



*Maritime Administration of  
Latvia*

*Division for Investigation of Maritime Accidents*



***Foundering of Latvian  
f/v BEVERĪNA and loss of 6  
crew members lives in vicinity  
of port of Liepāja (Latvia).***





# Ships particulars

<b>Built</b>	<b>1972</b>
<b>Length</b>	<b>25.45 m</b>
<b>Breadth</b>	<b>6.8 m</b>
<b>Draft at midship</b>	<b>2.39 m</b>
<b>Freeboard</b>	<b>0.916 m</b>
<b>Gross tonnage</b>	<b>112</b>
<b>Net tonnage</b>	<b>33</b>
<b>Deadweight</b>	<b>30 t</b>
<b>Crew on board</b>	<b>6</b>



## Technical condition of ship

The ship's seaworthiness was acknowledged by the annual flag state inspection on 25 of October 2007.



# Weather condition

- Weather forecast :

wind SSW, 8-11m/s, in gusts 15-17m/s.

- Actual weather :

wind SSW, 16m/s, in gusts 21m/s,  
sea force 6, air t° +5°C, sea t° +7°C



# Chronology of events

BEVERĪNA

MERCATOR PROJECTION  
WORLD GEODETIC SYSTEM (WGS 84)  
SCALE 1 : 300 000

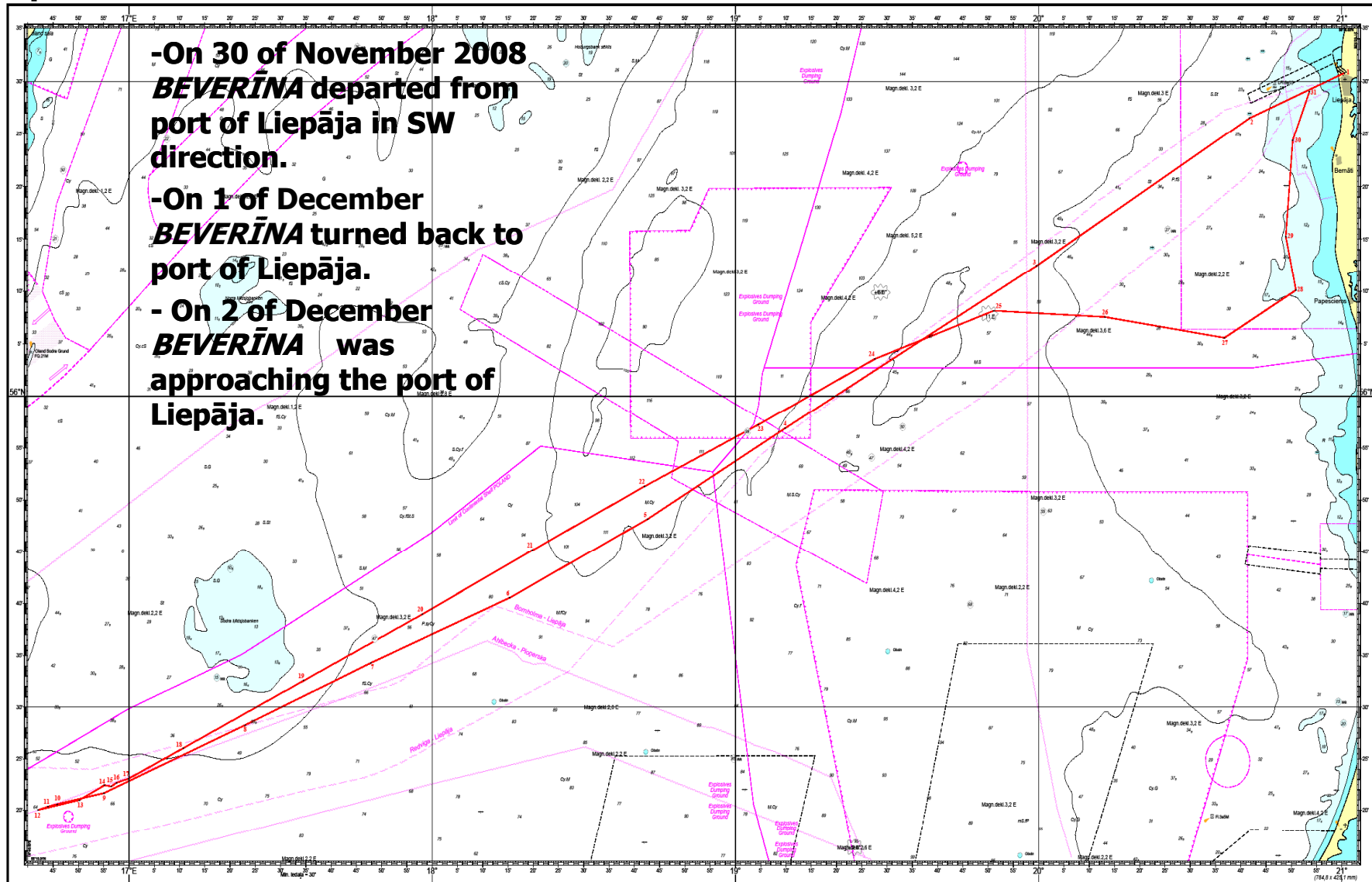
Positions obtained from satellite - navigation  
systems referred to the World Geodetic System  
(WGS 84) can be plotted directly on this chart.

