



Väylävirasto  
Trafikledsverket

Winter 2023-2024

# Finland's winter navigation

Instructions for winter navigation operators



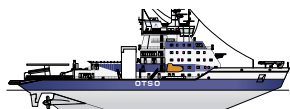
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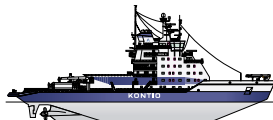
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Icebreaker	Call Sign	E-Mail	Mobile GSM Phone
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Calypso + Saimaa	OJSY	tug.calypso@alfonshakans.com	+358 (0) 400 413 938

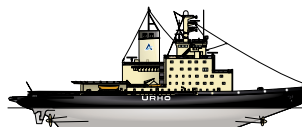
All icebreakers are keeping watch on VHF Channel 16 and their individual VHF Channel



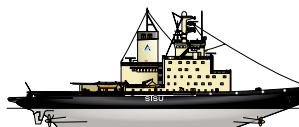
Otso 1986  
L. 99.0m  
B. 24.5m  
Power  
15 000kW



Kontio 1987  
L. 99.0m  
B. 24.2m  
Power  
15 000kW



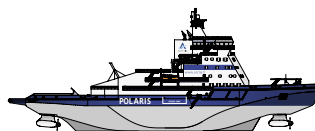
Urho 1975  
L. 105.0m  
B. 23.8m  
Power  
16 200kW



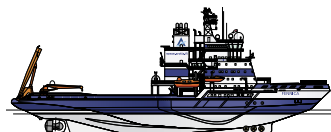
Sisu 1976  
L. 105.0m  
B. 23.8m  
Power  
16 200kW



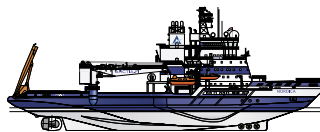
Voima 1954  
L. 84.0m  
B. 19.4m  
Power  
10 200kW



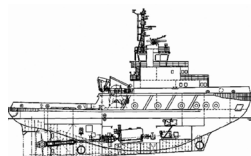
Polaris 2016  
L. 110.0m  
B. 24.4m  
Power  
19 000kW



Fennica 1993  
L. 116.0m  
B. 26.0m  
Power  
15 000kW



Nordica 1994  
L. 116.0m  
B. 26.0m  
Power  
15 000kW

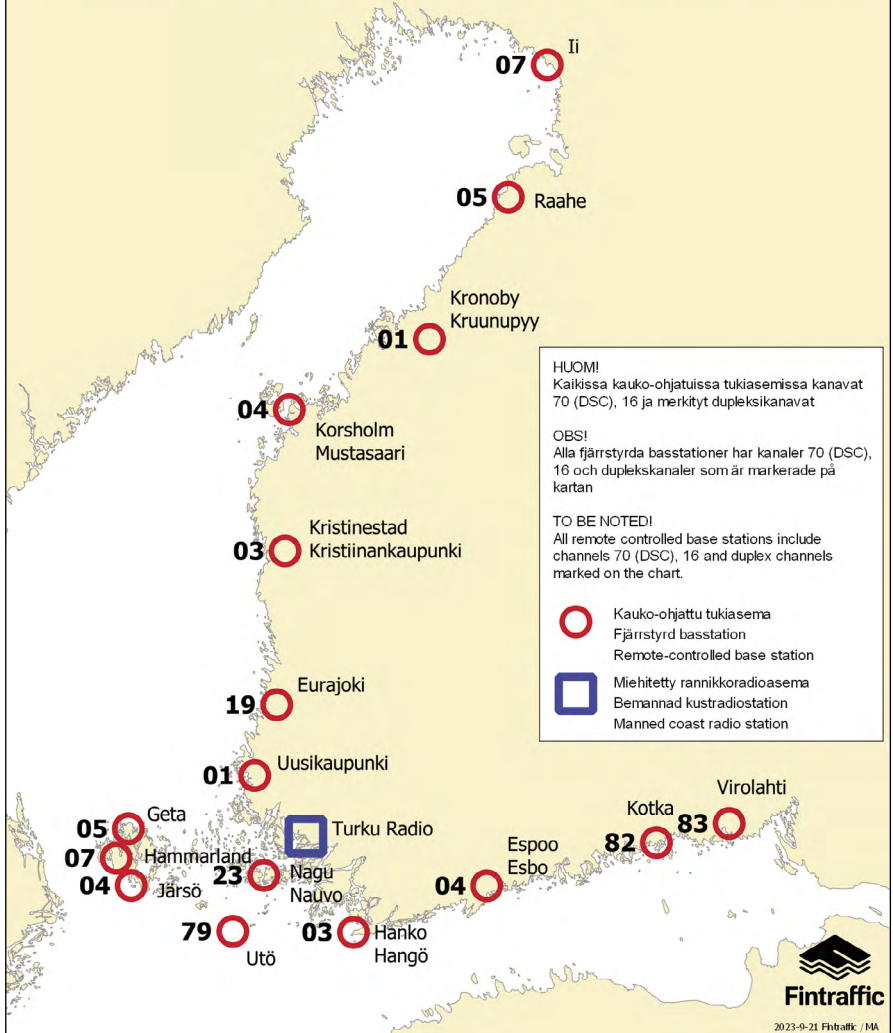


Zeus of Finland 1995  
L. 45.1m  
B. 14.6m  
Power 5 416kW



Calypso Saimaa  
combination 2020  
L. 40.8m  
B. 12.6m  
Power 2 600kW

Turku Radion työskentelykanavat radiopuhelinliikenteessä  
 Turku Radios arbetskanaler för radiotelefoni  
 Working channels of Turku Radio for voice communication



# CONTACT INFORMATION

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## Turku Radio

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VHF: See separate map

## Bothnia VTS

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VHF: 67

## **Saimaa VTS**

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## **GOFREP Traffic Centres, contact information:**

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fax: +372 620 5766  
VHF: 61 (81)

