International Navigating Conditions (01/11/03)

Baltic

Navigating Limits

Unless and to the extent otherwise agreed by the Underwriters, the vessel shall not enter, navigate or remain in the areas specified below at any time or, where applicable, between the dates specified below (both days inclusive):

Area 3 – Baltic

(a) Gulf of Bothnia north of a line between Umea (63° 50' N. Lat.) and Vasa (63° 06' N. Lat.) between 10th December and 25th May.

(b) Where the vessel is equal to or less than 90,000 DWT, Gulf of Finland east of 28° 45' E. Long. between 15th December and 15th May.

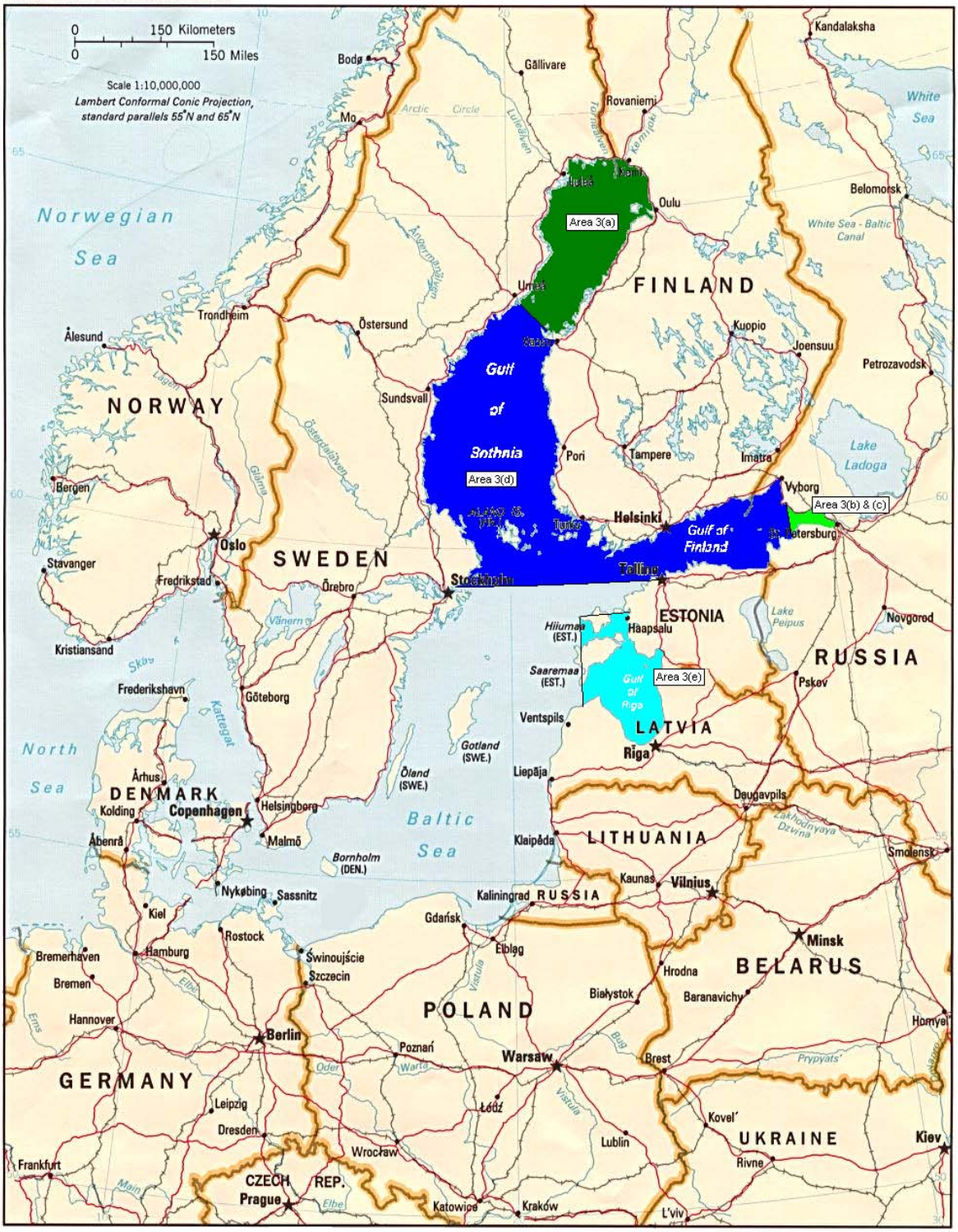
(c) Vessels greater than 90,000 DWT may not enter, navigate or remain in the Gulf of Finland east of 28° 45' E. Long. at any time.