Uz šīs kartes var tikt atzīmēti koordinātas,  
kuras noteiktas ar satelītu navigācijas  
sistēmu, balstītu uz WGS 84.

**-On 30 of November 2008  
BEVERĪNA departed from  
port of Liepāja in SW  
direction.**

**-On 1 of December  
BEVERĪNA turned back to  
port of Liepāja.**

**- On 2 of December  
BEVERĪNA was  
approaching the port of  
Liepāja.**



DEPTHS IN METRES

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BEVERĪNA



# Chronology of events



- 02.12.2008 *BEVERĪNA* was on her way back to the port of Liepāja.
- At 1620 (LT) the captain of *BEVERĪNA* reported to Liepāja VTS about the main engine and steering gear failure. MRCC Riga is informed about the situation.
- f/v *GINTS* was ordered to take *BEVERĪNA* on tow.



# Chronology of events



- At 1824 MRCC Riga ordered the coast guard vessel *A-53 VIRSAITIS*, which was nearby the port of Liepāja, to assist *BEVERĪNA*, if necessary.



# Chronology of events

- At 2000 the Liepāja VTS prohibited *BEVERĪNA* and *GINTS* to enter the port of Liepāja due to bad weather.
- At 2100 *BEVERĪNA* dropped her anchor.  
MRCC Rīga designates *VIRSAITIS* as OSC.
- At 2145 *BEVERĪNA* dropped her second anchor because of the vessel's drift.





