

# ICE CLASS TANKERS CONFERENCE

**Hamburg 28.9.2006**

**Ilmari Aro**

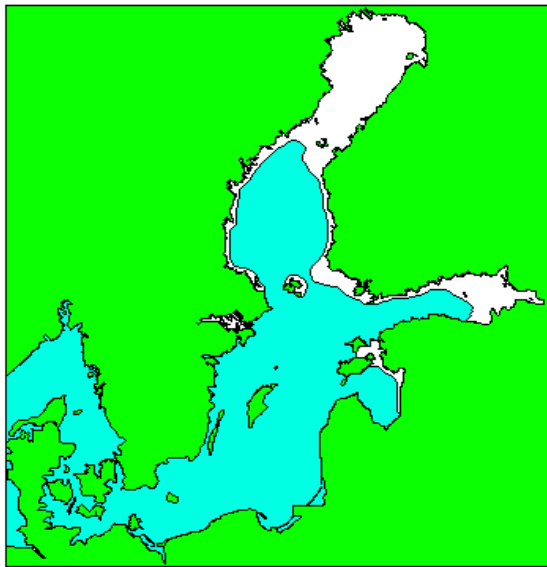
**Director, captain**



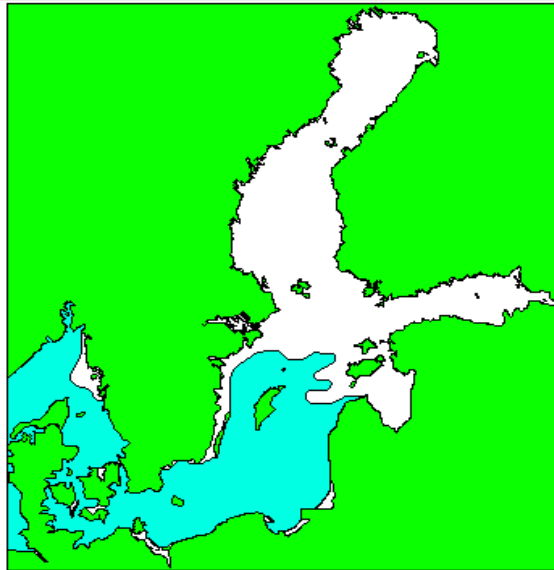
**Finnish Maritime  
Administration**

# The Baltic ice season

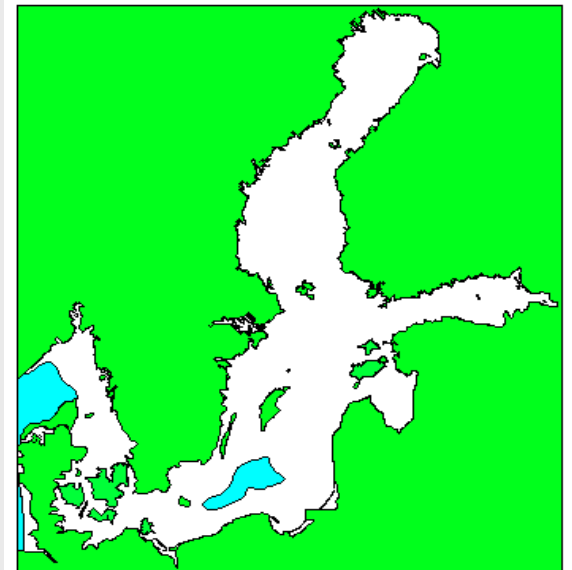
- Finnish icebreakers working periods vary from 3 months to 6.5 months
- Assistance to 23 winter ports