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Fax: +7 812 380 70 20  
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Internet: [www.sjofartsverket.se/winternavigation](http://www.sjofartsverket.se/winternavigation)

## Ice Info

Telephone: +46 10 492 76 00  
Email: ice.info@sjofartsverket.se  
VHF: 82

## Providers of icebreaking services

### Arctia Icebreaking Oy

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00160 HELSINKI, FINLAND

Service number (24 h): +358 46 876 7050

Email: icebreakers@arctia.fi  
Internet: [www.arctia.fi](http://www.arctia.fi) (information on icebreakers, crew change days)

### Alfons Håkans AS, Finnish Branch

Hevoskarintie 23  
20100 TURKU, FINLAND

service number (24 h): +358 50 63304  
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Email: office.finland@alfonshakans.com  
Internet: [www.alfonshakans.com](http://www.alfonshakans.com)

### Finnish Meteorological Institute:

Ice Service of the Finnish Meteorological Institute  
PO Box 503 (Erik Palménin aukio 1)  
00101 HELSINKI, FINLAND

Telephone: +358 29 539 3464 (Arola, Tollman, Vainio)  
Email: iceservice@fmi.fi  
Internet: <https://en.ilmatieteenlaitos.fi/ice-conditions>

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**This is an unofficial translation. FTIA takes no responsibility to its correctness. The Official texts are in Finnish and Swedish only.**

# 1. GENERAL INFORMATION

The Maritime Unit at the Finnish Transport Infrastructure Agency (FTIA) has compiled these general instructions for winter navigation.

## 1.1 The instructions and their objectives

The FTIA has prepared the following instructions for winter navigation in cooperation with the industry, shipping companies, charterers, vessels, icebreakers, pilots, Finnish Meteorological Institute and the Vessel Traffic Services. All parties shall assume their responsibility for the Finnish winter navigation and arrange their import and export transport on ships which comply with the ice restrictions in force, undertake to comply with this Guide and are manned by competent and qualified crew.

The objective of these instructions is, that Finnish foreign trade and domestic waterborne transport are smoothly functioning, and socio-economically viable and international competitiveness is ensured also in winter, with short waiting times.

## 1.2 Assistance of winter navigation

According to the Act on the Ice Classes of Ships and Icebreaker Assistance (1121/2005), the FTIA is responsible for the availability of icebreaker assistance in Finnish waters when the ice conditions so require. Assistance is provided in all class 1 approach channels with a design depth of 8 metres leading to a winter port designated by the FTIA and in other destinations specified by the FTIA.

The FTIA is also responsible for the availability of icebreaker assistance outside Finnish waters, if assistance is necessary to safeguard Finnish foreign trade or is based on a cooperative agreement concluded with another state.

Assistance in port areas is the responsibility of the ports in question.

### **Winter navigation assistance is free of charge.**

The FTIA has concluded agreements with Arctia Icebreaking Ltd, Alfons Håkans AS Finnish Branch and other private towing companies. The FTIA leads and monitors the implementation of the icebreaking services and follows up client satisfaction in cooperation with the Vessel Traffic Services, Baltic Sea icebreaking organisations and the masters of the coordinating icebreakers.

Icebreaking services include the assistance of vessels entitled for icebreaker assistance and the related towing.

Charges for towage in connection with salvage operations and other related assistance are based on separate agreements.



## 1.3 Vessels entitled to icebreaker assistance

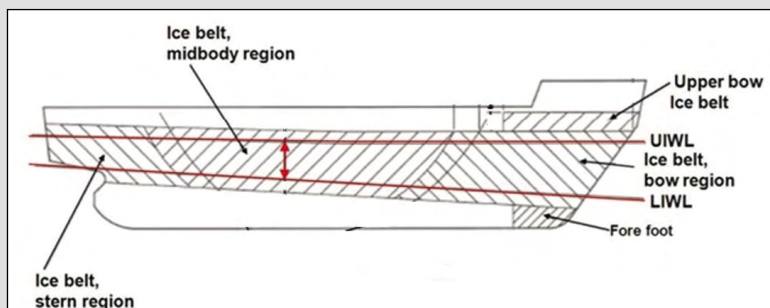
Provisions on icebreaker assistance are contained in the Act on Ice Classes of Ships and Icebreaker Assistance (1121/2005). Icebreaker assistance is given to vessels, which meet the assistance restrictions that the FTIA has imposed on vessels calling at the relevant port.

Vessels must also comply with the requirements on construction and engine output for winter navigation (ice class regulations) and pledge to comply with these instructions.

**The vessel must always be loaded according to the ice strengthening area assigned to it (UIWL/LIWL) in order to receive icebreaker assistance.**

**The vessel must meet the following requirements when navigating in an area where icebreaker assistance is provided:**

- When navigating in ice, the vessel must always be loaded **to the draught required for its ice class (between the upper and lower ice waterlines [UIWL and LIWL])**. (Image Traficom)



- The propeller is to be completely submerged and if possible, entirely below the ice.
- The cooling-water system is to be designed and used so that the supply of cooling-water is ensured when navigating in ice, even **when using maximum engine power** according to the Ice Class Certificate.
- **The vessel must use at least the engine power specified for its ice class** if the ice conditions, the icebreaker or the pilot so require.

The master of an icebreaker may for justified reasons refuse to assist a merchant vessel. A justified reason is for example a vessel whose equipment is not operational before the assistance starts, or whose hull, engine output, equipment or manning is such that there is cause to believe that navigation in the prevailing ice conditions will endanger the safety of the vessel, or that the vessel does not meet the ice class requirements for example in terms of its draught (UIWL/LIWL).

In individual cases, the Head of the Maritime Unit can postpone the assistance of a vessel, even though the vessel meets all requirements regarding assistance restrictions.

**The reason for a postponement can for example be that the vessel has not committed to comply with these instructions, the vessel causes unacceptable delays for other traffic, the prevailing ice conditions are exceptionally severe or repeated written reports from ice-breaker masters about a vessel being unsuitable for winter navigation.**

Tugs towing barges are considered as ice class III vessels and are thus not entitled to icebreaker assistance.

