Challenges for SAR operations in the Barents Sea

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MARINTEK
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Presentation overview

- Maritime activities in the Barents Sea
- Accident statistics
- Norwegian SAR operations in 2010
- Challenges for Barents Sea SAR operations
  - Operational conditions
  - Traffic flow information
  - Available SAR resources
- Improving Barents Sea SAR
Maritime activities in the Barents Sea

- Destination and transit shipping
  - Oil and gas
  - Minerals
  - Other wet and dry bulk, containers
  - Cruise
- Fisheries
- Offshore field development and operation
- Naval operations

Location of existing or planned terminals for oil/gas export
Norwegian SAR area

• Norwegian SAR area is divided by the 65° N latitude
• Bodø RCC is responsible for the northern part
• Only the northern part will be discussed
Accident statistics

- Accident statistics prepared by Norwegian Maritime Administration
- Only accidents in waters covered by Bodø RCC is shown
- 2010 data refers to the period January – August
- Minimum value in 2005 – Why are the number increasing since then?
Accident statistics by ship types
Above 65º N
Norwegian SAR operations in 2010

Courtesy: 330 skvadronen/Forsvaret
**SAR responses from Bodø RCC (2010)**

<table>
<thead>
<tr>
<th>Type of incident</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistance to ships</td>
<td>104</td>
<td>119</td>
<td>116</td>
<td>278</td>
<td>366</td>
</tr>
<tr>
<td>Drifting vessel or object</td>
<td>35</td>
<td>53</td>
<td>35</td>
<td>40</td>
<td>37</td>
</tr>
<tr>
<td>Grounding</td>
<td>30</td>
<td>38</td>
<td>41</td>
<td>46</td>
<td>50</td>
</tr>
<tr>
<td>MEDEVAC</td>
<td>60</td>
<td>57</td>
<td>65</td>
<td>75</td>
<td>69</td>
</tr>
<tr>
<td>EPIRB</td>
<td>325</td>
<td>303</td>
<td>268</td>
<td>280</td>
<td>336</td>
</tr>
<tr>
<td>Others</td>
<td>148</td>
<td>131</td>
<td>156</td>
<td>216</td>
<td>207</td>
</tr>
<tr>
<td>Total number of incidents</td>
<td>702</td>
<td>701</td>
<td>681</td>
<td>935</td>
<td>1065</td>
</tr>
</tbody>
</table>
Challenges for SAR operations

Operational conditions

Significant wave height distribution

Courtesy: met.no
Challenges for SAR operations - Polar lows

100 Polar lows (1999 – 2010)

Picked out by forecasters from satellite images and wind observations

Courtesy: met.no
Challenges for SAR operations - ice

Area used for ice extent analysis

Ice chart for 29 March 2010
Challenges for SAR operations
- iceberg drift

1988 – 1992: 1070 icebergs observed
Challenges for SAR operations
- traffic flow information

• Satellite based AIS are combined with coastal AIS data
• A reporting procedure has been agreed between Norway and Iceland
• A reporting system will be developed by Norway and Russian Federation for vessels entering/leaving Russian waters
• BarentsWatch project will develop an improved surveillance system and making information available to relevant stakeholders
Challenges for SAR operations - remoteness

Large area – sparsely distributed SAR resources

Present Norwegian SAR resources

- SAR helicopters on mainland Northern Norway
- SAR helicopter on Svalbard
- Coast Guard vessels
- Norwegian Sea Rescue vessels (approx. 50)
Challenges for SAR operations - remoteness

• Russian SAR resources
  – Helicopters – not documented, no info from MRCC
  – 3 vessels
  – New supply vessels has been built to support Varandey operations
  – Significant number of navy vessels
Improving Barents Sea SAR

- New co-operation agreement for Arctic SAR procedures to be approved by Arctic Council
- New vessels to be built by Russia to fulfill a governmental decision from October 2010 and the federal program “Development of the transport system of Russia for 2010 – 2015”
  - 37 new salvage units will be built.
  - Of these 15 have been given Arctic waters as their first priority.
- Norway is in the process of ordering new SAR helicopters
Challenges for SAR operations - short survival time

- Due to the cold water temperature the survival time for persons in the water is short
- Present personal survival gear on board merchant ships is not designed for cold water incidents
- A norwegian study states that the present survival gear used for North Sea oil and gas personnel is not satisfactory for operations in the Barents Sea
- Will there be any recommendations in the new Polar Code?
Improving Barents Sea SAR

• Increasing surveillance activities to have an overview of vessels in different sections of the Barents Sea
• Bi-lateral and multi national SAR exercises, such as Barents Rescue
• Selection and training of SAR personnel
• Increasing SAR capacity so that time in water is short before rescue – due to low sea water and ambiant air temperature
• Extend survival time – improved survival gear
Stern ramp design for launch/recovery of MOB boat
FSV "STRIL POSEIDON"
Field tests 2004 - 2005

Field Support Vessel
• (91 m / 4500 tons/20 knots)

Fast Rescue Vessel
• (11.5 m / 7.0 tons / 40 knots)

Operational area
• HALTENBANKEN Winter Season – up to SS9 (25 m waves)
• Test condition: SS4 – SS6
  \( H_s = 1.6 \text{ m} - H_s = 4.6 \text{ m} \)

Cooperative effort:
• Simon Møkster Shipping
• STATOIL
• MARINTEK
Improving Barents Sea SAR

• Oil companies have to set up their own emergency response resources for Barents Sea oil and gas activities
  – New vessels are supporting the Varandey loading operations
  – Vessels will be ordered when Shtokman development starts
  – Vessels will be supporting the Goliat FPSO
  – These vessels may assist in future SAR operations
Acknowledgement

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  – The Norwegian Barents Secretariat
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