**Extremely mild**



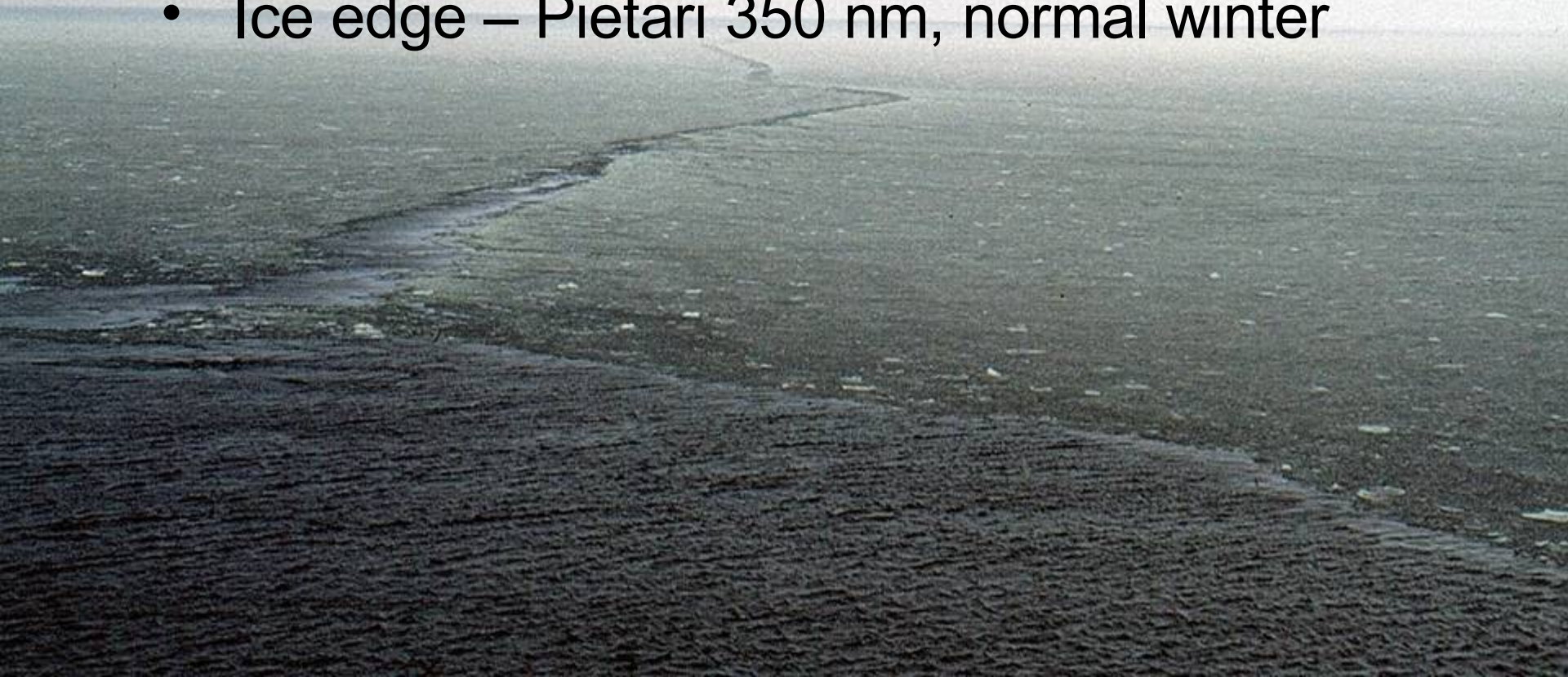
**Average**



**Extremely severe**

# **The primary task of the icebreakers is to escort the vessels through the worst of the ice fields**

- Ice edge – Kemi 450 nm, normal winter
- Ice edge – Pietari 350 nm, normal winter