# Chronology of events

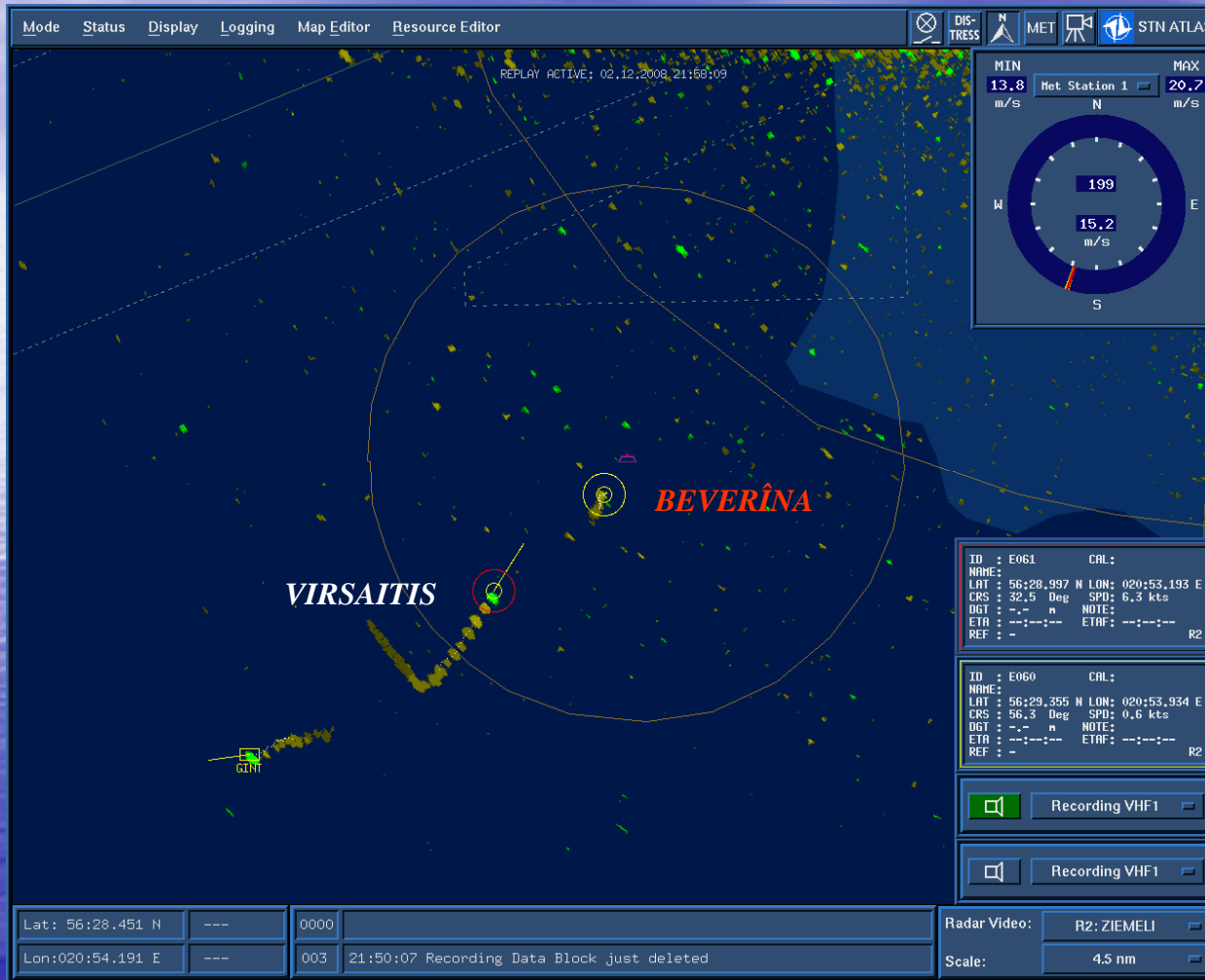
- Weather got worse and worse, situation on *BEVERĪNA* became critical – the ship's stern started to submerge in sea due to oncoming sea water on deck.
- Crew inflated life raft, but *VIRSAITIS* recommended the crew not to hurry to abandon the vsl. because :

Due to bad weather *VIRSAITIS* could not take the crew up from life raft and suggested to await of SAR helicopter, *VIRSAITIS* intentions was to take *BEVERĪNA* on tow.

- 2145 the captain of *BEVERĪNA* informed *VIRSAITIS* to hurry up with the tow because the situation on *BEVERĪNA* is very critical and there is a danger of vsl. capsizing.