(d) Gulf of Bothnia, Gulf of Finland and adjacent waters north of 59° 24' N. Lat. between 8th January and 5th May, except for calls at Stockholm, Tallinn[1] or Helsinki.

(e) Gulf of Riga and adjacent waters east of 22° E. Long. and south of 59° N. Lat. between 28th December and 5th May.

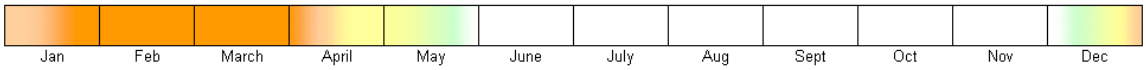
[1] **For the purposes of this clause, the Port of Tallinn is deemed to include Muuga Harbour (refer http://www.portoftallinn.com/port_info/muuga.shtml).**

The Baltic Sea Area



Perceived Degree of Enhanced Risk

Area 3(a) **Gulf of Bothnia north of a line between Umea (63° 50' N. Lat.) and Vasa (63° 06' N. Lat.) between 10th December and 25th May.**



Area 3(b) **Where the vessel is equal to or less than 90,000 DWT, Gulf of Finland east of 28° 45' E. Long. between 15th December and 15th May.**

Area 3(c) **Vessels greater than 90,000 DWT may not enter, navigate or remain in the Gulf of Finland east of 28° 45' E. Long. at any time.**

Area 3(d) **Gulf of Bothnia, Gulf of Finland and adjacent waters north of 59° 24' N. Lat. between 8th January and 5th May, except for calls at Stockholm, Tallinn or Helsinki.**

Area 3(e) **Gulf of Riga and adjacent waters east of 22° E. Long. and south of 59° N. Lat. between 28th December and 5th May.**

n.b. Above enhanced risk indicators are based on expected seasonal conditions for this region.

Conditions Precedent to Liability and/or Express Warranties

The following conditions are available for Underwriters' use:-

- *Breach of Navigating Limit Requirements Clause JH132 (31/10/2003).*
- *A weather forecast to be obtained prior to navigation into the restricted area.*
- *The pilot shall have an unrestricted tonnage licence.*

If vessel making Transhipments:-

- *Yokohama or equivalent fenders shall be used, and*
- *No hold harmless shall be given, and*
- *The vessel shall comply with all applicable recommended regulations and/or guidelines for transhipment at sea.*

Vessels greater than 90,000 Dwt:-

- *Underwriters should consider requesting a feasibility study for the intended voyage, including but not limited to comments on adequacy of the hydrographical charts, minimum keel clearance and expected navigation hazards and/or considerations.*

Any additional premium should also reflect prevailing ice conditions, refer Enhanced Risk Indicator for Area 3(b).

Underwriting Considerations

Is vessel Ice classed?

Will vessel receive Ice Breaker escort?

Primary Hazards

Ice (December to April)

Fog

Water Depth

Additional Information

Ice Maps

National Ice Centre
http://www.natice.noaa.gov

Baltic Sea
http://www.natice.noaa.gov/pub/East_Arctic/Baltic_Sea/Baltic_Sea
http://www.fimr.fi/en/palvelut/jaapalvelu/jaatilanne.html
http://www.fimr.fi/en/itamerinyt/jaatilanne.html

Links

Finnish Maritime Association
http://www.fma.fi/e/

Swedish Maritime Administration
http://www.sjofartsverket.se/navigering/htm/frameset.htm

Finnish Institute of Marine Research
http://www.fimr.fi/en.html

Winter Navigation
http://www.fma.fi/e/functions/winter_navigation/

Icebreaking
http://www.fma.fi/e/functions/winter_navigation/?cat=ib&page=0

Rules for Winter Navigation
http://www.fma.fi/e/functions/winter_navigation/pelisaannot_en.pdf