**The icebreaking service has three tools:**

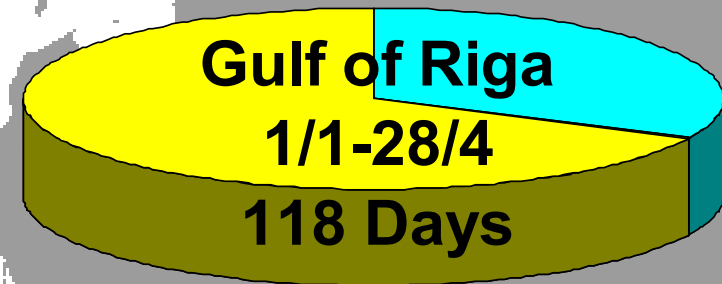
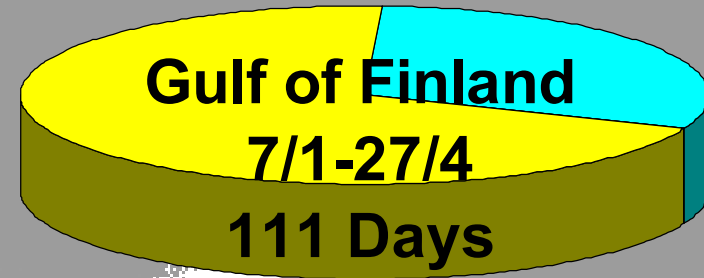
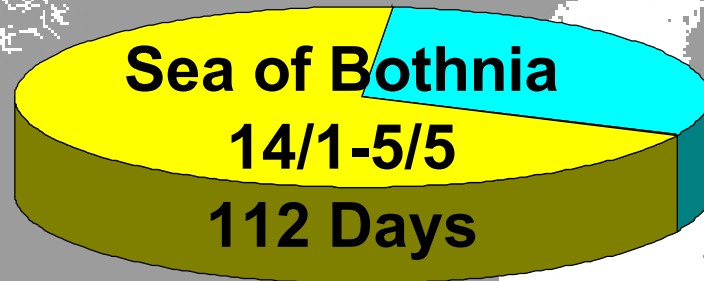
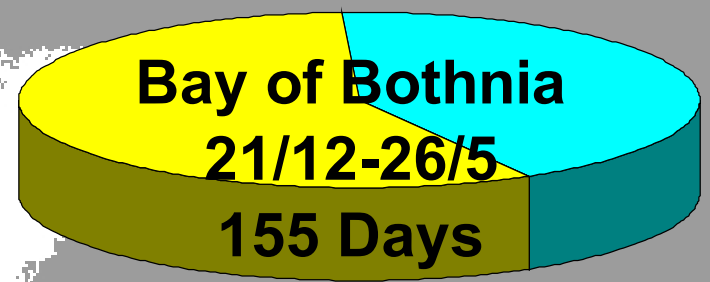
**7. Icebreakers**