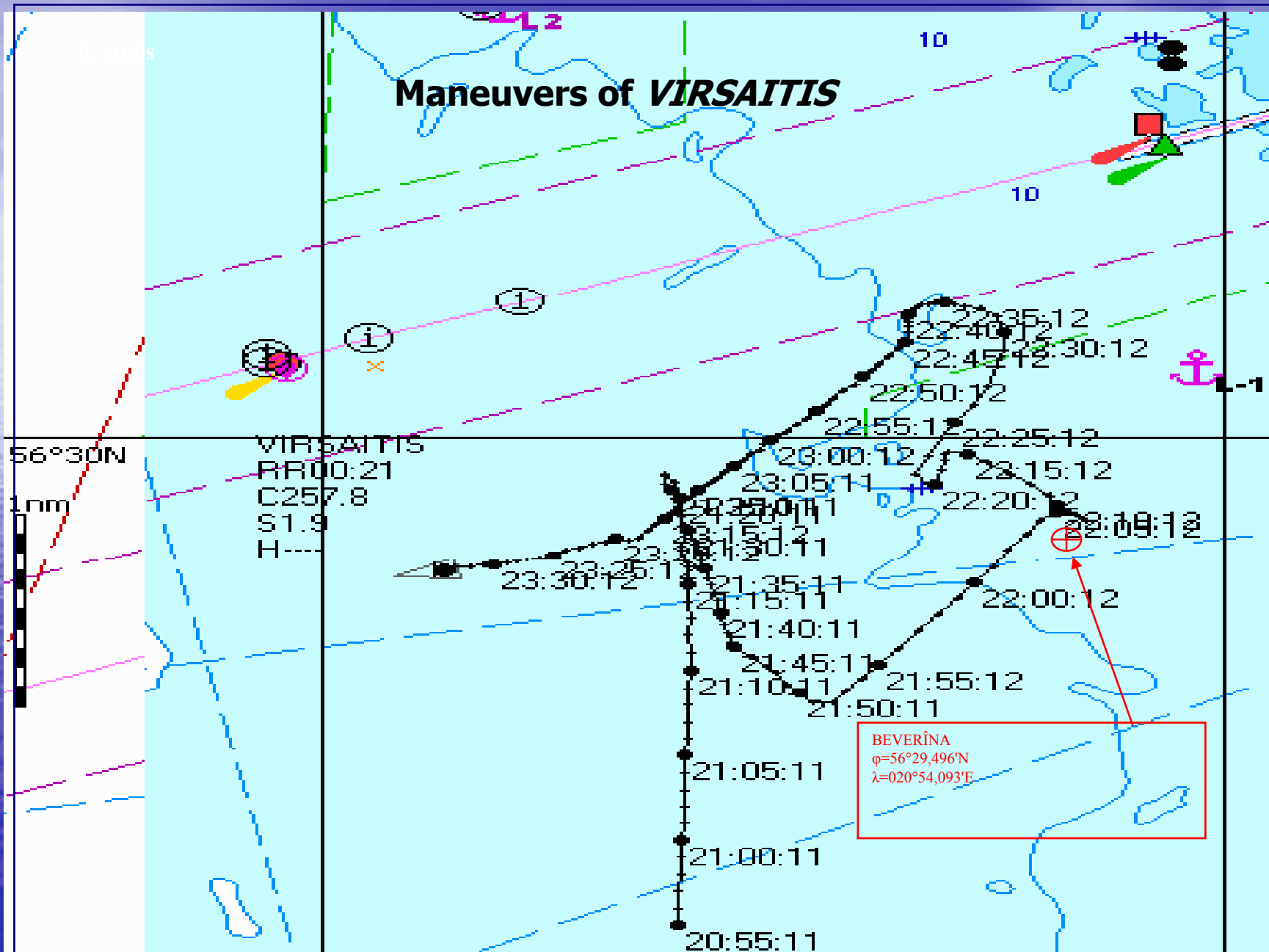
# Chronology of events



- 2200 *VIRSAITIS* was on his way to *BEVERĪNA* position (approx at a distance of 7 cables), when *BEVERĪNA* capsized.