The Baltic Sea Portal
http://www.fimr.fi/en/itamerikanta.html

Finish Ice Service
http://www.fimr.fi/en/palvelut/jaapalvelu.html

Ice Conditions in the Baltic Sea (General Information)
http://www.fimr.fi/en/itamerikanta/tietoa/jaa.html

Baltic Ports Organization
http://195.149.157.29/bpoports/

Port of Tallinn / Muuga
http://www.portoftallinn.com/port_info/index.shtml

Port of Vyborg
http://www.port.vyborg.ru/eng/
http://www.vyborg.ru/org/baff/index.html

Port of Stockholm
http://www.stockholmshamn.se/eng/ourports/index.html
http://www.portsofstockholm.com/

Port of Helsinki
http://www.hel.fi/port/english/

Narrative

- Without Finland's icebreakers shipping over much of the Baltic Sea would come to a standstill in winter.
- Finland is the northernmost member of the European Union and one of the few countries in the word where all harbours are iced-bound during normal winters (up to six months). The coastline is 1,500km long.
- Operating costs amount to FMK120 (US$23m approx) million during normal winters. If capital costs are included, the total cost rises to approx FMK280m(US$54m). There is no direct charge for icebreaker assistance but all ships pay a fairway due, which is based on ship size aid ice class.
- The icebreakers are owned and operated by the Finnish Maritime Administration (9 ships).
- Twenty-three of Finland's approximately 60 commercial ports are kept open throughout the year.
- During the winter months, these 23 ports are visited by over 9,000 ships carrying more than 27 million tons of cargo.
- During a normal winter, the icebreakers are in operation for approximately a combined 1,000 days covering 140,000 miles.
- They also :tow ships a distance of about 20,000 miles for a total of 2,300 hours.
- Normally,; the operational season for icebreaking extends from mid-November until the end of May.
- Because icebreakers keep them open, the European Union has classified Finland's sea lanes as part of its trans-European transport network.
- The freezing of the Baltic Sea used to cause the closure of Finland's ports during the winter. Tine introduction of steam power and the purchase of Finland's first icebreaker, named "Murtaja" opened a new chapter in the country's confrontation with winter ice. The "Jaakarhu" built in 1926 was the first icebreaker in which power was generated by oil thus increasing the vessel's range.
- Pack ice is one of the most frequently encountered forms of ice in the Baltic Sea and one of the most difficult to navigate.

- The problems caused by winter conditions are being eased in three ways, by concentrating shipping to a selected number of ports during the winter; by encouraging the use of ice-strengthened merchant ships and by providing icebreaker assistance for ships.
- In extreme conditions icebreakers take merchant ships in tow and deliver them to harbour safe and sound.
- Icebreakers are expensive to build and maintain because of their high technology and special features and equipment. In the past they were laid up for several months a year until the introduction of the multipurpose icebreaker. These are fully operational throughout the year as they are also capable of laying flexible pipes and cables, handling heavy anchors, acting as supply and support vessels for oil drilling and even hauling icebergs through Arctic waters.
- In winter: navigation, passenger ships must, at minimum meet the requirements of Ice Class B. It is also required that the draught is kept between the load line and the ballast line during navigation in ice, and that the ship has a good searchlight for night-time operation's. An icebreaker can refuse to assist a ship with equipment that is not operational before the assistance starts. The icebreaker must report without delay the matter to the Icebreaker Management. Towing assistance given to a fully operational ship is free of charge. The Traffic Division requires ship owners or their agents to enter data about ship; timetables. Ships bound for Finnish ports and requiring icebreaker assistance must report to the icebreaker assisting the traffic well in advance of entering ice covered waters.
- The Ice Service of the Marine Research Institute is responsible for issuing ice and weather information for seafarers in Finland. The Finnish Ice Service monitors the ice conditions And development on a daily basis and issues charts and ice reports based on the data collected and analysed. Announcements are also given about traffic restrictions, ship routes, advance notification obligations etc.
- (Arlington, A - August 12, 1999) In their eight report pursuant to a Greening Earth Society research by Arizona State University, the ASU Climate Data Task Force finds no evidence in 500 years of Baltic Sea seasons that the high latitude, winter warming predicted by computer based general circulation models of global climate is occurring.
- Because the Baltic Sea is a relatively shallow and nearly closed inland sea connected only by narrow, shallow sounds to the North Sea, it takes 25 to 30 years for all its water to be replenished. This stable condition allows naturally heavier saline water to sink and to flow along the bottom of the Baltic Sea and not to mix appreciably with the fresh water on the surface. Such stratification of salinity makes the Baltic Sea surface prone to freezing. From 1900 to 1997 there is a small trend toward increased Baltic Sea ice.
- Ministry of Transport and Communications Finland has presented a report on the forecasts of the impacts of climate change on transport conditions in Finland. Their results show that in future i.e. latter part of 21 't century, the Baltic Sea ice cover will be smaller, the ice season will be shorten, and the ice will be thinner. In many areas it is predicted there will be ice-free or nearly ice-free periods within the ice season. However ice will still be formed every winter in the Bay of Bothnia and in the eastern part of the Gulf of Finland. The average maximum extent of the Baltic Sea ice cover would be classified as mild according to the present standards. At tine end of the 21`t century, the duration of the ice season will be reduced along the south and south-western coasts of Finland to about half and in the Bay of Bothnia to 70%80% of the present. On the South-western coast the freezing will be postponed by almost one and a half months and the break up of the ice will occur almost a month earlier. 1n the harbours of Kotka, Oulu and Turku the mean ice thickness will be reduced by 10-20cm and the maximum by 30cm