**8. Traffic restrictions**

**9. Good ice-going vessels  
and information**



# Traffic restrictions 2005-2006

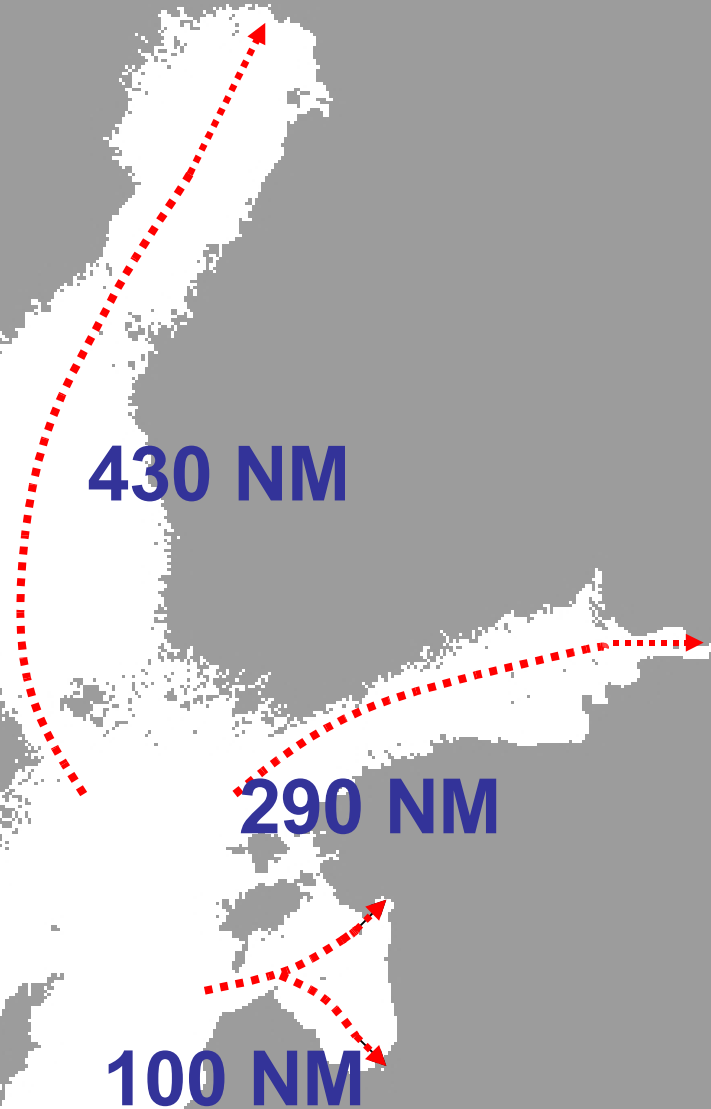


# FMA's demand for service level in icebreaking services

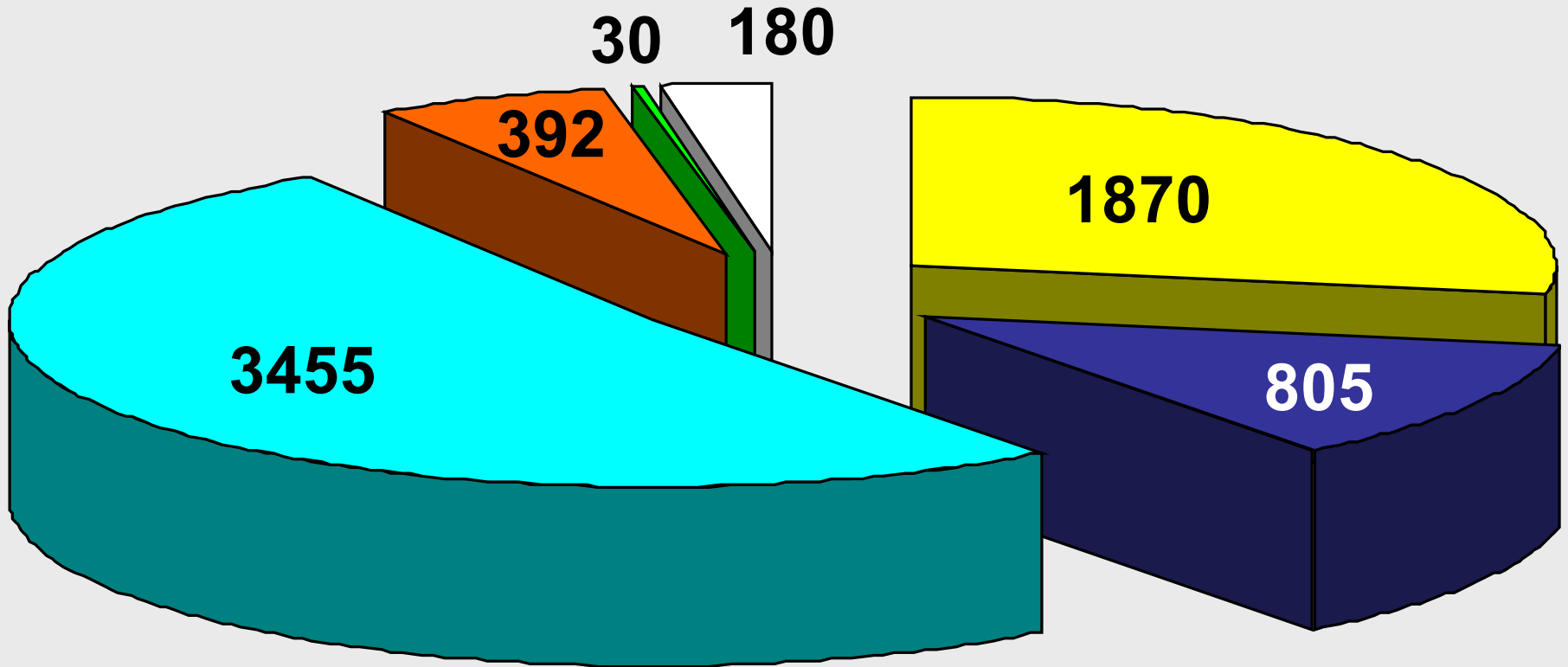
- The average waiting time for icebreakers not more than 4 hours
- The ships to get through without any waiting time 90-95 % in the bay of Bothnia

