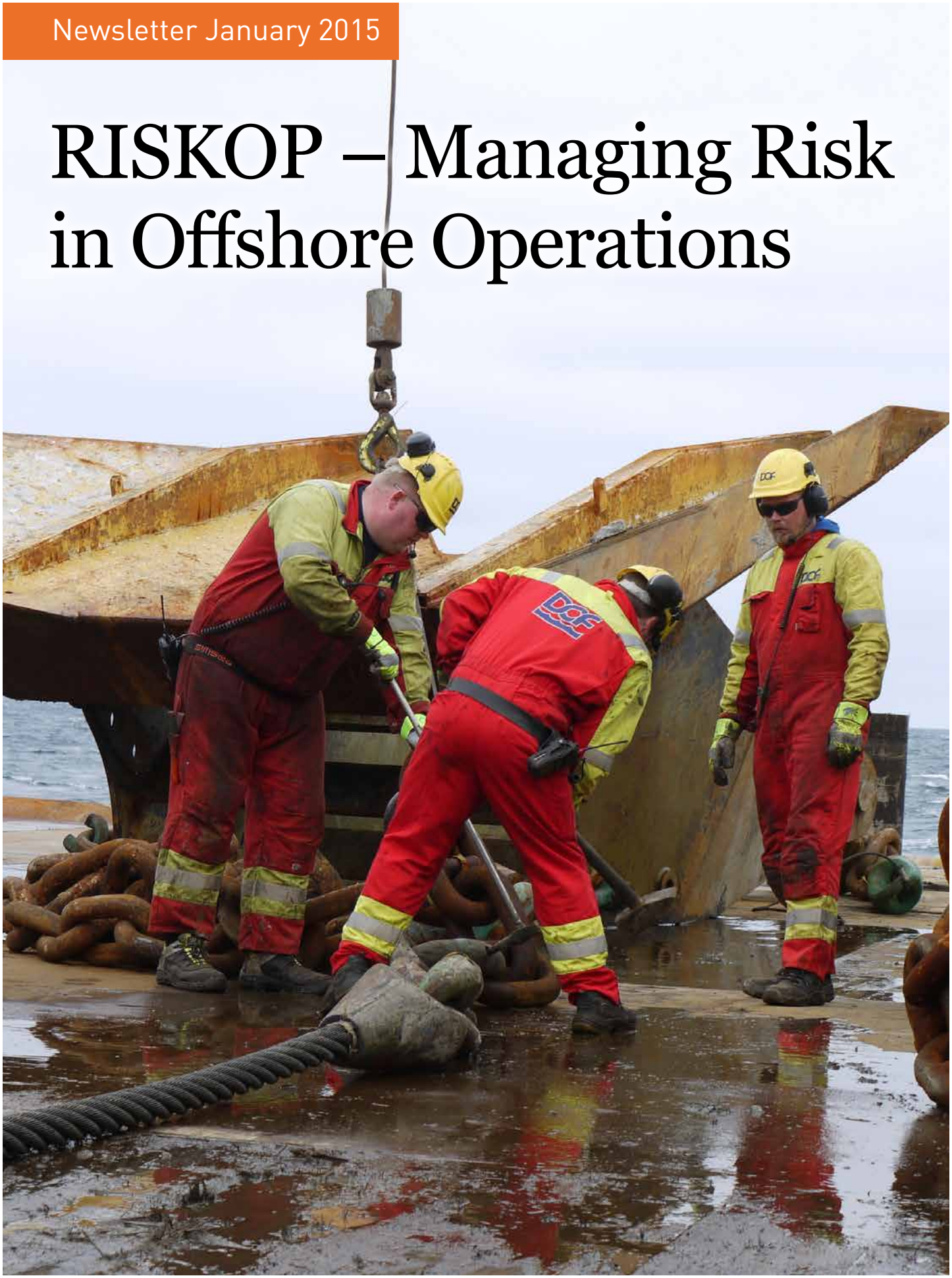
Newsletter January 2015

RISKOP – Managing Risk in Offshore Operations



STORD/HAUGESUND UNIVERSITY COLLEGE

