



Väylävirasto
Trafikledsverket

Winter - Talvi - Vinter 2021 -2022

Finland's Winter Navigation

Suomen talvimerenkulku

Finlands vintersjöfart

Instructions for winter navigation operators

Ohjeita talvimerenkulun toimijoille

Instruktioner för aktörerna inom vintersjöfarten



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

Arctia Icebreaking Ltd

Icebreaker	Call Sign	Direct	Mobile – GSM phone	E-mail
Urho	OHMS	+358 (0) 30 620 7500	+358 (0) 400 219681	urho.bridge@arctia.fi
Sisu	OHMW	+358 (0) 30 620 7400	+358 (0) 400 219682	sisu.bridge@arctia.fi
Otso	OIRT	+358 (0) 30 620 7300	+358 (0) 400 219680	otso.bridge@arctia.fi
Kontio	OIRV	+358 (0) 30 620 7200	+358 (0) 400 592747	kontio.bridge@arctia.fi
Voima	OHLW	+358 (0) 30 620 7650	+358 (0) 400 318156	voima.bridge@arctia.fi
Fennica	OJAD	+358 (0) 30 620 7700	+358 (0) 400 107157	fennica.bridge@arctia.fi
Nordica	OJAE	+358 (0) 30 620 7800	+358 (0) 400 246551	nordica.bridge@arctia.fi
Polaris	OJQT	+358 94 245 0459	+358 4687 67900	polaris.bridge@arctia.fi

All icebreakers listen to VHF Channel 16 and MF 2332 kHz



Urho 1975 . Sisu 1976



Otso 1986 . Kontio 1986



Fennica 1993 . Nordica 1994



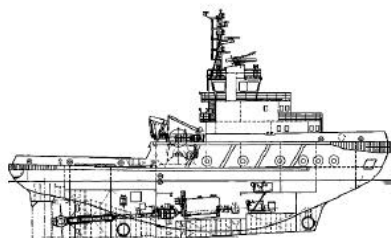
Voima 1954/1979/2016



Polaris 2016

Alfons Håkans AS Finnish Branch

Icebreaker	Call Sign	Mobile – GSM phone	E-mail
Zeus Of Finland	5BSP4	+358 400 184 031	tug.zeus@alfonshakans.fi



Zeus

Cover picture, Ilari Rainio

CONTACT INFORMATION

Winter Navigation Management
Finnish Transport Infrastructure Agency
Maritime Unit
PO Box 33
00521 HELSINKI, FINLAND

Service number during icebreaking season (24 h): +358 50 471 4850

Telephone: +358 295 34 3000, exchange (8.00–16.15)
+358 295 34 3328, maritime specialist

email: winternavigation@ftia.fi
Internet: www.vayla.fi/en/winternavigation

Icebreaking in the Lake Saimaa area

Finnish Transport Infrastructure Agency
Maritime Unit
PO Box 33
00521 HELSINKI, FINLAND
Telephone: +358 29 534 3291, maritime specialist
+358 50 431 9739

Email: winternavigation@ftia.fi

Western Finland VTS Centre
Juhana Herttuan puistokatu 21
PO Box 351, 20101 Turku, FINLAND

Turku Radio
Telephone: +358 20 448 6400
Email: turku.radio@fintraffic.fi
VHF: See separate map

Bothnia VTS
Telephone: +358 20 448 7356
Email: bothnia.vts@fintraffic.fi
VHF: 67

Saimaa VTS
Sulkuvartijankatu 15
53300 LAPPEENRANTA, FINLAND
Telephone: +358 206 37 3745
Email: saimaa.vts@fintraffic.fi
VHF 09

Gulf of Finland VTS Centre
Telephone: +358(0)20448 5391
Email: supervisors.hki@fintraffic.fi
Vilhonvuorenkatu 2-4
00500 Helsinki

GOFREP Traffic Centres, contact information:

Helsinki Traffic:

Telephone: +358 204 485 387 or +358 204 485 388
Email: gofrep@fintraffic.fi
fax: +358 204 485 394
VHF: 60 (80)

Tallinn Traffic:

Telephone: +372 6 205 764 or +372 6 205 777
Email: gofrep@transpordiamet.ee
fax: +372 620 5766
VHF: 61 (81)

St Petersburg Traffic:

Telephone: +7 812 380 70 21 or +7 812 380 70 81
Email: gofrep@rsbm.ru
Fax: +7 812 380 70 20
VHF: 74 (10)