### 1.3.1 The publication Finland's Winter Navigation, compliance with instructions

**The FTIA posts these instructions on its website every year and informs about the publication in a press release.**

During the icebreaking season 2023–2024 all vessels arriving for the first time of the winter season to a Finnish or Swedish assistance area will be asked the following question:

**Do you accept and commit to follow the Finnish Winter Navigation rules, stated in this publication?**

The answer to the question is 'yes' or 'no'.

The answer 'yes' does not incur any expenses for the vessel.

The answer 'no' will affect the provision of future icebreaker assistance to Finnish ports.

**The answers can be sent in advance from the vessel or by the shipping company by email to Turku Radio: [turku.radio@fintraffic.fi](mailto:turku.radio@fintraffic.fi), which forwards the information to other authorities. Shipping companies can send a combined answer in advance for all their vessels operating in the area.**

The vessels which have not submitted their answer in advance will be asked the question by email, AIS text message or by VHF phone. Vessels bound for the Gulf of Bothnia or the Archipelago Sea will be asked the question by Turku Radio and vessels bound for Finnish ports in the Gulf of Finland and the Lake Saimaa area will be asked the question by Helsinki Traffic and the Saimaa VTS.

A negative answer will be noted, and the Vessel Traffic Services will inform the FTIA's Winter Navigation Unit. **A negative answer will affect the provision of assistance in the future.**

This question is asked to ensure that vessels' crews have read the publication "Finland's Winter Navigation 2023–2024" in advance, and that they accept and comply with the instructions given in the publication.

## 1.4 Order of assistance

The general rule is that vessels are not prioritised, with the exception of vessels in danger, which are always assisted first. The master of the icebreaker may also change the assistance order due to traffic or for technical reasons by for example forming effective assistance convoys or by approving a proposal by the port to change the order of assistance.

### 1.4.1 Securing transports critical for the emergency supply

The FTIA may elect to prioritise transports critical to Finland's emergency energy or food supply or essential industry after consultation with the National Emergency Supply Agency.

## 1.5 Reporting obligations by ports and shipping companies

### 1.5.1 Ports

Ports or ship agents submit preliminary notifications on their vessel traffic to the icebreakers once a week and update the vessel traffic situation when necessary in order to maintain the information regarding it as up-to-date as possible. The reporting obligations start when the first winter assistance restrictions are imposed for the port in question and continue until the last assistance restrictions have been lifted.

### 1.5.2 Shipping companies and agents

The shipping companies or their agents are requested to enter data about vessel timetables into PortNet -system and to update changes in the data as often as possible. This is in order to ensure timely icebreaking services and smooth traffic.

***The shipping companies or their agents must ensure that the vessel has confirmed Finnish ice class well before calling Finnish port having assistance restrictions.***

**The shipping companies or agents must also ensure that the publication 'Finland's Winter Navigation' is forwarded to all of their vessels in good time before the vessels enter the area.** Inquiries from foreign countries concerning ice conditions, assistance restrictions and traffic should be directed to the vessel's Finnish agent. The information on conditions and assistance restrictions is also available on the [Baltice.org](http://Baltice.org) website.

# 2. ASSISTANCE RESTRICTIONS AND EXEMPTIONS

## 2.1 Assistance restrictions

For safety reasons and for reasons arising from the concentration of traffic in certain areas, the FTIA may restrict the provision of icebreaker assistance in specific areas and to specific ports. The FTIA imposes such assistance restrictions on the basis of weather and ice conditions, and the vessel's ice class and deadweight. The assistance restrictions are based on the HELCOM recommendations. The FTIA may also take into account the vessel's engine output and the amount of cargo on board if extremely difficult ice conditions so require. In such cases the assistance restrictions have been supplemented by an additional restriction on cargo for the port in question: For example, vessels must have a load of at least 2000 tonnes of cargo to be loaded or unloaded, or both.

## 2.2 Imposing of assistance restrictions

The restrictions on assistance enter into force five (5) days after their date of issue, except for relaxations, which enter into force immediately. The assistance restrictions in force can be found on the website: [www.baltice.org](http://www.baltice.org)

### Assistance restrictions in use during the 2023-2024 icebreaking season:

Indication	Assisted ice classes and minimum dwt
II 1300	IAS, IA, IB, IC and II: deadweight 1300 dwt
II 2000	IAS, IA, IB, IC and II: deadweight 2000 dwt
IB 2000 / II 3000	IAS, IA, IB deadweight 2000 dwt / IC, II deadweight 3000 dwt
I 2000	IAS, IA, IB, IC: deadweight 2000 dwt
IB 2000	IAS, IA, IB: deadweight 2000 dwt
IA 2000	IAS, IA: deadweight 2000 dwt
IA 4000	IAS, IA: deadweight 4000 dwt

Other assistance restriction indications may be used, if FTIA so considers.

**Bothnian Bay:** The first assistance restrictions of the winter season – ice classes I and II, with the deadweight 2000 dwt – for the ports in the northern part of the Bothnian Bay are normally imposed in December. The maximum restriction has usually been IA 4000 dwt in combination with the cargo restriction of 2000 tonnes.

**Bothnian Sea:** The first assistance restrictions - ice classes I and II with the dead-weight 2000 dwt - are normally imposed in January-February. During an average winter, the maximum restriction is IB 2000 dwt.

**Archipelago Sea:** The first assistance restrictions II 2000 dwt have been imposed somewhat later than in the Bothnian Sea although the restrictions are the same. During an average winter, the maximum restriction is IB 2000 dwt.

**Gulf of Finland:** The first assistance restrictions - II 2000 dwt - have normally been imposed at the end of January. The maximum restriction during an average winter is IA 2000 dwt.