Winter 2006	3,3 hours / 93,2 %
Winter 2005	2,7 hours / 95,0 %
Winter 2004	3,3 hours / 95,5 %
Winter 2003	6,3 hours / 84,2 %

Maximum  
sailing  
distance in  
sea-ice  
2005-2006



# 6.732 Assisted Vessels



 **Bay of Bothnia**

 **Sea of Bothnia**

 **Gulf of Finland**

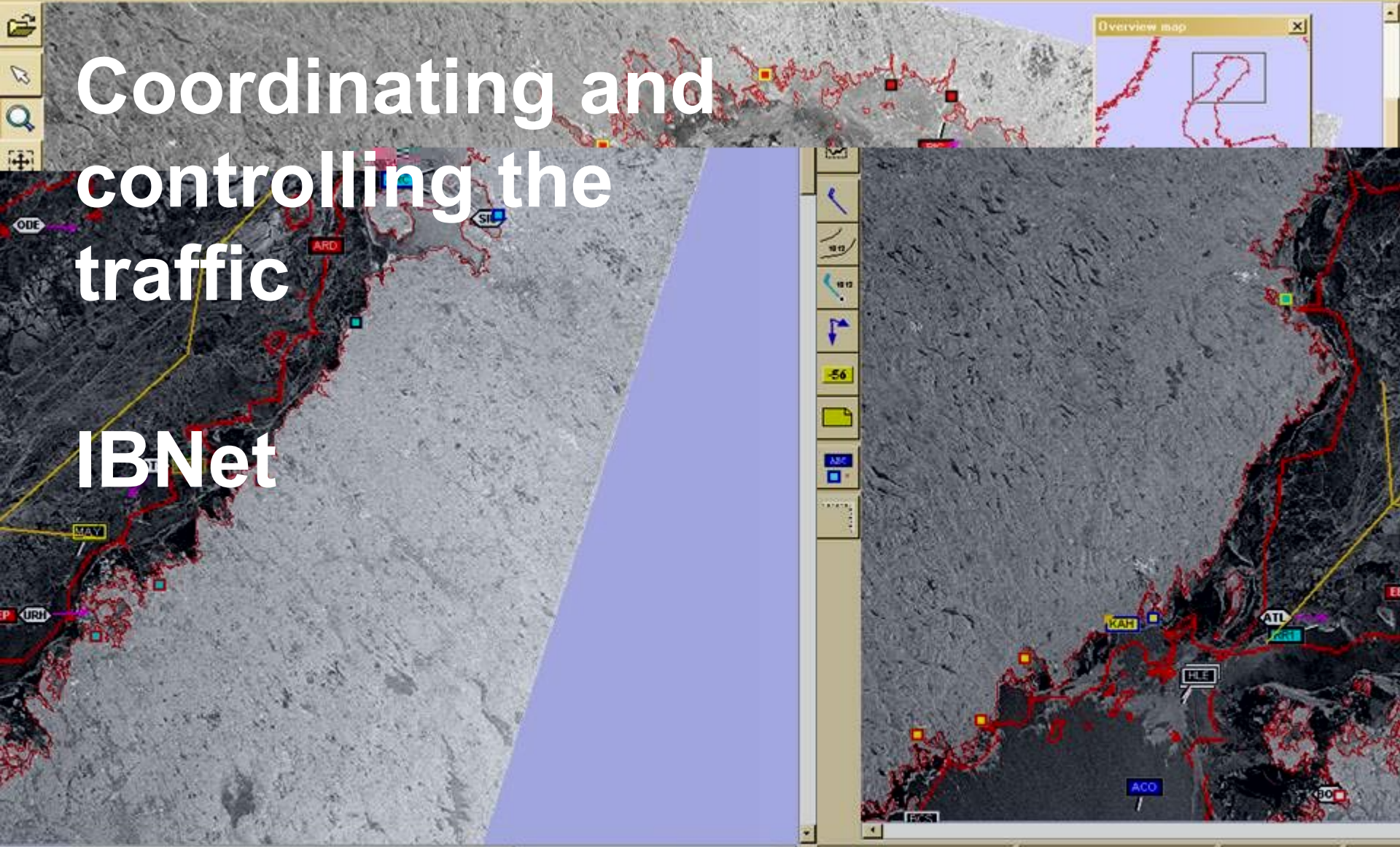
 **Gulf of Riga**

 **The Central Baltic**

 **The Southern Baltic**

# Coordinating and controlling the traffic

## IBNet



# Ice experience is important

- The owner will keep his vessel undamaged
- The charterer will get the ship on schedule