Swedish Maritime Administration
Ice-breaking Management
SE-601 78 Norrköping
SWEDEN

Service number during icebreaking season (24h): +46 771 63 25 25

Telephone: +46 771 63 00 00, exchange (0800-1630 LT)
+46 10 478 49 58, Icebreaking director
+46 10 478 62 58, Operational Manager

Email: opc@sjofartsverket.se
Internet: www.sjofartsverket.se/winternavigation

Ice Info

Telephone: +46 10 492 76 00
Email: ice.info@sjofartsverket.se
VHF: 78

Providers of icebreaking services

Arctia Icebreaking Oy
Laivastokatu 9
00160 HELSINKI, FINLAND

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

Email: icebreakers@arctia.fi

Internet: www.arctia.fi (information on icebreakers, crew change days, assistance areas)

Alfons Håkans AS, Finnish Branch

Hevoskarintie 23
20100 TURKU, FINLAND

service number (24 h): +358 50 63304

Telephone: +358 400 528 224 (Jari Talja)

Email: office.finland@alfonshakans.com

Internet: 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 (Eriksson, Tollman, Vainio)

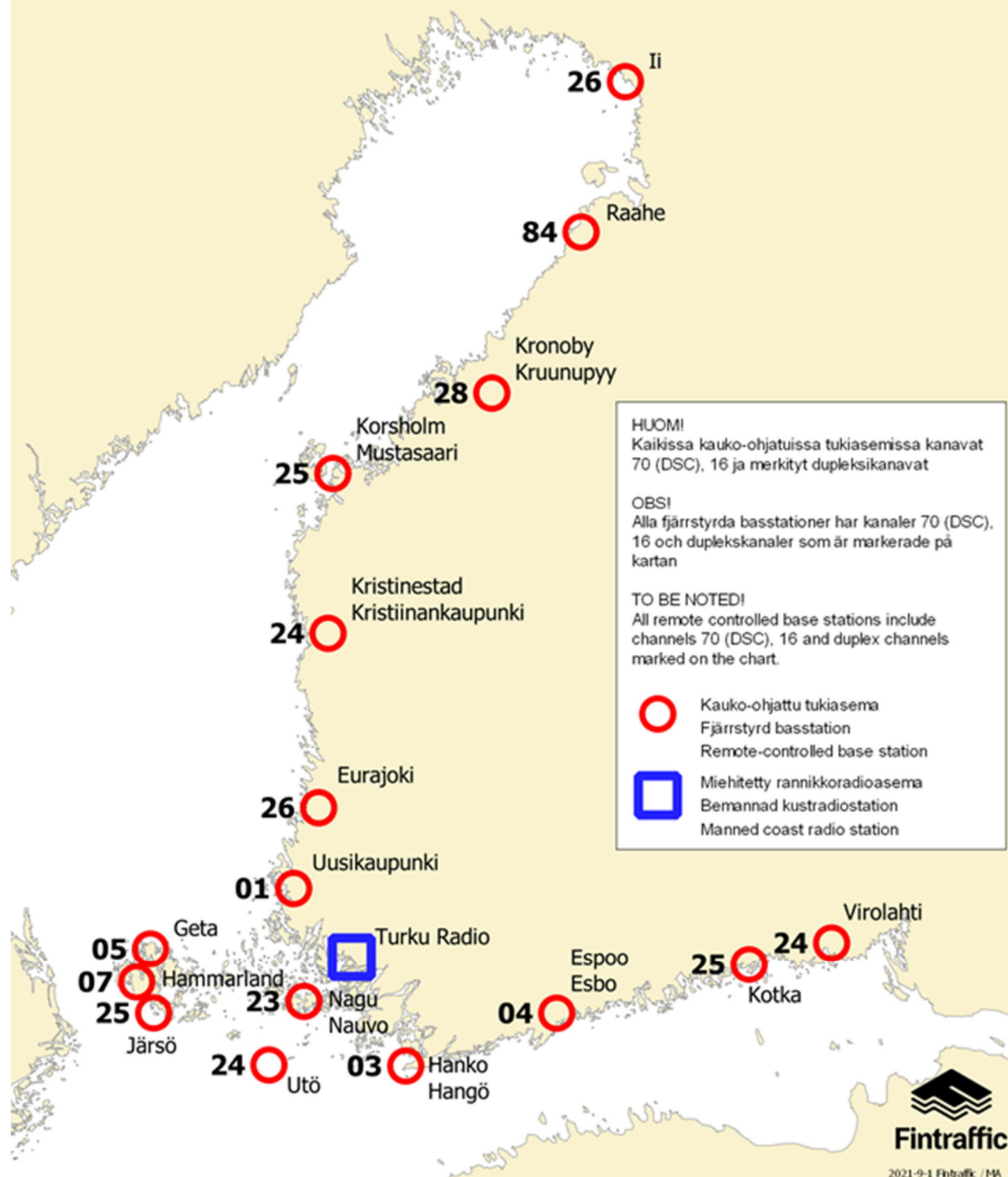
Email: iceservice@fmi.fi

Internet: <https://en.ilmatieteenlaitos.fi/ice-conditions>

Turku Radion työskentelykanavat radiopuhelinliikenteessä

Turku Radios arbetskanaler för radiotelefoni

Working channels of Turku Radio for voice communication



CONTACT INFORMATION	3
This is an unofficial translation. FTIA takes no responsibility to its correctness. The Official texts are in Finnish and Swedish only.....	
1. GENERAL INFORMATION	8
1.1 The instructions and their objectives.....	8
1.2 Assistance of winter navigation	8
1.3 Vessels entitled to icebreaker assistance	8
1.3.1 The publication Finland's Winter Navigation, compliance with instructions.....	10
1.4 Order of assistance.....	10
1.4.1 Securing transports critical for the emergency supply	10
1.5 Reporting obligations by ports and shipping companies	11
1.5.1 Ports.....	11
