Operationalising the Polar Code in the Arctic Ocean: Insurance Industry Contributions

6th Symposium on the Impacts of an Ice-Diminishing Arctic on Naval and Maritime Operations

Navy Heritage Centre and US Naval Memorial
Washington .D.C
USA
15.07.2015

Michael Kingston
Marine Trade & Energy  DWF LLP
15 July 2015
The Polar Code – Entry into force January 2017

- The Polar Code is not a stand alone Convention. It will come into force as an amendment to 3 existing Conventions:

- International Convention for the Prevention of Pollution from Ships (MARPOL)
  

- The Safety of Life as Sea Convention (SOLAS) 1974
  
  Adoption: 1 November 1974; Entry into force: 25 May 1980

- The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW)
  
  Adoption: 7 July 1978; Entry into force: 28 April 1984; Major revisions in 1995 and 2010
Deep Water Horizon – Criminal Charges

BP oil spill: Criminal cases largely unresolved 5 years after Deepwater Horizon blowout

Robert Kaluzza, second from right, a BP well site leader from the Deepwater Horizon oil rig explosion, arrives with his legal team at Federal Court to be arraigned on manslaughter charges in New Orleans, Wednesday, Nov. 28, 2012. (AP Photo/Gerald Herbert)

Most Read

- Komodo dragon bite sends Nebraska zoo worker to hospital
- Strong thunderstorm enters Baton Rouge area with hail, high winds; flooding possible
Deep Water Horizon – Further Problems

Spike in dead dolphins 'linked to BP oil spill disaster'

A SPIKE in the number of dolphins dying in the Gulf of Mexico may have been a direct result of the BP oil spill disaster, new evidence suggests.

By Lavi Winchestar
Polar Code – A Brief History

[Image of a cargo ship with text: FEDNAV DELIVERING A HIGHER STANDARD]
September 9th 2012 – Arctic Sea Ice Hits Smallest Extent In Satellite Era (Photo Courtesy of NASA)
Deepwater Horizon 2010

- 20 April 2010
- 11 people killed
- Result – high level review of regulation on an unprecedented level
In Memoriam

Jason Anderson
Senior tool pusher

Karl Kleppinger
Roughneck

Dewey Revette
Driller

Adam Weise
Roughneck

Stephen Curtis
Assistant driller

Shane Roshto
Roughneck

Donald Clark
Assistant driller

Wyatt Kemp
Derrick man

Dale Burkeen
Crane operator

Gordon Jones
Mud engineer

Blair Manuel
Mud engineer

• The Gulf Oil Disaster and the Future of Offshore Drilling
• US Commission Report to the President
• 11 January 2011
Piper Alpha, UK North Sea 1988

- July 1988
- 167 people killed
- Result – high level review of UK regulatory regime
Alexander L Kielland 1980, Norway

- 27 March 1980
- 123 people killed
- Result – High level review of Norwegian regulation
International Convention on Civil Liability for Oil Pollution Damage resulting from Exploration for and Exploitation of seabed Mineral Resources – in draft since 1977
UK Review

OSPRAG Capping Kit
## Lack of Consistency in Liability Regimes Across World

<table>
<thead>
<tr>
<th></th>
<th>UK</th>
<th>US</th>
<th>Brazil</th>
<th>Australia</th>
<th>Russia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of government involvement</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Standard response procedures in place?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Legal process</td>
<td>Efficient &amp; experienced</td>
<td>Efficient &amp; experienced</td>
<td>Slow &amp; unpredictable</td>
<td>Efficient &amp; experienced</td>
<td>Mixed bag</td>
</tr>
<tr>
<td>Pollution Liability – strict or fault based</td>
<td>Strict up to OPOL limit Fault based there after</td>
<td>Strict up to OPA 90 limit</td>
<td>Strict</td>
<td>Fault based under OPGGS Act 2006</td>
<td>Strict</td>
</tr>
<tr>
<td>Limitation of liability for operators of vessels</td>
<td>It depends on the definition of a vessel? Is drilling ship/ Little Jewel a vessel?</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Punitive damages</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No but Moral Damages</td>
</tr>
<tr>
<td>Are exclusion clauses enforceable?</td>
<td>As a general rule, yes, subject to the precise wording. Liability to an injured party for personal injury/death cannot be excluded.</td>
<td>Yes, save for gross negligence or wilful misconduct</td>
<td>Difficult in this situation</td>
<td>Yes but often circumstances under CAA 2010</td>
<td>Yes but not EG: personal injury</td>
</tr>
<tr>
<td>Criminal liability</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Executive Summary