**Lake Saimaa area:** The minimum restriction applied has been II 1300 dwt and the maximum restriction IA 2000 dwt.

Tables showing the first and last dates on which the restrictions are in force can be found in the website: <https://vayla.fi/en/transport-network/waterways/winter-navigation>

## 2.3 Equivalence between ice classes

Information on the equivalence of Finnish ice classes to the ice classes of recognized classification societies, and on the data and documents needed to confirm the ice class of a vessel can be found on the website: <https://www.traficom.fi/en/transport/maritime/ice-classes-ships>

## 2.4 Exemptions

In accordance with section 10(3) of the Act on the Ice Classes of Ships and Icebreaker Assistance (1121/2005), the FTIA may **in individual cases**, on application, grant a vessel that is sailing to a port or an area to which assistance has been restricted, the right to icebreaker assistance if:

1. **ice conditions have temporarily eased**
2. **it is a question of a special transport, urgent energy supplies or the threat of a production shut-down in a factory, or**
3. **the vessel would otherwise be entitled to assistance, but its dead-weight is not more than five (5) per cent below the required dead-weight**
4. **the vessel has started its voyage, which under normal conditions would last no more than a week, already on the day when the assistance restrictions were raised and the arrival of the vessel is not considerably delayed from the point of time when the former assistance restrictions were valid.**

Applications for exemptions must be sent by email to the address: [winternavigation@ftia.fi](mailto:winternavigation@ftia.fi).

**The application must include:**

- reason for application for exemption
- ETA
- vessel's name
- IMO number
- ice class
- deadweight
- engine output
- year of build

For a decision made upon an application for exemption a charge is collected as provided in the Act on Criteria for Charges Payable to the State (150/1992).

Applications for exemption must be submitted to the FTIA at least three working days before the vessel arrives in the assistance area. The FTIA aims to process applications submitted before 12.00 noon by the end of office hours on the day of submission, and applications submitted later by the end of office hours the following day.

The PDF form that should be completed for the application can be found at: <https://vayla.fi/en/transport-network/waterways/winter-navigation>

## 3. MASTER'S CHECKLIST

### Before entering ice-covered waters

- Make sure that the vessel's ISM manual includes instructions for safe navigation in ice.
- Ensure that the vessel's ice classification certificate or annex containing ice class information (ice class draughts and minimum engine power) is on-board and available.
- **The vessel must use at least the engine power specified for its ice class if the ice conditions, the icebreaker or the pilot so require.**
- **When assisted by an icebreaker and/or following another vessel in ice, always keep the propulsion machinery in immediate readiness for even aggressive engine manoeuvres.**
- **Ensure that the vessel at all is times loaded/ballasted between LIWL and UIWL (Fore and Aft) and that the propeller is completely submerged. Any neglect in this respect will cause assistance to be delayed or denied. (LIWL = Lower Ice Waterline, UIWL = Upper Ice Waterline)**

- Make sure that there is sufficient supply of fresh water and bunker in case of possible delays caused by ice.
- Start listening to the daily ice reports well in advance. Or check <https://Bal-tice.org>.
- For observing the ice features, adjust the X -band (9GHz / 3cm) radar image to show ice tracks; increase GAIN and remove all clutters until the ice tracks and other ice features are clearly displayed in the radar image. S-band (3GHz / 10cm) radar should be tuned normally and reserved to traffic monitoring and collision avoidance.
- Check that your VHF radio is operative and find out in advance which channel is used by the icebreaker operating in the area.
- Check that the pipes on deck are drained of water.
- Check that the sounding and air pipes of the ballast tanks are emptied of water.
- Check that anchor, mooring and other equipment which may be used in ice conditions are covered by adequate tarpaulins to prevent icing.
- Keep the pilot ladder in a sheltered place and, before use, make sure that it is in good condition and ice-free.
- **For preventing icing, lower the ladders only as close as possible to Pilot boarding area.**
- **Make sure that the searchlights are working.**
- **Move the anchors astern or lift them onto deck, if there is even a slight possibility that they may come into contact with the icebreaker's towing notch (see guidelines). Any neglect in this respect will cause assistance to be delayed.**
- **Check that cooling water is available when navigating in ice.**
- Avoid colliding with loose ice floes at high speed and check your open-water speed.
- Check the ice waypoints\* provided by the icebreaker/VTS/GOFREP/ICE INFO when navigating in ice.

### \*ICE Waypoints

In ice-covered areas ice waypoints are provided to all vessels, these ice waypoints indicate the assistance route. The ice waypoints are set in order to help vessels navigate more easily and safely in ice conditions and in order to enable vessels to navigate unassisted for as long as possible. Vessels obtain the waypoints for ice navigation via ICE INFO, VTS/GOFREP or from the icebreakers.

Since the icefield is usually in constant move, the vessels must see the ice waypoints as an guide and the actual easy track can be located within 1 to 2 miles range of the given points.

Failure to follow the ice waypoints may lead to delayed icebreaker assistance. Vessels are, however, at all times responsible for their own safe navigation.

## 4. NAVIGATION IN ICE

### 4.1 Risks when navigating in ice

During winter navigation, vessels are exposed to greater risks than when sailing in ice-free waters. When navigating in broken ice fields, sailing in convoy or preparing for towage, vessels cannot always keep an adequate distance to each other. This entails an increased risk of collision between the vessels involved.