1.5.2 Shipping companies and agents	11
2. ASSISTANCE RESTRICTIONS AND EXEMPTIONS.....	11
2.1 Assistance restrictions	11
2.2 Imposing of assistance restrictions.....	11
2.3 Equivalence between ice classes.....	12
2.4 Exemptions	13
3. MASTER'S CHECKLIST.....	14
4. NAVIGATION IN ICE	15
4.1 Risks when navigating in ice	15
4.2 Reporting	15
4.2.1 Vessels bound for the Bothnian Bay or the Bothnian Sea.....	15
4.2.2 Vessels bound for the Gulf of Finland	16
4.2.3 Vessels bound for the Lake Saimaa area	16
4.3 Proceeding in ice.....	16
4.4 Instructions for ice navigation in fairways in the archipelago.....	16
4.5 Instructions for assisted vessels.....	16
4.6 Instructions for towage	17
5. PILOT BOARDING IN ICE CONDITIONS.....	19
6. VESSEL TRAFFIC SERVICES VTS, GOFREP AND TURKU RADIO	20
6.1 VTS.....	20
6.2 GOFREP	20
6.3 Maritime safety radio communications, Turku Radio	20
6.4 Temporary withdrawal of the traffic separation scheme.....	20
7. THE ICE SERVICE OF THE FINNISH METEOROLOGICAL INSTITUTE	21
8. ICEBREAKING IN THE LAKE SAIMAA AREA	21
9. FURTHER INFORMATION.....	22
9.1 Winter Navigation at the FTIA.....	22
9.2 Baltic Sea Icebreaking Web (BIM Web).....	22
10. LEGISLATION AND REGULATIONS.....	22
11. ADJUSTING THE RADAR IMAGE.....	23

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 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 FTIA is responsible for the availability of icebreaking services as specified in item 1.2.

The objective of these instructions is, according to Finland's maritime strategy 2014–2022 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 minimum depth of 8 metres leading to a winter port designated by the FTIA and in other destinations specified by the FTIA. Assistance in port areas is the responsibility of the ports in question. 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.

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.