- Rapid and Disruptive Change presents uneven prospects
- Arctic likely to attract potential $100BN investment
- **Significant knowledge gaps**
- Arctic conditions remain challenging and unpredictable
- **Environmental consequences** of disasters likely to be worse than other regions
- Politics of Arctic economic development controversial and fluid
- **Continued development** of Governance frameworks with reinforcements where possible
- **Risk Management** is fundamental
Delimitation, according to IMO Guidelines for Ships Operating in Polar Waters
Wreck Removal – The Costa Concordia
Global Location of Equipment

Figure 4: Principal base location of heavy lifting gear

Source: Samuel Stewart & Co
Political Legitimacy

LIVE action against Cairn’s Arctic oil rig
Titanic – Departed Southampton 10.04.1912
Sank off Newfoundland 15.04.1912

Unsinkable Titanic

A modern marvel of construction, the Titanic was the largest and most luxurious passenger vessel of its time. Thought to be unsinkable, the Titanic was equipped with eight watertight compartments on the hull of the boat that would close if water entered them allowing the Titanic to stay afloat. The sheer size and technological advancements present on the Titanic was the main reason why passengers and crew believed the ship to be unsinkable.
Human Error – responsible for 75% of incidents

FATIGUE
International Maritime Organisation (IMO)
Cruise Ship off the Greenland Coast
“Nordvik” is an Ice 1 class (L4) tanker and is only allowed to sail on the Northern Sea Route (NSR) in light Ice conditions. The ice conditions in the northeastern part of the Kara Sea were regarded as “medium” by Roshydromet in the period when the accident happened.
Akademik Shokalskiy – Antarctic January 2013
### IACS Polar Class Rules - Interpretation

#### Polar Class Ice Description (based on WMO Sea Ice Nomenclature)

<table>
<thead>
<tr>
<th>Polar Class</th>
<th>Ice Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC 1</td>
<td>Year-round operation in all Polar waters</td>
</tr>
<tr>
<td>PC 2</td>
<td>Year-round operation in moderate multi year ice conditions</td>
</tr>
<tr>
<td>PC 3</td>
<td>Year-round operation in second-year ice which may include multi-year ice inclusions</td>
</tr>
<tr>
<td>PC 4</td>
<td>Year-round operation in thick first-year ice which may include old ice inclusions</td>
</tr>
<tr>
<td>PC 5</td>
<td>Year-round operation in medium first-year ice which may include old ice inclusions</td>
</tr>
<tr>
<td>PC 6</td>
<td>Summer/autumn operation in medium first year ice which may include old ice inclusions</td>
</tr>
<tr>
<td>PC 7</td>
<td>Summer/autumn operation in thin first-year ice which may include old ice inclusions</td>
</tr>
</tbody>
</table>

- How can these be applied to a real operation?
- Where can a vessel operate?
- When can it operate?
Insurers’ attitude to insuring above 70° North
So what can we do about this to make it work?

- The Arctic should be divided into distinct geographical areas – based on ice conditions
  - Not to detailed to start
- There shall be a number of seasons established in a year – perhaps 3-4 – that captures ice seasons with ice coverage and hardness
  - Keep it simple
  - Parameters reflects IACS and IMO Polar Code
- Avoid politics – each Arctic country responsible for rules in their “sector” of the Arctic.
- Justification: The Arctic SAR agreement signed by Arctic Council member states.
Workshop on
Bridging the Arctic marine risk gap -
The need for a cross Arctic Ice Regime – linking ice conditions to ice class requirements

12 March 2014
London – Lloyd’s Adam’s Room, One Lime Street
London, UK, EC3M 7HA
Progress – Recommendations for an Ice regime and forum for best practice made to the Arctic Council in time for meeting with IMO General Secretary
Developments in Working Group at MSC93 – June 2014 – ‘Arctic wide ice regime developments’

• MSC93: Agreement that limitations for operating in ice to be included on the Certificate

• MSC93 proposed initial guidance on limitations for operating in ice:
  • MSC93/WP.7/Add1, Para 10: in order to include the operational limitations in ice in the certificate, the group included a guidance in square brackets in part I-B of the draft Code, which will need to be further developed in conjunction with section 1.5 of part I-A, before the adoption of the Code (see part I-B, Additional guidance to chapter 1, Limiting ice capabilities for the Polar Ship Certificate).

• In this context, the group noted that the observer from IACS stated that IACS would be willing to undertake further work on the guidance with the intention to submit a document to MSC 94. The group also noted that some interested delegations would cooperate with IACS on this necessary and urgent work.
Participants and structure of informal group

Technical Group: IACS, Canada, Denmark, Finland, Russia, Sweden

Informal Correspondence Group: email group consisting of volunteer members from MSC93 WG
Consolidation of Existing Experience

Key Concepts: Consolidation of existing experience

Technical group’s experience with ice class rules and ship operations in ice overlaid on initial MSC93 proposal

- **Canada experience**
  - Canadian Arctic Classes (CAC), Type Classes

- **Denmark experience**
  - Baltic (FSICR) Classes in Arctic conditions

- **Finland / Sweden experience**
  - Baltic (FSICR) Classes

- **Russia experience**
  - RMRS Arctic (Arc) Categories, RMRS Ice Categories

**Consolidated Level ice (100% concentration) limit**

**IACS Polar Classes Technical Background**
Goal of Technical Group:

Develop a decision making system that can be used for voyage planning and “on the bridge” that uses the actual ice conditions, ice class and operational mode.