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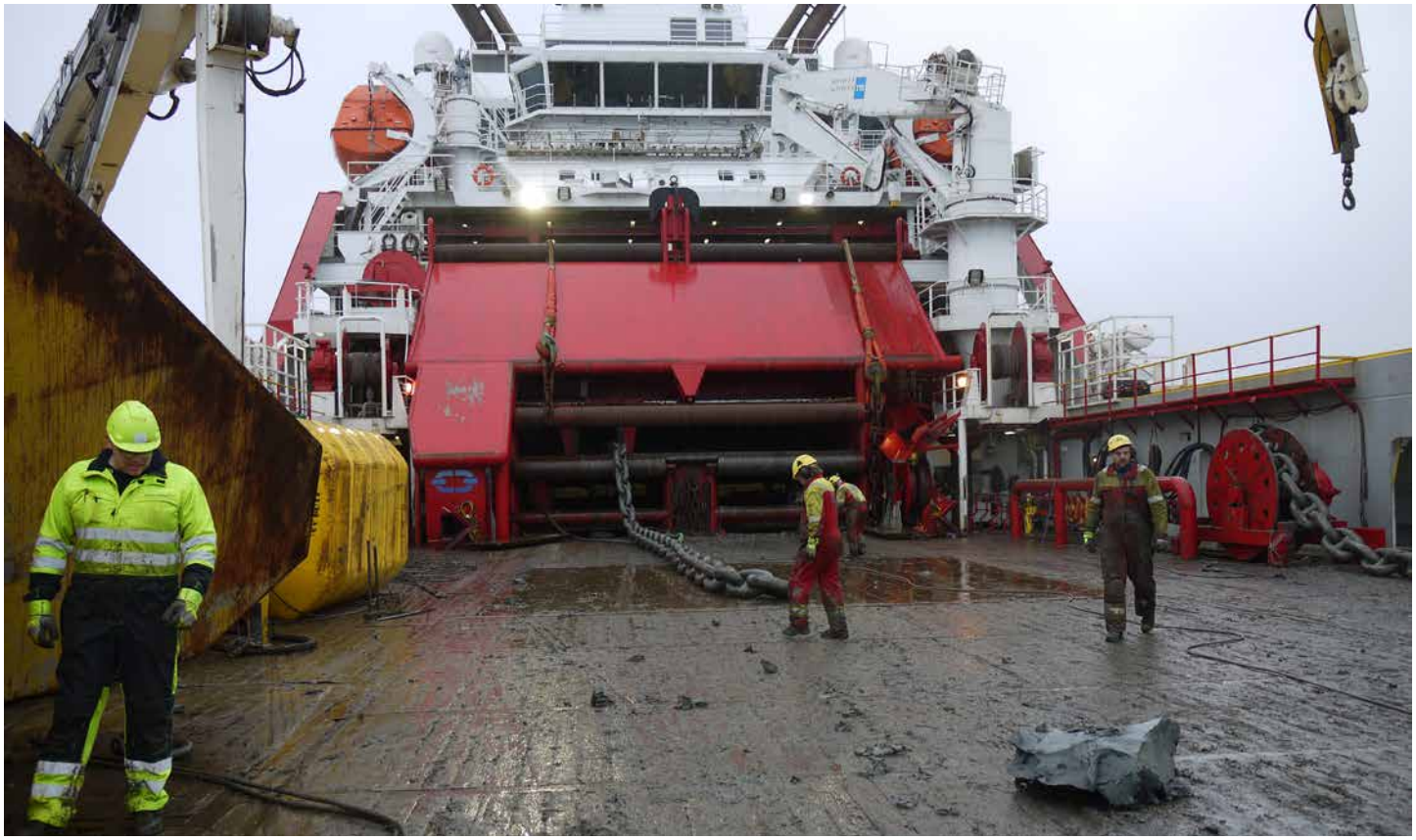
PETRO MARITIME RESEARCH TEAM
HSH, HAUGESUND