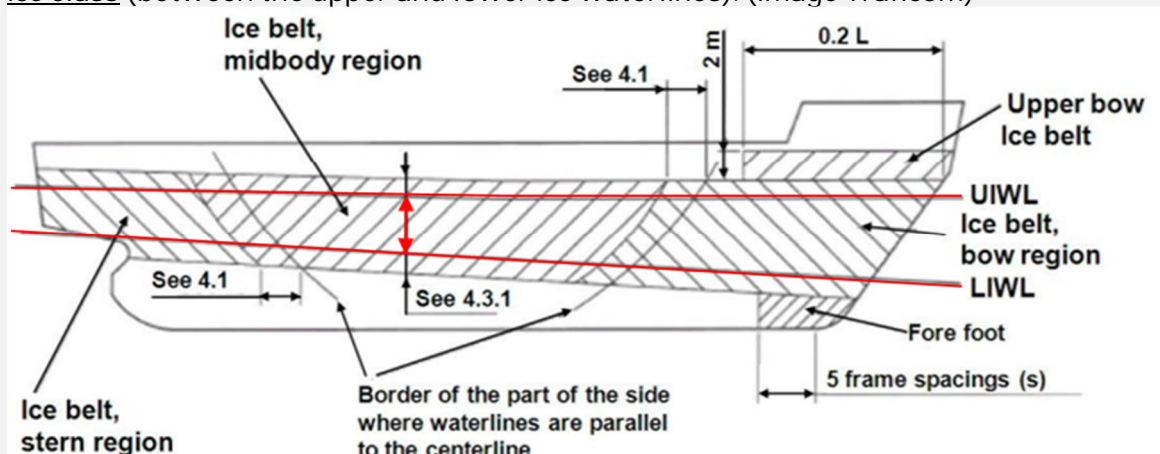
Charges for towage in connection with salvage operations and other related assistance are based on separate agreements.

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 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). (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 the maximum engine power specified for its ice class if the ice conditions or the icebreaker 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.

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 2021–2022 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, 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 2021–2022" 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 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

Assistance restrictions in use during the 2020-2021 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

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 IA 4000 dwt has been applied in combination with the cargo restriction of 2000 tonnes.

Bothnian Sea: The first assistance restrictions - ice classes I and II with the deadweight 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 on 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 deadweight is not more than five (5) per cent below the required deadweight
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.

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 is available.
- 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.
- Adjust the X band (9GHz / 3cm) radar image to show ice tracks; increase gain and remove all clutters until the tracks are clearly displayed in the image. See the instructions in chapter 11.
- 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. To prevent freezing, lower the ladder as close as possible to the Pilot boarding position.
- Test the searchlights in advance.
- 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. Any neglect in this respect will cause assistance to be delayed.
- Ensure that ballast has been loaded to minimum ice class draught (LIWL, fore and aft) and that the propeller is completely submerged. Any neglect in this respect will cause assistance to be delayed. See item 1.3
- Ensure that the vessel has been loaded up to maximum draught allowed by the ice class (UIWL, fore and aft). Any neglect in this respect will cause assistance to be delayed. See item 1.3
- Check that cooling water is available when navigating in ice.
- Follow the icebreaker's or pilot's instructions on using maximum engine power.
- Avoid colliding with loose ice floes at high speed and check your open-water speed.
- Check the waypoints* provided by the icebreaker/VTS/GOFREP when navigating in ice.

*Waypoints

In ice-covered areas the coordinating icebreaker provides waypoints, which indicate the assistance route. The 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 from the website Baltice.org, Turku Radio, ICE INFO, VTS/GOFREP or from the icebreakers. Failure to follow the 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, 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 78 (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.tmf.fi/sites/default/files/2019-01/GOFREP_MG_2018_12_20_0.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.

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. The minimum is considered to be 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 channels 16 and MF 2332 kHz.
- 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 in-formed 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 cannot expect to be as-sisted.

4.6 Instructions for towage

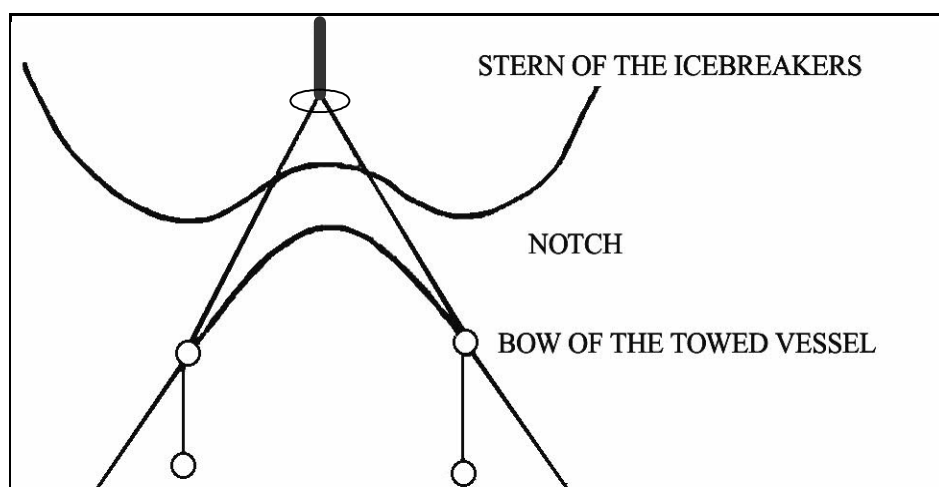
1. In difficult ice conditions, towing may be the only means of ensuring safe and effective assistance.
2. The vessel must be prepared to make fast or cast off the icebreakers towing wire at any time. The icebreaker decides when a vessel is taken into tow.
3. The vessel towed by an icebreaker may only 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 bitts which have been designed to withstand the stresses of towing. Note! Roller fairleads can't stand the mechanical stress during towing.