Polar Operational Limit Assessment Risk Indexing System (POLARIS)

- Actual ice conditions
- Ice class of ship
- Icebreaker escort or independent

INPUT → RISK LEVEL → OPERATION

Safer and Cleaner Shipping
### POLARIS: Evaluation Criteria (Independent Operations)

<table>
<thead>
<tr>
<th>( \text{RIO}_{\text{SHIP}} )</th>
<th>Category A &amp; B (PC1 – PC7)</th>
<th>Category C (below PC7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{RIO} \geq 0 )</td>
<td>Operation Permitted</td>
<td>Operation Permitted</td>
</tr>
<tr>
<td>(-10 \leq \text{RIO} &lt; 0)</td>
<td>Limited Speed Operation</td>
<td>Operation Not Permitted</td>
</tr>
<tr>
<td></td>
<td>Permitted (See Table 1.3)</td>
<td></td>
</tr>
<tr>
<td>( \text{RIO} &lt; -10 )</td>
<td>Operation Not Permitted</td>
<td>Operation Not Permitted</td>
</tr>
</tbody>
</table>
Table 1.3 Marginal capability speed limitations

<table>
<thead>
<tr>
<th>Ship Category (ice class)</th>
<th>Independent Operation</th>
<th>Escorted Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Speed (knots)</td>
<td>Speed (knots)</td>
</tr>
<tr>
<td>A (PC1 – PC2)</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>A (PC3 – PC5)</td>
<td>5 knots</td>
<td>5 knots</td>
</tr>
<tr>
<td>B (PC6 – PC7)</td>
<td>3 knots</td>
<td>3 knots</td>
</tr>
<tr>
<td>C (IA Super - IA)</td>
<td>NA</td>
<td>3 knots</td>
</tr>
<tr>
<td>C (below IA)</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

- Acknowledges that there is not a finite point when the ship cannot operate
- Based on IACS ice class rule formulations
### Key Concepts: Partial Ice Concentration Approach

#### Increasing ice thickness (severity)

![Ice Thickness Table](image)

- **Polar Ship Categories**: A, B, C
- **Ice Class**: PC 1, PC 2, PC 3, PC 4, PC 5, PC 6, PC 7, IA Super, IA, 1A, 1B, 1C
- **Risk Values (RVs)**: Ice Free, New Ice, Grey Ice, Grey White Ice, Thin First Year 1st Stage, Thin First Year 2nd Stage, Medium First Year 1st Stage, Medium First Year 2nd Stage, Thick First Year, Second Year, Light Multi Year, Heavy Multi Year

**Increased Risk**

- Increased risk with increasing ice thickness (severity).
POLARIS: An operations / planning tool

- Considering a voyage through the Northwest Passage at the time of year that historically coincides with minimum ice extent (10-29 Sep 2014)
- Two ice charts used (CIS Canadian Arctic – East & West) plot overlays the minimum RIOs from each of three specific days (Sept 15, 22 and 29)
- Ship ice class = Baltic 1A
- NO GO!

Ice Class IA POLARIS Summer Minimum RIOs for 9/10-29

Safer and Cleaner Shipping
POLARIS: An operations / planning tool

- Consider the same voyage and the same ice charts
- Change ship to ice class = PC 4
- GO! - slow speed (cautious operations) for part of the trip
More Work to – be done – Tragedy in the Bering Sea 31 March 2015

“More than 50 fishermen feared dead in Bering Sea trawler tragedy”
Shell Heads for the Arctic Again

The Telegraph

Barack Obama gives Shell go-ahead to drill for oil in Alaskan Arctic

Anglo-Dutch oil giant to return to the Chukchi Sea in search for oil despite concerns for the environment

By Andrew Critchlow, Commodities editor
9.13PM BST 31 Mar 2015
Learning from the lessons of history
Insurers’ attitude to insuring above 70º North

Polar Code + Ice Regime + Best Practice = Insurance = Trade & Investment = Sustainable Arctic Development
Our firm is driven by its core Values which focus on:

- Our Clients
- Our People
- Our Community
- Our Environment
The Korean Ferry Tragedy – A collective failing – International Regulation / Industry / Governments
Ice Coverage Around Greenland

August – “Ice Free”

November – Icing up

February – heavy ice

May
Map of location Citronen project Northern Greenland
Prevention – Norwegian Coastal Administration

Traffic Separation System - TSS