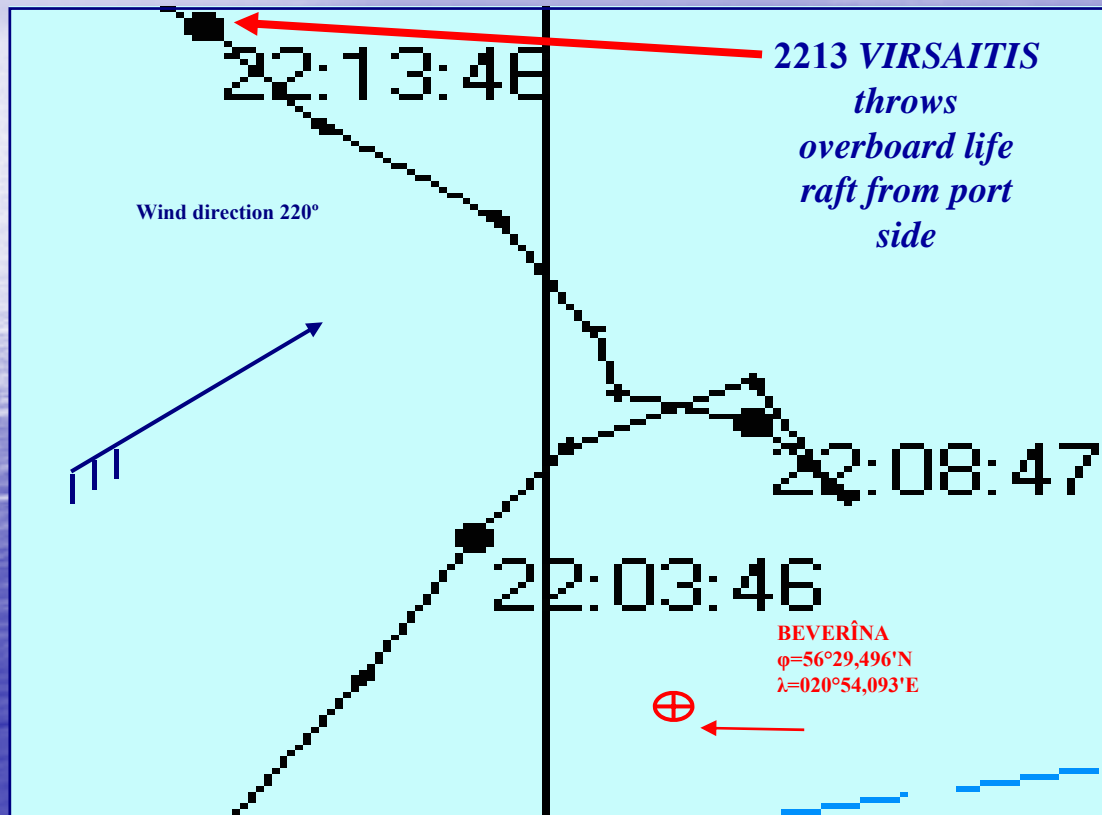


# SAR OPERATION





# SAR OPERATION



Liferaft was thrown overboard 1,5-2 kbl NW from position, where the *BEVERINA* capsized. The wind direction was SW, so the life raft was blown away.



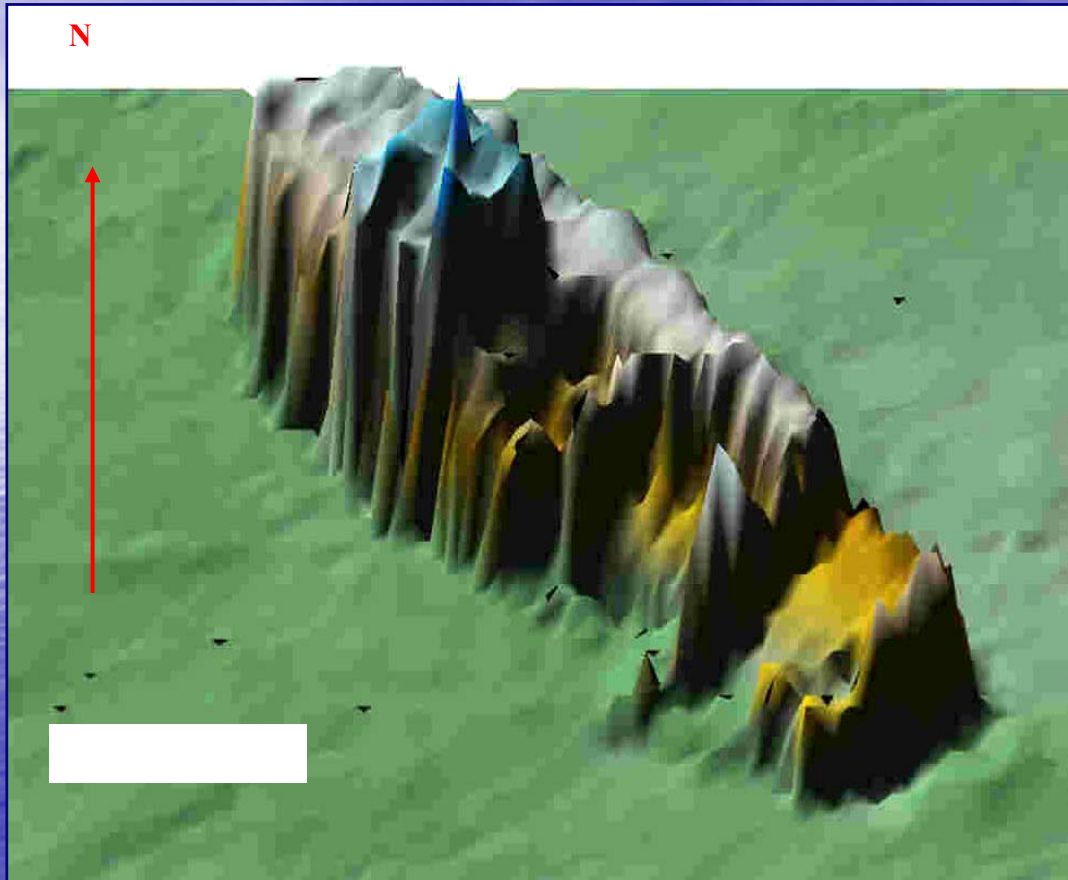
# SAR OPERATION



- 2255 border guard vessel *TIIRA* joins the site of accident.
- 2307 *VIRSAITIS* ceases SAR operation due to bad weather.
- 2336 Swedish helicopter arrived at the site of accident.
- 2357 Helicopter departed from site of accident to Ventspils for refueling(it was not possible to take fuel in Liepāja).
- On 3 of December at 0140 helicopter back at site of accident.
- SAR operations continued till 0300, but without any success.