The RISKOP project studies how risk is identified and managed in order to increase safety in offshore operations. This knowledge will be converted to teaching programs at HSH, our partners and SIMSEA. The project is running for a period of four years from June 2013 and is financed by the Norwegian Research Council, Lundin Norway, Odfjell Drilling, Knutsen OAS, Solstad Offshore, Østensjø Rederi, Eidesvik Offshore, Farstad Shipping, Deep Ocean and Westcon Løfteteknikk. The project includes SINTEF, POLYTEC, SIMSEA and Kongsberg Maritime as research partners and a resource group of the professors: Helen Sampson, Rhona Flin, both UK, Erik Hollnagel, Denmark, Ole Andreas Engen, Norway and Richard Bagozzi, USA.

Anchor Handling Fieldworks Summer 2014

The purpose of the first fieldwork was to observe a pre-lay operation in the Barents Sea. One of the larger Anchor Handling Vessels (AHV) available in Norway was equipped with eight anchors and chains at a depot on the west coast of Norway and then travelled the inner route all the way via Tromsø to a location approximately one day journey off the coast. The operation ran continuously for almost three days.

The photos are illustrational and not related to any of the described field trips.



It started at 3 am and they fiddled a bit with the first anchor. Thereafter it went smoothly until some minor mishap caused the flow to halt. The mishap was corrected, and a new flow achieved until a new mishap, etc.

The second fieldwork was on an AHV engaged in an integrated rig-move together with three other vessels in the Norwegian Sea. Mobilisation took place at a depot on the west coast. The AHV's headed out in succession; the first and leading ship arrived ahead of us, located and put buoys on all the anchor chains and prepared for us to retrieve them. Smooth, beautiful sailing, great weather and only a long gentle swell. Twenty-four hours sailing and we were at the site where the operation began immediately. The first anchor came loose in seven minutes. The second, too was a breeze. The third, however, sat hard. The seasoned crew tried all sorts of tricks, explained that the absence of a decent swell made the job more difficult. Usually the ship would heave, create a rhythmic pull on the wire,

and rock the anchor loose. Now they had to try and use the motors to achieve the same results. Slow, smooth and easy, in the end they all came loose. We travelled to the new location. Anchors were set, one by one. Again everything ran like a well-oiled machine only interrupted by minor mishaps.

To the observer the smooth and efficient flow seemed to be a direct consequence of detailed planning, good technical procedures and effective communications between all parties. Good procedures therefore seems to be the foundation for a successful operation, and the operating crew appear to be acutely aware of this. They go through the "Scope of Work" at the beginning of the operation, and once more at meetings for each department. A copy is always available on the bridge and in the "dirty mess"for the deck crew to consult. The two representatives from the mooring company keep detailed track of all items loaded onto the ship and going to sea, continuously consulting the procedures. The survey company representatives keep a detailed watch on our position in relation to the plans.

Mishaps happen regardless of thorough planning. They seem to be unavoidable in spite of strong ideological pressure to ignore that fact. Mistakes are made, machines break down, objects tangle, anchors rotate the wrong way, etc., etc. For some types of mishaps there are procedures for how to correct them, but not for others. The latter are of particular interest for research on risk and safety. How do people really handle risk when risk has not been formalised? Do they actually choose optimally safe ways when the operational logic of investigating, discovering and solving practical problems demands attention to practical details and challenges their technical competence? Do they remember to pay lip service to the formal risk management systems while caught up in the flow of interactions and cooperation that demand that they can truly trust their colleagues, their managers and their employers?

Research is on!

RISKOP arranged workshops for partner companies and researchers this fall in October and November. It is really within the interplay between researchers, companies and the practitioners on board the vessels where exiting research emerges.

During workshops with operative representatives from the nine partner companies (captains, planners, engineers and managers) we may get a verification of the collected data before it's all collected. The practitioners in turn get a feeling for the type of data we collect and they build their basis for understanding and participating in the research. Workshops with internationally renowned scientists will to a greater extent ensure that important perspectives are considered in our research.