**The FTIA will not assume any liability for delay, damage or other loss or cost caused to a ship, its crew, its passengers, its cargo, its charterer or carrier within the scope of, in connection with, or resulting from icebreaker assistance services provided by the FTIA. Nor can the responsibility be laid on the subcontractors or contracting parties used by the FTIA to produce the icebreaking services in connection with or based on the icebreaking services provided by these.**

**Assistance and advice are offered to a vessel at its own risk and the vessel being assisted is solely responsible for its navigation. Under chapter 7, section 2(1) of the Finnish Maritime Act (674/1994), a valid insurance cover is mandatory for vessels navigating in Finnish territorial waters or inland waterways, when arriving to or leaving Finnish ports or anchorage and waiting areas, or if the vessel is used for some other purpose than transport in Finnish territorial waters. Finnish waters mean the territorial waters and inland waterways.**

### 4.2 Reporting

#### 4.2.1 Vessels bound for the Bothnian Bay or the Bothnian Sea

Vessels bound for Finnish or Swedish ports in the Bothnian Bay or the Bothnian Sea in which assistance restrictions apply, must report as follows:

Reporting position:	when passing latitude 60° 00' N*
Call sign:	ICE INFO
Call channel:	VHF channel 82 (or tel. +46 10 492 76 00)
Report:	– name of the vessel – nationality – destination and ETA – speed
Language:	Swedish or English
Email:	ice.info@sjofartsverket.se

\* If required due to the ice conditions, the position for reporting can be transferred farther to the south.



ICE INFO provides vessels with the advance instructions of the coordinating icebreaker or establishes contact via VHF between vessels and the coordinating icebreaker.

Vessels bound for a Finnish or Swedish port in the Kvarken or the Bothnian Bay must give an advance report to the Bothnia VTS 20 nautical miles before Nordvalen Lighthouse (63° 32,15' N 20° 46,60' E) on VHF channel 67. The Bothnia VTS forwards the information it has received from the coordinating icebreaker to the vessels, i.e. navigational instructions, waypoints, as well as the position, name and VHF working channel of the icebreaker.

#### 4.2.2 Vessels bound for the Gulf of Finland

Vessels of 300 GT or more sailing in the Gulf of Finland are required to report to the GOFREP Traffic Centre in question. GOFREP Master's Guide (pdf) can be found on the website [https://www.fintraffic.fi/sites/default/files/2023-01/GOFREP\\_MG\\_2023\\_01\\_20.pdf](https://www.fintraffic.fi/sites/default/files/2023-01/GOFREP_MG_2023_01_20.pdf)

The GOFREP Traffic Centre forwards the information it has received from the coordinating icebreaker to the vessels, i.e. navigational instructions, waypoints as well as the position, name and VHF working channel of the icebreaker.

#### 4.2.3 Vessels bound for the Lake Saimaa area

The ship agents must send the advance information of the vessels and the vessels' reply concerning compliance with these instructions by email to the Saimaa VTS: [saimaa.vts@fintraffic.fi](mailto:saimaa.vts@fintraffic.fi).

### 4.3 Proceeding in ice

1. A vessel navigating in ice without assistance must follow the instructions given via **Turku Radio, ICE INFO, VTS, GOFREP and by the icebreakers** and should strive to proceed in the ice without assistance for as long as possible. The vessel must also be able to navigate in thin ice in a broken ice track without icebreaker assistance. For this reason, the vessel must always have sufficient engine output available. **The minimum is considered to be the minimum engine power required for the ice class of the vessel.**
2. The Vessel Traffic Services (VTS/GOFREP) are responsible for the vessel traffic management and information in their respective area.
3. The icebreaker is responsible for the icebreaker assistance provided to vessels and for coordinating the traffic in an ice field.
4. The vessel must monitor the traffic channel of the local VTS Centre and the icebreaker channel simultaneously.
5. A vessel stuck in ice must notify the icebreaker of its position without delay.
6. VTS/GOFREP informs and manages the traffic in accordance with the instructions given by the coordinating icebreaker.

## 4.4 Instructions for ice navigation in fairways in the archipelago

All vessels using the fairways in the archipelago are required to follow the opened ice tracks whenever possible and avoid unnecessarily breaking the ice fields. Unnecessary breaking of the ice fields can constitute a danger to other traffic as it causes pressure in the fairway area and may cause ice tracks to shift in narrow passages.

Upon request, the regional VTS Centre gives instructions regarding areas in which breaking ice fields for the purposes of anchorage or waiting does not cause significant harm.

## 4.5 Instructions for assisted vessels

- During hours of darkness, icebreakers display a fixed blue all-around light at the top of the mast.
- A careful watch must be kept for signals from the icebreaker or any other assisted vessel in the convoy and a continuous watch must be maintained on the agreed VHF working channel, as well as on channel 16.
- The vessel's propulsion machinery must be ready for rapid manoeuvres at all times. Any problems arising in the assisted vessel relating to engine power or manoeuvring capabilities must be reported to the icebreaker without delay.
- In order to avoid collisions, a vessel in convoy must inform the icebreaker without delay on the dedicated assistance channel if it stops or significantly reduces its speed.
- Finnish icebreakers are equipped with two rotating red warning lights, installed one upon the other, which are lit when the icebreaker stops unexpectedly or when it significantly reduces its speed. In such cases, the master of the assisted vessel must take all possible measures to avoid collision.
- If the vessel stops due to the ice conditions, the searchlight must be switched off for as long as the vessel remains stationary.
- If the vessel sustains or is suspected to have sustained damage, the icebreaker must be informed about this immediately. Having reported to the icebreaker does not exempt the vessel from reporting to the authorities or the shipping company.

A vessel that does not follow the instructions given by the icebreaker or the ice class requirements (e.g. UIWL/LIWL) cannot expect to be assisted.

## 4.6 Instructions for towage

1. In difficult ice conditions, towing may be the only means of ensuring safe and effective assistance.
2. The vessel must be prepared to make fast or cast off the icebreakers towing wire at any time. The icebreaker decides when a vessel is taken into tow.

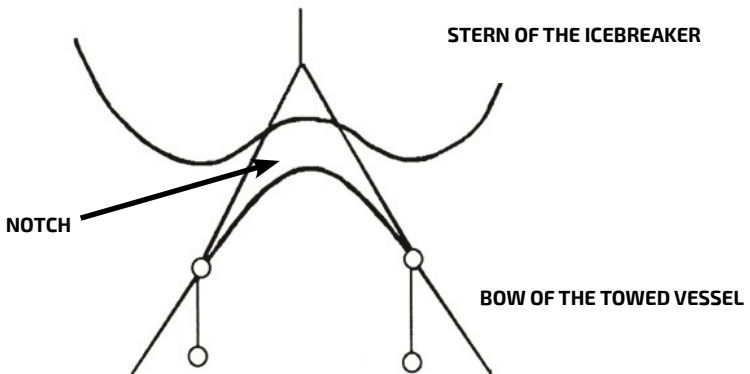
3. The vessel towed by an icebreaker may only use its propulsion machinery in accordance with the instructions given by the icebreaker. The vessel's main machinery must be ready for rapid manoeuvres.
4. During towage, the vessel in tow must use manual steering. By steering manually, the vessel should try to stay in line with the icebreaker.