Notch towing

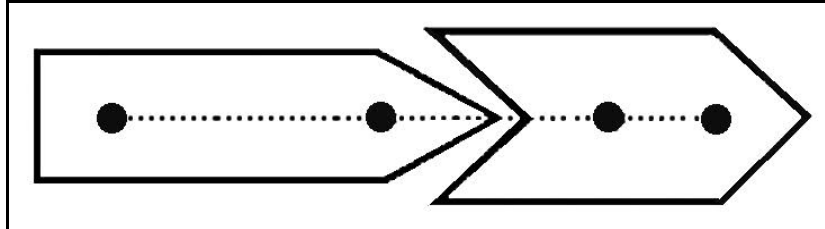
Notch towing is applied when the icebreaker and the towed vessel are connected as below:



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.

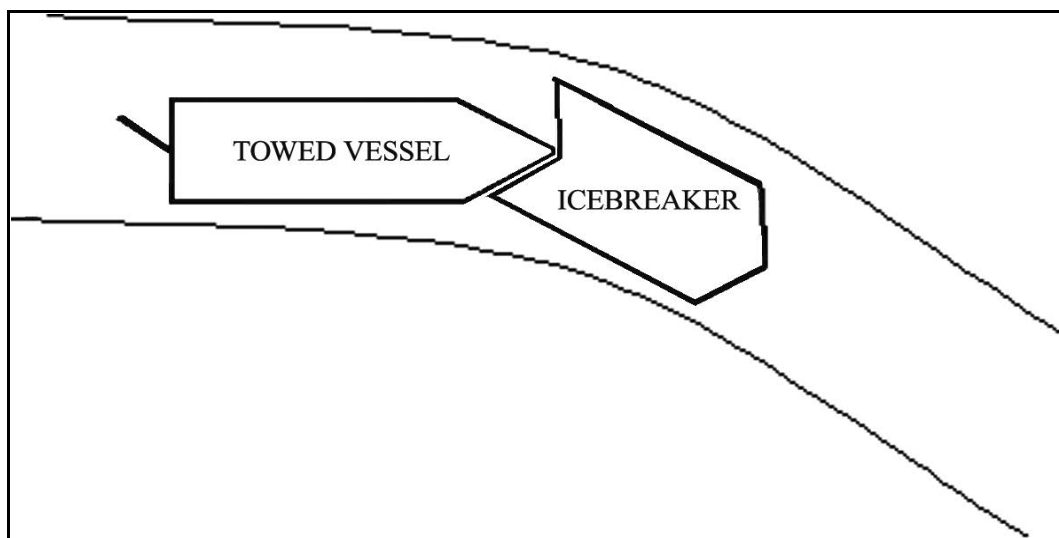
When proceeding straight ahead the vessel should keep its masts in line with the masts of the icebreaker.



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

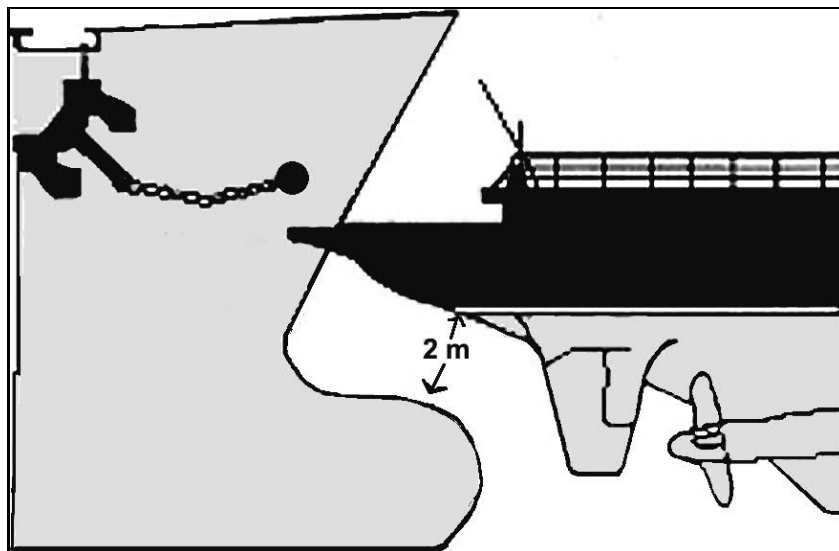
If the icebreaker asks the vessel to help with altering the course, the helm has to be turned enough in the opposite direction of the one normally used, as the vessel's hull is acting as the rudder of the whole combination.