- The industry is aiming 0 -storages and short delivering time is competitive advantage
- Environmental impact of shipping
- Lack of icebreakers in stringent winters

# Icing



**Competent and experienced officers**



# Vessels not capable of navigation in ice



# **Today's training is mainly done through training on the job**

**It is presumed that the operations in the ice  
covered areas shall be carried out by  
certified personnel in the future**



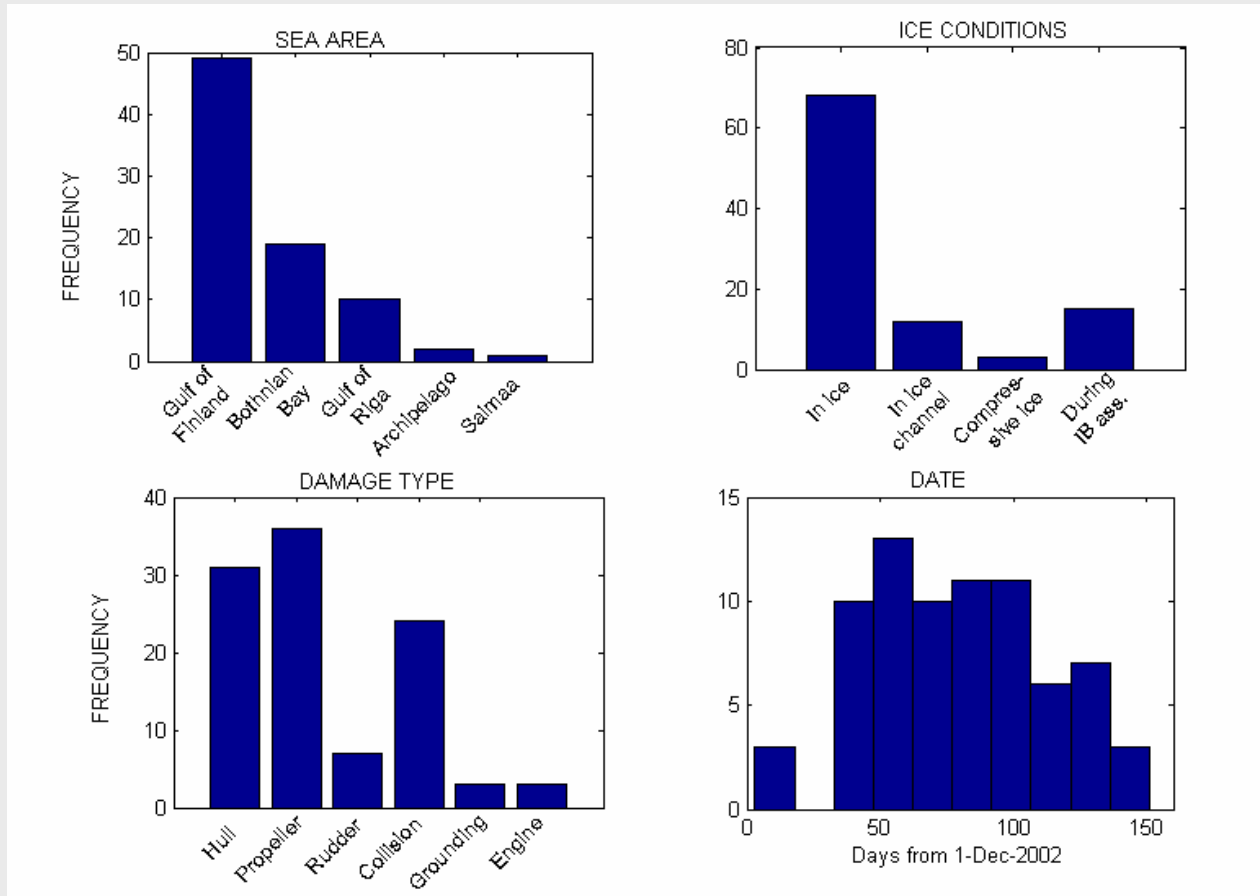
# Accident and incident types in winter navigation