## Towage

The method normally used is notch towing. This means that the merchant vessel's bow is brought into the towing notch of the icebreaker. The icebreaker will also hand over two wires which are to be fastened to the merchant vessel's bits which have been designed to withstand the stresses of towing. **Note! Roller fairleads can't stand the mechanical stress during towing.**

## Notch towing

Notch towing is applied when the icebreaker and the towed vessel are connected as below:



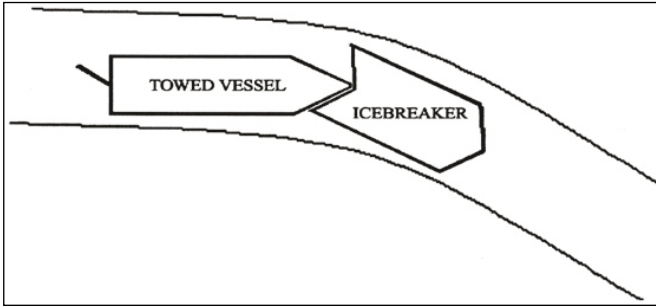
## The hull of the towed vessel is always acting as an active rudder of the icebreaker

If the towed vessel has sufficient engine power and follows the instructions of the icebreaker, it acts as an active rudder steering in the right direction. Proper use of the rudder ensures safe towage, helps avoid accidents and increases towage speed.

When proceeding straight ahead the vessel should keep its masts in line with the masts of the icebreaker.



If the vessel cannot keep the engine output as high as required or it is affected by rudder problems, the icebreaker should be notified immediately, so that it can reduce its speed.



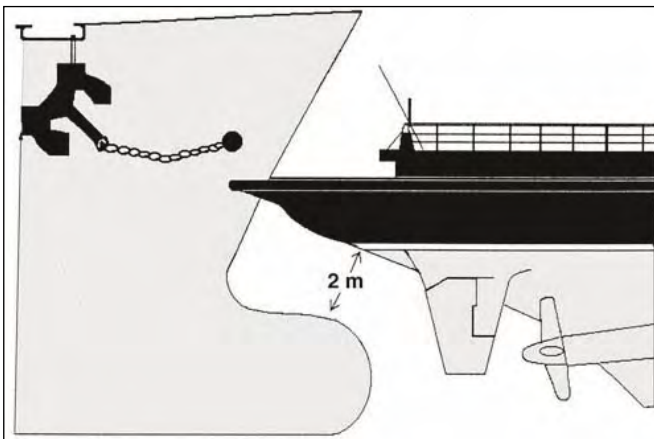
### Altering course

If the icebreaker asks the vessel to help with altering the course, the helm has to be turned enough in the opposite direction of the one normally used, as the vessel's hull is acting as the rudder of the whole combination.

### Special measures for safe towing:

Vessels with a bulbous bow should be trimmed so that the distance between the top of the bulb and the hull of the icebreaker is at least two (2) meters.

If the ship's anchors are located on the outside of the hull and could thus come into contact with the towing notch, they must be pulled back or lifted onto the deck well in advance before the assistance.

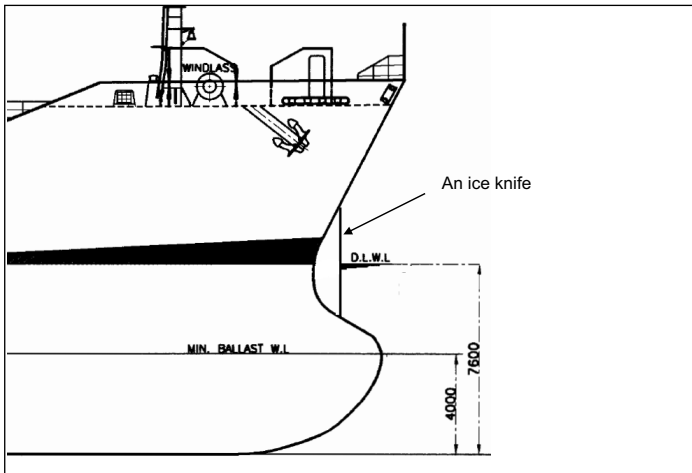


## Factors complicating towage:

The shape of the vessel's bow greatly influences the towage. The principle is that in cases where an unsuitable bow complicates the towage or makes it virtually impossible, the vessel is only assisted when this can be carried out without towage.

**The master of the icebreaker makes the final decision on towage.**

Some merchant vessels have an ice knife fitted above the bulb. This ice knife is a vertical plate which presents a sharp edge against the notch at certain draughts. Circumstances permitting, the assistance of vessels equipped with ice knives will be carried out without towage so that damage to the fendering at the icebreaker notch can be avoided.



## 5. PILOT BOARDING IN ICE CONDITIONS

- Pilots are ordered through Finnpiilot's Pilot Order Service, Pilot online.
- The pilot boarding position may deviate from its actual position during the open water season. If required, the local VTS Centre provides information about the pilot boarding position and on which side of the vessel the pilot is boarding.
- Keep pilot ladders in a sheltered place and on deck as long as possible to avoid icing.
- Place pilot ladders (normally) 1.5 m above sea level.
- The pilot may arrive by pilot boat or hydrocopter in icy conditions.
- Vessels must obey orders of the icebreaker when approaching the pilot boarding position.
- A complete stop may be required.
- Vessels must follow the pilot's instructions when he is embarking or disembarking the vessel.
- Searchlights are required at night-time to ensure safe navigation.