Sea Ice

In general, the ice season begins in late October and ends in early June. Surface waters are then around 10 to 1 1 c when ice begins to form in the Northern Baltic. During March, increasing solar radiation or warmer days due to more sunlight heats up the surface waters and the ice begins to melt and break up. The entire Baltic can freeze over during a severe winter except for a small area in the extreme South. Large sections of the Baltic remain ice-free during a mild winter with an average temperature of 4c in the Southern Baltic.

SMHI Marine Services

Provide forecasts for any harbour, area or a route in the area from the Baltic Sea and the North Sea down to the Mediterranean. Forecasts are useful for ferries, towings, vessels and small boats. They can provide details of wind, waves, swell, sea level, currents and ice from the Baltic Sea to Skagerrak. The Swedish ice service at SMHI monitor daily the ice situation in the whole Baltic area during the ice season, normally 15'h November to 25`h May. Information is based on reports from icebreakers, pilots, vessels, satellite information plus information from other countries. They produce ice charts daily for the whole ice season; describe the ice situation in plain language and describe the ice situation in coded form for all fairways and areas. The ice forecasts contain both ice and weather forecasts 1 to 10 days ahead. On special request they can provide the statistical outlooks up to 1 month and more. They recommend the most optimal route from their experience but encourage a two way dialogue with the master.

Geography of the Baltic Sea Area (www.envir.ee/baltics/geograph.htm)

The Baltic Sea. is a relatively shallow inland sea surrounded by the countries of north-eastern Europe and Scandinavia. The mean depth is only 55m, but the maximum depth reaches down to 459m. Nine countries border the sea: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden. The sea also receives surface water drainage from five other countries; Belarus, Czech Republic, Slovak Republic, Norway and Ukraine.

The Baltic Sea is connected to the North Sea through narrow and shallow sounds between Denmark and 'Sweden. The outlet consists of a series of basins separated by shallow sills which obstruct. efficient water exchange. Consequently, it takes 25-35 years for all the water from the Baltic Sea to be replenished by water from the North Sea and beyond.

The environmental conditions of the Baltic Sea are defined by the fresh water input from the rivers and precipitation, and by the limited inflow of more saline water from the North Sea. Without the constant, albeit small influx of saline water through the Danish straits, the Baltic Sea would have been transformed into a gigantic fresh water lake long ago. A clear salinity gradient exists from the almost oceanic conditions in the northern Kattegart to the almost fresh water conditions in the Northern Bothnian Bay.

Finnish Meteorological Institute - produce weather forecast for shipping.

Additional information, including prevailing conditions, for this region is available from members of the Joint Hull Committee – Navigating Limits Working Group