Accident/incident type	Typical ice related situation
Hull ice damage	<ul style="list-style-type: none"><li>• Ship moves at moderate or high speed and hits fast ice, an ice floe or ridge</li><li>• Ice is compressing against the side of the ship hull</li></ul>
Rudder damages	<ul style="list-style-type: none"><li>• Ice load directed to rudder (when moving astern)</li><li>• E.g. ramming operations in difficult ice conditions with repetitive back and forth movements</li></ul>
Propeller damages	<ul style="list-style-type: none"><li>• Ship with stopped or slowly rotating propeller is moving through ice</li><li>• Ramming operations in difficult ice conditions with repetitive back and forth movements</li></ul>
Fire or explosion, machinery damage etc.	

# Accident and incident types in winter navigation

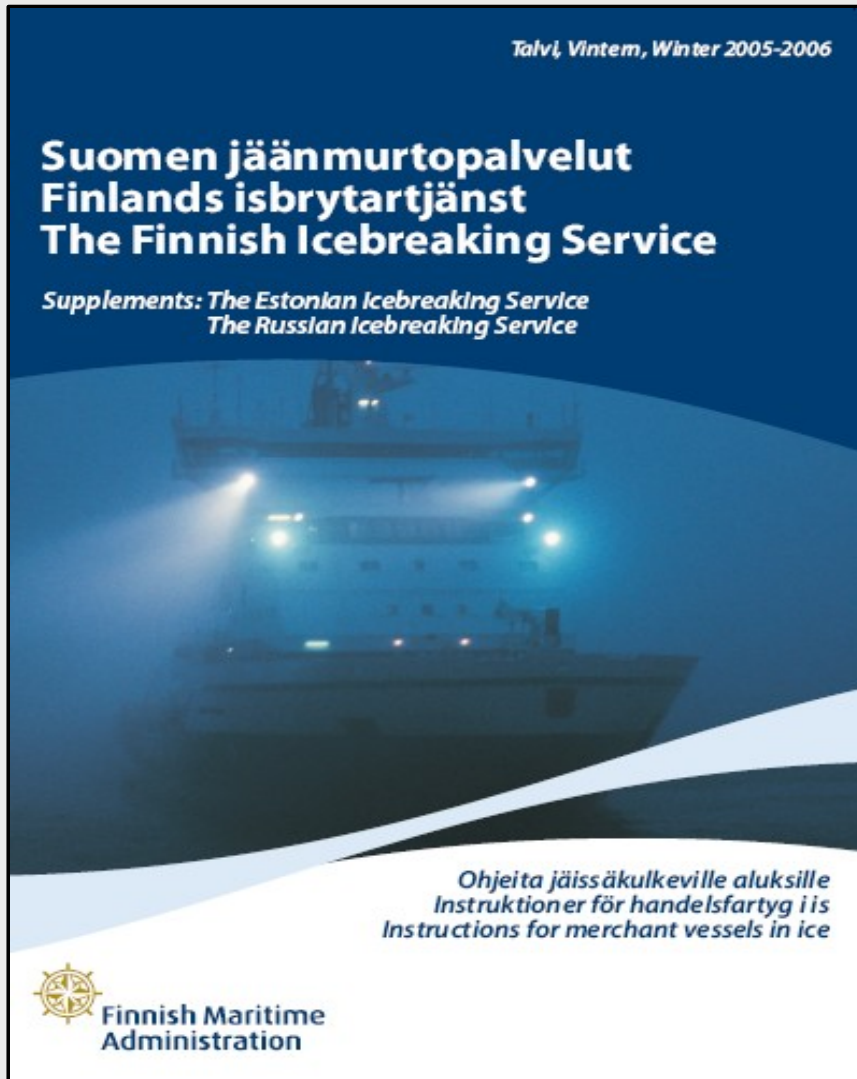
Accident/incident type	Typical ice related situation
Collision	<ul style="list-style-type: none"><li>• In icebreaker assistance</li><li>• Between unassisted vessels in narrow ice channel</li></ul>
Drift groundings	<ul style="list-style-type: none"><li>• Vessel gets stuck in ice and drifts with the ice on a shoal</li></ul>
Powered grounding	<ul style="list-style-type: none"><li>• Ice prevents from making needed manoeuvre to keep ship on safe route</li><li>• Vessel is seeking for an easier route in difficult ice conditions and thus deviates from the normal route</li></ul>
Icing	<ul style="list-style-type: none"><li>• Cold and windy <u>open sea</u> conditions</li></ul>

