..	5	3	8	7	8	12	9	6	50	4/1	22/3	22/3	22/3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Østersøen.																																								
Gulstav—Femern	3	4	10	7	12	3	4	7	3	5	18	10	43	16/1	23/3	23/3	23/3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Rødby-Havn	3	..	1	9	21	8	30	4	13	38	17	72	20/12	14/3	14/3	14/3	23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Femer-Bælt ud for Rødby	3	1	7	11	9	20	3	3	3	3	15	10	8	3	10	49	29/12	14/3	14/3	14/3	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Nysted-Bredning .....	..	..	3	..	4	12	14	9	47	..	7	7	2	14	59																							

	Isforholdene State of ice							Besejlingsforholdene Navigation										Bemærkninger Remarks							
	Løs Sjæl- og Kvæderis	b	e	c	k	f	i	Pakis	Skrueis	Tynd Fastis	Med Is;	Skibsf. uhindret	Skibsf. vanskelig for Sejliske	p f. Sejls. k. m. Bugs.	Skibsf. lukket for Sejliske	Skibsf. kun mulig for kraft. Damps.	Skibsf. kun mulig ved isbryderhj.	Rende holdes u aaben m. Isbryder	Antal Dage med Is Number of days with ice	Første Ismedding First ice report	Sidste Ismedding Last ice report	Isens største opg. Tylk. i cm Greatest noted thick. of ice cm			
	Sammenhæftet	Sjæl. og Kvæderis	Spredt Drivis	Drivis	Svær Drivis						n	o	p	q	r	s	t	u	102	102	102	109	109	106	
Smaalandsfarvandet.																									
Guldborg-Sund udf. Nykøbing	..	..	..	..	..	..	..	22	80	..	..	22	2	55	5	18	..	102	28/12	2/4	25	..	..	..
Guldborg-Sund nordl. Del	..	..	..	..	..	..	..	15	87	..	..	2	..	31	20	49	..	102	28/12	2/4	25	..	..	..
Farvandet Nord for Guldborg.	..	..	..	..	..	..	..	4	98	..	..	2	..	27	30	43	..	102	23/12	4/4	80	..	..	..
Storstrøm .....	..	..	2	25	9	7	5	6	42	..	..	11	18	20	41	6	..	96	28/12	4/4	30	..	..	..
Vordingborg Havn .....	..	..	..	..	..	..	..	10	99	..	5	.	4	.	4	96	..	109	23/12	9/4	34	..	..	..
Kallehave—Stege.	I	..	..	..	2	..	9	1	96	I	2	I	4	40	57	4	23	109	21/12	7/4	—	..	..	..
Bøgestrøm .....	..	..	..	..	8	..	..	1	97	..	9	..	6	..	..	91	..	106	1/12	3/4	35	..	..	..
Farvandet S. for Fyen.																									
Faaborg Havn og Fjord	5	5	5	2	2	8	13	13	46	3	3	33	15	37	5	3	79	99	25/12	6/4	—	..	..	..
Svendborg Havn .....	..	35	2	..	..	..	..	10	..	..	47	..	..	..	..	..	47	47	27/12	15/3	—	..	..	..
Svendborg-Sund østl. Del.	..	..	43	..	..	..	..	..	..	43	..	..	..	..	..	..	..	43	14/1	15/3	—	..	..	..
Rudkøbing Havn	14	9	..	..	..	..	..	6	58	14	19	..	7	45	2	..	..	87	20/12	23/8	31	..	..	..
Rudkøbing-Løb nordl. Del	..	..	7	13	..	5	..	7	48	.	7	15	5	34	19	..	..	80	26/12	28/8	—	..	..	..
Marstal Havn	I	I	4	2	2	2	4	..	5	93	2	4	I	15	11	27	44	104	21/12	2/4	30	..	..	..
Farvandet ved Marstal	I	2	4	2	2	4	..	1	87	4	7	..	12	50	..	30	..	103	22/12	2/4	21	..	..	..
Farvandet Nord for Skjoldnæs	5	3	17	7	17	4	..	2	8	10	17	5	6	17	8	..	..	63	4/1	28/3	—	..	..	..
Ærøskøbing—Drejø .....	..	3	2	17	18	..	9	52	..	3	11	38	23	..	26	..	..	101	25/12	3/4	190	..	..	..