## 6. VESSEL TRAFFIC SERVICES VTS, GOFREP AND TURKU RADIO

### 6.1 VTS

According to the Vessel Traffic Service Act (623/2005) it is the objective of the VTS Centres to increase the safety and efficiency of vessel traffic and to prevent damage caused to the environment by vessel traffic. The VTS Centres supervise and manage the vessel traffic and they have the capability to interact with traffic and to respond to changing traffic situations. The operational hours of the VTS Centres are 24 h/day all year round. The VTS Centres forward information about for example other traffic, ice conditions, waypoints as well as the positions, names and VHF working channels of the icebreakers.

### 6.2 GOFREP

GOFREP is a mandatory ship reporting system in the Gulf of Finland. Its objectives are to increase navigational safety, improve the protection of the marine environment and monitor the compliance with the rules of the road at sea. The traffic centres TALLINN TRAFFIC, HELSINKI TRAFFIC and ST. PETERSBURG TRAFFIC monitor the vessel traffic and provide advice and information about navigational hazards and weather conditions in the Gulf of Finland. The operational hours of GOFREP are 24h/day all year round.

### 6.3 Maritime safety radio communications, Turku Radio

During the icebreaking season, Turku Radio reports the positions of the icebreakers once a day at 0803 UTC. Turku Radio also informs about the valid waypoints as part of the report Position of Icebreakers. Turku Radio reads the ice report of the Finnish Meteorological Institute twice a day at 1033 and 1833 UTC and informs vessels of any exceptional situations in winter navigation on their Navigational warning -broadcast at 0233, 0633, 1033, 1433, 1833 and 2233 UTC.

Turku Radio also provides information on its VHF working channel.

### 6.4 Temporary withdrawal of the traffic separation scheme

The traffic separation schemes in the Gulf of Finland, Sea of Åland and the Kvarken can temporarily be withdrawn if traffic, due to the ice conditions, cannot be managed properly using these. Vessels are informed about this through the GOFREP System and Turku Radio. Furthermore, information about this is given in connection with the daily ice reports of the Finnish Meteorological Institute.

## 7. THE ICE SERVICE OF THE FINNISH METEOROLOGICAL INSTITUTE

The Ice Service of the Finnish Meteorological Institute monitors ice conditions and developments on a daily basis and issues ice charts, ice reports and ice forecasts based on the collected and analysed data.

The daily ice chart and ice report include a description of current ice conditions and information about the operational areas of the icebreakers. Announcements are also given about assistance restrictions, ship routes and advance notification obligations.

The ice report is read daily at 12.45 in Finnish on Radio Finland and in Swedish on Radio Vega.

Other ice products can be ordered from the Finnish Meteorological Institute. The orders are subject to a charge. Ice charts and ice reports are available free of charge e.g. via BIM Web on the website <https://baltice.org>.

The Ice Service of the Finnish Meteorological Institute also answers questions about the ice conditions, ice winter forecasts and any other expert questions related to ice.

Useful information about ice in the Baltic Sea can also be found on the Finnish Meteorological Institute's website: <https://en.ilmatieteenlaitos.fi/ice-season-in-the-baltic-sea>

### Winter classification in the Baltic Sea:



Mild



Average



Severe

## 8. ICEBREAKING IN THE LAKE SAIMAA AREA

Icebreaking in the Saimaa Canal and the Lake Saimaa area is the responsibility of the Finnish Transport Infrastructure Agency. The assistance restrictions in force in the area are based on the same HELCOM recommendations, as elsewhere on the coast. Depending on the ice conditions in the area the Saimaa Channel may need to be closed for traffic. The closing of the Channel will be informed to all relevant parties in due time.

Joint information about ice conditions and assistance restrictions are given daily in the ice reports of the Finnish Meteorological Institute. Information about the dates when the Saimaa Canal will be closed and opened can be found in the Finnish version of Notices to Mariners, on the FTIA's website and in the newspapers. The assistance restrictions in force, can be found on the website: <https://baltice.org>. The FTIA also informs operators in the Lake Saimaa area by email. If you want to receive notices by email, please send your contact information to the address: [winternavigation@ftia.fi](mailto:winternavigation@ftia.fi).

Icebreaker assistance in the Bay of Vyborg and the approach channel to the Saimaa Canal (up to Juustila) is the responsibility of Russian icebreakers.

## 9. FURTHER INFORMATION

### 9.1 Winter Navigation at the FTIA

Inquiries directly concerning assistance restrictions, exemptions, ice conditions and other related matters can be directed to the FTIA's Navigation Unit.

Useful information on winter navigation is also available in the website: <https://vayla.fi/en/transport-network/waterways/winter-navigation>

### 9.2 Baltic Sea Icebreaking Web (BIM Web)

Information about winter navigation has been compiled on the website <https://baltice.org>. The website includes a daily ice chart covering the whole Baltic Sea area, an ice report, the positions and assistance plans of icebreakers and the assistance restrictions in force. Via this website, you can monitor the progress of selected assisted vessels or the changes in the assistance restrictions of the ports by requesting the information to be sent directly to your own email address. Other useful information on winter navigation can also be found in the website.