# Findings



- On 5 and 6 of December 2008 the site of accident was inspected by specialized hydrographic vessel to determine the position and condition of the wreck. The wreck lies in NW direction with a list to port side and the stern submerged in sea bed.



# Findings



- Latvian navy divers inspected the vessel. No crew members were found inside the vessel. In cargo hold, instead of fish products, they found cooper underwater cable reels lifted from the seabed.





# Findings



- Steering gear failure occurred due to sea water inflow in aftpeak (steering gear motors inside aftpeak), which resulted in aft draft increase.  
(approx weight of water in aftpeak: 26.4t)
- One of the cable rolls was hoisted up from *BEVERINA* hold and the weight was determined – approx 950 kg. According to the info from divers, the total possible quantity of rolls in hold could be approximately 30 pcs.  
(approx weight of cargo: 28.5 t)
- Feature of this type of f/v is that while drifting, ship's stern turns at an approx angle of 45 degrees against the direction of waves, which contributed to a situation when the water level (presuming 0.3m-minimum) on deck badly increases.  
(approx weight of water on deck: 29 t)





# Stability calculations

- Total possible extra weight on board the ship was about 60 t.
- Stability calculations were made giving a result of negative Metacentric height  
(GM) = **-1,22 m**, which resulted in a vessel's capsizing.  
All IMO determined fishing vessel stability requirements mismatched the actual stability criteria at the moment of accident.

	actual	ruled(IMO)
Corrected metacentric height	<b>-1,22 m</b>	0,500 m
Angle of first max arm	<b>5,03 degr</b>	25,00 degr
Angle of vanishing stability	<b>9,68 degr</b>	60 degr
Greatest righting lever	<b>-0,01 m</b>	0,250 m
Angle of flooding	<b>16,64 degr</b>	60,00 degr
Weather criterion	<b>0,00</b>	1,00



# CONCLUSIONS

- The captain of *BEVERĪNA* did not transmit MAY DAY call and did not request evacuation of the ship's crew.
- Neither MRCC Riga or OSC vessel *VIRSAITIS*, or Liepāja VTS did request information from *f/v BEVERĪNA* about the real situation on board:
  - kind of cargo and quantity;
  - problems of main engine and steering gear failures;
  - water inflow in aftpeak.
- *BEVERĪNA* initial cause of foundering could be considered due to ships technical problems:
  - main engine's and steering gear failures.



# CONCLUSIONS

- Without regard, that in SAR operations *f/v GINTS*, coastguard vessel *VIRSAITIS*, border guard vessel *TIIRA* and Swedish helicopter were involved, the result of this SAR operation was absolutely unsatisfactory – *BEVERĪNA* sunk and 6 crew members lost their lives 3 nm from the port of Liepāja breakwater.
- As primary reason of loss of 6 crew members' lives could be considered *BEVERĪNA* captain's lack of experience and inability to take a decision in an extreme situation.  
In this critical situation the *BEVERĪNA* captain should had evacuated the crew to liferaft, which was already inflated at the ships port side.



# CONCLUSIONS

- Considering an advantage of the port of Liepāja, that the entrance into the port is possible through 3 sea gates, Liepāja VTS prohibition to *BEVERĪNA*, which was in emergency situation, to enter the port is doubted.





# CONCLUSIONS

- All *BEVERĪNA* stability requirements were exceeded
- Border guard vessel *TIIRA* was involved in SAR operations with overdue.
- Life jackets were not used by the crew.