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.

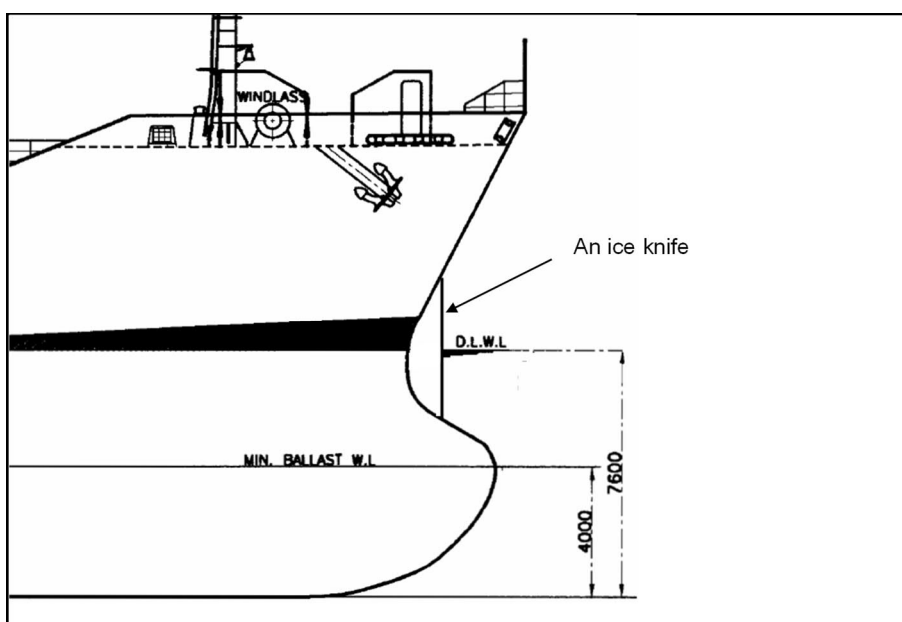
If the ship's anchors are located on the outside of the hull and could thus come into contact with the towing notch, they must be pulled back or lifted onto the deck well in advance before the assistance.



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 Finnpilot's Pilot Order Service.
- 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 www.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: www.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.

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 on 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 www.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 on the site.

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:

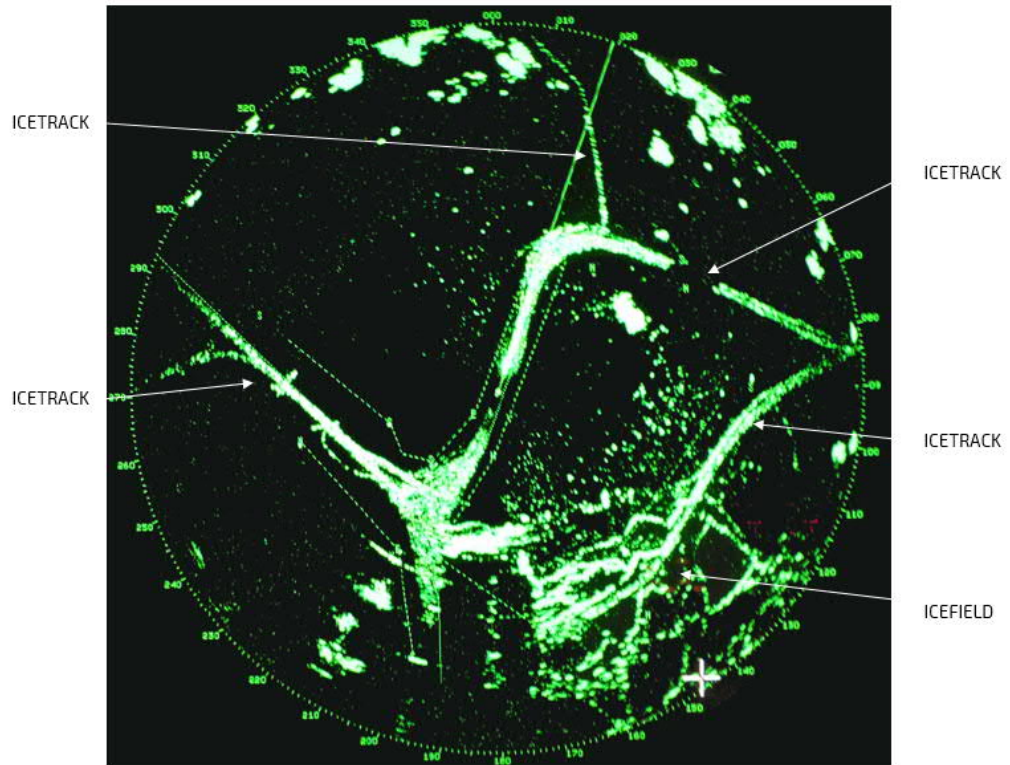
<https://www.traficom.fi/en/transport/maritime/ice-classes-ships>