Tab. 6. Oversigt over Inddragningen af danske Fyrskibe under Isforhold.

Oplysningerne begynder 1879*
Withdrawal of Danish light-ships during ice.
The reports commence 1879*).

	Vinteren 1923—1924		Antal Dage fra Station paa Grund af Is Number of days off the station on account of ice	Har siden 1879 været inddraget Withdrawn since 1879			Bemærkninger Remarks
	Inddraget withdrawn	Udlagt replaced		i Antal Vintre Number of winters	Alt Dage Total number of days	Antal Dage pr. Vinter med Is Number of days pr. winter with ice	
Horns-Rev.....	—	—	—	1	3	3	
Vyl	—	—	—	1	12	12	
Graadyb.*	—	—	—	2	30	15	
Skagens-Rev	8/1 ¹ , 28/1 ¹ , 14/2 ²	15/1 ¹ , 80/1 ¹ , 20/2 ²	25	14	464	33	*) { Udlagt i 1906. Established in 1906.
Læsø-Trindel	8/1 ¹ , 22/1 ¹ , 12/2 ²	16/1 ¹ , 2/1 ¹ , 7/3 ²	48	15	526	35	
Læsø-Rende	2/1 ¹ , 15/1 ¹ , 9/2 ²	29/1 ¹ , 18/1 ¹ , 5/3 ²	30	16	536	33	
Østre-Flak.*	2/1 ¹ , 13/1 ¹ , 27/2 ²	8/1 ¹ , 21/1 ¹ , 5/3 ²	48	6	187	32	*) { Udlagt i Juli 1908. Established in July 1908.
Anholt-Knob	2/1 ¹ , 22/1 ¹ , 1/1 ¹	15/1 ¹ , 20/1 ¹	79	17	634	37	
Schultz-Grund	3/1 ¹ , 18/1 ¹	1/1 ¹ , 6/1 ¹	51	16	620	39	
Lappe-Grund.*	1/1 ¹ , 22/1 ¹ , 9/2 ² , 25/1 ¹ , 1/4 ²	20/1 ¹ , 24/1 ¹ , 8/1 ¹ , 7/4 ²	85	17	495	29	*) { Oplysningerne begynder 1883. The reports commence 1883.
Drogden	1/1 ¹ , 17/1 ¹ , 9/2 ²	16/1 ¹ , 21/1 ¹ , 8/1 ¹ , 7/4 ²	90	17	699	41	
Gedser-Rev	4/1 ¹ , 16/1 ¹ , 24/1 ¹ , 11/2 ²	14/1 ¹ , 22/1 ¹ , 8/1 ¹ , 24/1 ²	68	14	631	45	
Halskov-Rev.*	8/1 ¹ , 18/2 ²	3/1 ¹ , 28/3 ²	75	3	120	40	*) { Udlagt i Juni 1921. Established in June 1921.

Tab. 7. Sammenligning mellem de forskellige Vintre.
Comparison between the various winters.

Antal Dage med Is for: Number of days with ice in:	1906 —07	1907 —08	1908 —09	1909 —10	1910 —11	1911 —12	1912 —13	1913 —14	1914 —15	1915 —16	1916 —17	1917 —18	1918 —19	1919 —20	1920 —21	1921 —22	1922 —23	1923 —24
Aabne Farvande	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	30.6	2.5	40.3
Havne ved aabent Farvand	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	34.4	10.1	51.2
Tildels lukkede Farvande	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	37.5	8.2	71.3
Havne ved indelukkede Farvande	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	52.7	20.5	97.6
Indelukkede Farvande	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	52.9	23.8	111.3
Alle Stationer	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	39.4	11.0	68.0
Middeltal af Kuldemængde for Stat. i Tab. 2	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	165.4	57.5	238.8

THE STATE OF THE ICE IN THE DANISH WATERS 1924.

Dagene omkring 10 Marts.
The days c. 10 March.