## 10. LEGISLATION AND REGULATIONS

Act on the Ice Classes of Ships and Icebreaker Assistance (1121/2005)

Act on Criteria for Charges Payable to the State (150/1992)

Regulations on the structural design and engine output required of vessels for navigation in ice (ice class regulations and the application thereof) on the Traficom website:

<https://www.traficom.fi/en/transport/maritime/ice-classes-ships>

Finnish ice classes equivalent to the class notations of recognised classification societies and documents and information required for the determination of the ice classes of ships:

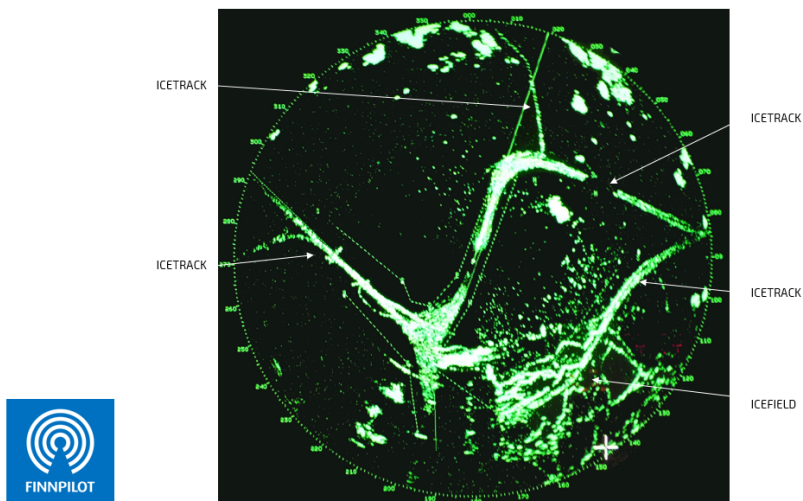
<https://www.traficom.fi/en/transport/maritime/ice-classes-ships>

## 11. ADJUSTING THE RADAR IMAGE

Adjusting an X band (9 GHz / 3 cm) radar image

- BAND RADAR GIVES THE BEST ACCURACY IN ICETRACKS
- ADJUSTING IS DONE BY INCREASING GAIN AND REMOVING ALL CLUTTERS UNTIL THE IMAGE SHOWS WHERE ICE TRACKS ARE

READING THE RADAR IMAGE:





## CALL FOR OBSERVATIONS OF ICE ACCRETION

The Finnish Meteorological Institute (FMI) is responsible not only for giving wind forecasts and warnings for seafarers but also for giving warnings about the accretion of ice on ship superstructures. The warnings given pertain to Finnish territorial waters.

Ice accretion occurs when the sea is still open but the air temperature is clearly below zero. The warnings given range from moderate to severe or extremely severe icing. They can be heard in English via Navtex and Safety-Radio-Turku Radio in connection with other warnings. They are also posted on the website [www.fmi.fi](http://www.fmi.fi).

Observations of the ice accretion are very important. The FMI collects these observations from ships sailing in Finnish territorial waters, which report their observations voluntarily. The observations reported by the ships are collected and delivered real time to forecasters'

workstations, thus helping them to verify forecasts and giving them information on the icing situation. The result is better service. Observations reported by vessels are the only way we can obtain information about accretion, and that is why we need your help.

We kindly request you to assist by becoming an observer. We have prepared an electronic form for observers to use.

You can fill in the form with your observations in the website of [Baltice.org](http://Baltice.org). From this site you will find the form and also the instructions for sending it. You can also inform the VTS centers or Turku-Radio about the icing situation and ask them to fill in the form for you.

We will gladly provide more information about the collection of ice accretion observations and about other weather services for vessels.

**Finnish Meteorological Institute**  
Customer Services  
[liikenne@fmi.fi](mailto:liikenne@fmi.fi)  
Erik Palménin aukio 1  
P.O. Box 503 FI-00101 Helsinki  
Tel. +358 29 539 1000  
[www.fmi.fi](http://www.fmi.fi)

[ilmatiiteenlaitos.fi](http://ilmatiiteenlaitos.fi)



## Attention winter navigation operators!

Baltice.org is a free single access point website for reliable and up-to-date information about winter navigation in the Baltic Sea area. The website is held up by Baltic Icebreaking Management (BIM) member country authorities.

The website is chart based information system, with online AIS information of the vessels trading in the area - including Ice Breakers positions and assistance plans. You can choose vessels you want to follow or request information about changes in assistance restrictions of the ports of interest.

On the website you can find:

- icebreakers' assistance plans
- traffic restrictions
- ice maps
- and lots of other useful information relating to winter navigation

Please, visit the website [www.baltice.org](http://www.baltice.org)

**Baltice.org**  
Baltic Icebreaking Management

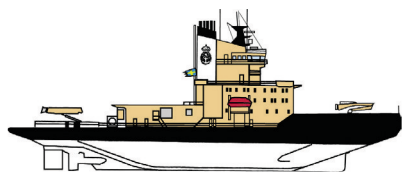


Väylävirasto  
Trafikledsverket  
Finnish Transport  
Infrastructure Agency

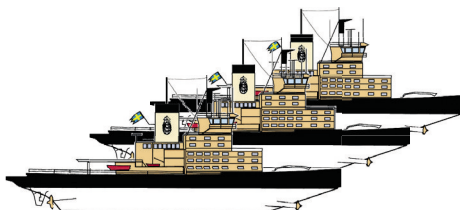
## Swedish Maritime Administration

Isbrytare	Callsign	E-mail	Telefon
Ale	SBPQ	bridge@ale.sjofartsverket.se	+46(0)10-478 63 95
Atle	SBPR	bridge@atle.sjofartsverket.se	+46(0)10-478 63 75
Frej	SBPT	bridge@frej.sjofartsverket.se	+46(0)10-478 63 65
Oden	SMLQ	bridge@oden.sjofartsverket.se	+46(0)10-478 63 55
Ymer	SDIA	bridge@ymer.sjofartsverket.se	+46(0)10-478 63 85
Baltica	SJOY	baltica@sjofartsverket.se	+46(0)10-478 57 00
Scandica	SKFZ	scandica@sjofartsverket.se	+46(0)10-478 57 71

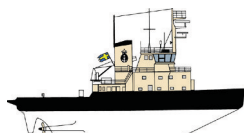
All icebreakers listen to VHF Channel 16 and MF 2332 kHz



Oden 1988



Atle, Frej & Ymer 1974-1977



Ale 1973

Other partners in icebreaking cooperation: [www.baltice.org](http://www.baltice.org)



Väylävirasto  
Trafikledsverket  
Finnish Transport  
Infrastructure Agency