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:





FINNISH METEOROLOGICAL INSTITUTE

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.

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*. 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.

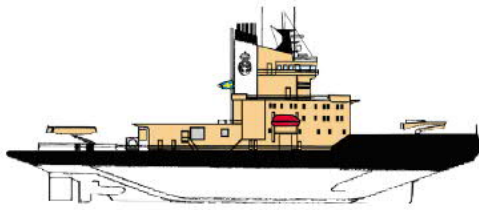
Finnish Meteorological Institute
Customer Services
liikenne@fmi.fi
Erik Palménin aukio 1
P.O. Box 503 FI-00101 Helsinki
Tel. +358 29 539 1000
www.fmi.fi

ilmatieteenlaitos.fi

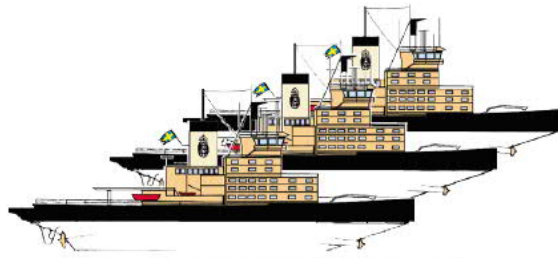
Swedish Maritime Administration

Icebreaker	Callsign	Telephone	E-mail
Ale	SBPQ	+46 (0) 31-33 44 952	bridge@ale.sjofartsverket.se
Atle	SBPR	+46 (0) 31-33 44 948	bridge@atle.sjofartsverket.se
Frej	SBPT	+46 (0) 31-33 44 940	bridge@frej.sjofartsverket.se
Oden	SMLQ	+46 (0) 31-33 45 511	bridge@ib-oden.se
Ymer	SDIA	+46 (0) 31-33 44 944	bridge@ymer.sjofartsverket.se
Thetis	5BMW4	+358 40 090 3905	tug.thetis@alfonshakans.com
Baltica	SJOY	+46(0) 10 478 57 00	baltica@sjofartsverket.se
Scandica	SKFZ	+46(0) 10 478 57 71	scandica@sjofartsverket.se

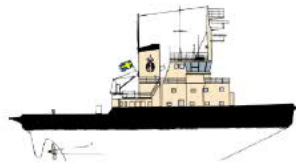
All icebreakers listen to VHF Channel 16 and MF 2332 kHz



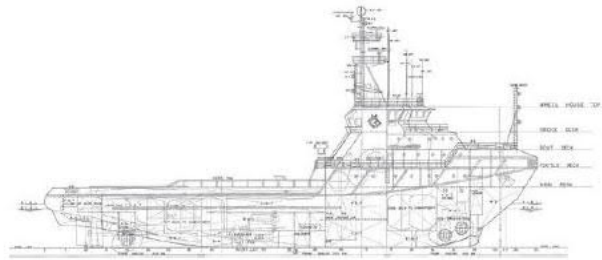
Oden 1988



Atle, Frej & Ymer 1974-1977



Ale 1973



Thetis 1983

Other partners in icebreaking cooperation: www.baltice.org



Väylävirasto
Trafikledsverket
Finnish Transport
Infrastructure Agency