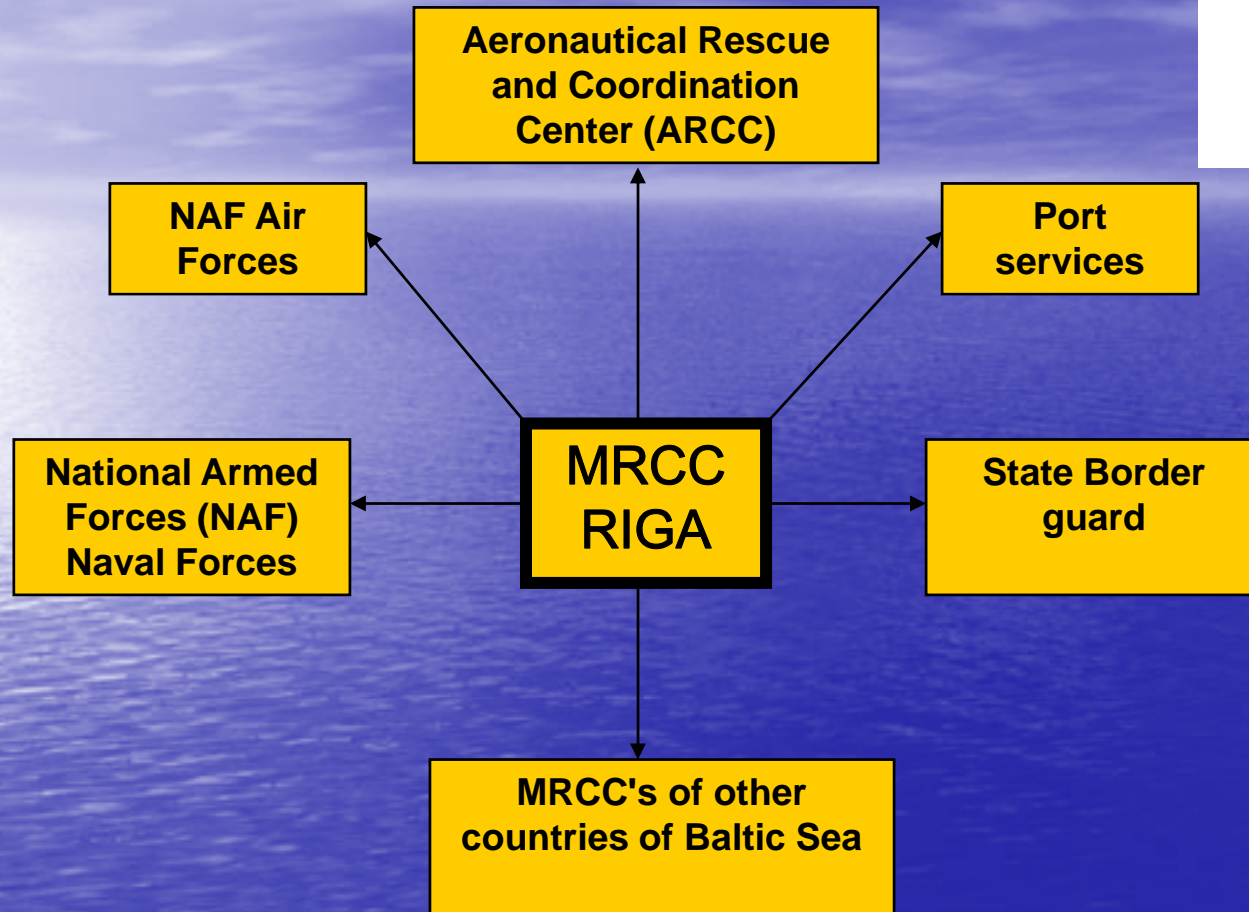
# PERSPECTIVE RECOMMENDATIONS



- To owners of fishing vsl. – to provide crew members with the inflatable life jackets, which are not bothering work on deck.



- To check the possibility to establish mobile SAR units in the biggest ports of Latvia, which are capable to render assistance in stormy weather condition.



- To improve co-operation between the main structures involved in SAR operations.





- Responsible authorities are investigating the legitimation of taking out old underwater cables from the sea bottom and later to deliver them to scrap receiving companies for revising.



- To port of Liepāja authorities – to develop the plan about the real port possibilities to render assistance in case of ship emergencies in port aquatorium.
- To Shipping Safety Inspection of Maritime Administration of Latvia – to find out the possibility for extracurricular inspections of the technical condition of fishing vsl. and possibility to perform extra training drills for fishing vsl. crews in co-operation with the coast and border guard SAR resources.



**THANK YOU FOR YOUR**  
**ATTENTION**