# Ice related accidents/incidents in Baltic Sea, winter 2003



Source: Hänninen, 2004: Incidents and accidents in winter navigation in the Baltic Sea, winter 2002-2003. Research Report No. 54. Winter Navigation Research Board.

[http://www.fma.fi/e/functions/winter\\_navigation/](http://www.fma.fi/e/functions/winter_navigation/)



- Operational demands for officers of the merchant vessels
- Estonian supplement
- Russian supplement



# Master Plan Studies for Development of the Motorways of the Baltic Sea

## Baltic Sea Icebreaking Web (BIMWeb)

- Idea is to collect up-to-date icebreaking related information from the whole Baltic Sea area to one site. The information has so far been prepared at national level.
- Baltic Sea Icebreaking Management (BIM) organization, which has members from all Baltic Sea states, is behind the idea.
- The site can be found at [www.baltice.org](http://www.baltice.org)
- All information on the site is provided by national authorities and ice services (and in some cases ports) of all Baltic Sea states.





# Master Plan Studies for Development of the Motorways of the Baltic Sea

## Baltic Sea Icebreaking Web (BIMWeb)

- Information content:
  - Up-to-date ice chart covering whole Baltic Sea area
  - Simplified ice chart with the boundary of 10-15 cm thick ice
  - Ice forecasts
  - Ice reports
  - Ice thickness data
  - Baltic Sea warnings
  - Reporting instructions
  - Traffic restrictions
  - List of ice breakers and coordinator ice breakers
  - Average waiting times for ports
  - Local information and Contact information
  - Ice advisors
  - Courses for ice navigators
  - Description of BIM organization
  - Instruction DVD to inexperienced ice navigators





# Master Plan Studies for Development of the Motorways of the Baltic Sea

## Instruction DVD

- Information DVD describing how low temperatures affect the ship and how to handle the vessel in sea ice and during icebreaker assistance. Information will be presented in a mix of animations, films, photos and voice. Total of approximately 30 minutes.
- Contents:
  - Baltic ice conditions
  - Technical demand and traffic restrictions
  - Icing
  - Operation in ice
  - How to get icebreaking service
- DVD will be available free of charge. It can also be downloaded and watched at [www.baltice.org](http://www.baltice.org)



*Thank you and  
farewell!*