Traditional research on risk and safety has mainly been occupied with mistakes, incidents and accidents. In RISKOP we are not just preoccupied with occurring mistakes. We also ask: Why are most of the operations we observe going well? What are the characteristics of a successful operation? What and how do we learn from things going well?

Research, a risky business, or how do we write academic articles

In a project such as ours, we aim to combine academic research with practical relevance. The easiest example of the latter is when we can channel insights, findings and examples into our teaching practice, so that it becomes easier for students to see the connections between theory and the jobs that they go to. Sometimes, our research can also lead to recommendations for the businesses we are studying, but this tends to be a long process. The slow pace is due to the way research is translated into academic publications.

Social research may be prompted by a practical need in combination with known themes in existing academic literature. For example, the accident at the Three Mile Island nuclear power plant in the 1970s triggered the need to understand factors that could lead to potential disaster. Charles Perrow looked to complexity theory to make sense of this challenge, and developed the 'Normal Accidents Theory'.

A basic claim in this theory is that the combination of complex systems (many interrelated parts, were all mutual effects may not be knowable) with tight coupling (the interaction of the parts is so streamlined that ripple effects of a disturbance will spread fast) will, sooner or later, lead to accidents.

This claim, in turn, has lead both to suggestions for how to avoid disaster, and to new research and theory refinements.

When we try and get our own research published in journals with a good academic reputation it counts for something if we can show that we stand on the shoulder of giants, such as Perrow. Most researchers start out with some broad idea or question such as "How is risk discovered and mitigated in offshore operations"? But such broad ideas need to be translated into sharper ones and put in the context of earlier research. In addition, we should also be able to identify a piece that is missing in existing research and demonstrate that we help fill that gap. In short, to publish rather than perish, we should be able to make a case that our discoveries are not only relevant, but also original. In this way, research is itself a risky business.

Practically speaking, an idea and a set of data are most often first worked through in a paper presented at an academic conference. Based on feedback from colleagues, the work gets drafted into an article after identifying a 'target journal' and adapting to the requirements of that journal. If the work is accepted for review, the editors send it anonymously to academic reviewers that give written feedback and suggestions, most often after several months.

The authors reply to the comments, do revisions and resubmit the article for a new review. In some cases, this process is repeated several times over before a work is finally published. All of this takes time. The process helps quality assurance from an academic point of view, but less so with regard to practical relevance, which may only become clear on an even longer term. This can test the patience of researchers and practitioners alike.

Structure and flexibility

During the last two decades, the volume of regulations and procedures has grown in society in general and in high risk industries in particular. In these industries the complexity and size of management systems increase as disciplines become ever more specialized and the number of collaborating parties increases.
By choosing indicators, risks and other elements to track and measure, the focus concentrates around some relevant factors, and less attention is paid to other sets of data. In addition, implemented work processes often play out differently in practice than prescribed in the requirement. There is a need to get the job done. Unexpected factors, time pressure, limitation in cognitive capacity, and other factors results in practical adaptations.

Interesting research questions arise from this situation:

- How do regulations, procedures and management tools affect us? What are the intended and unintended consequences of these soft technologies?
- How do actors live and work with these procedures? Is there a gap between prescribed behavior and practice?
- Could these adaptations affect handling risk in positive or negative ways?

RISKOP is currently collecting relevant regulations and procedures from our partner shipping companies. We need insight into regulations and procedures that aim to handle risk in anchor handling and lifting operations to better understand the work processes and practices that we are studying.

Student research team

A student team at the University College has started examining incident and near miss reports on lifting operations and anchor handling operations from four offshore shipping companies. During the next semester they will analyze the material, focus their research and write their bachelor thesis. Hopefully, we are able to present some results from their research in the next issue of the RISKOP newsletter.

RISKOP and HSH Strongly Represented at NEON 2014 at the University of Stavanger in November

NEON represents a network of researchers and practitioners within the field of organization and leadership in Norway.

This year (2014) the main conference was held at the University of Stavanger with HSH, Stord/Haugesund University College, as coarranging partner.

The conference theme: Sustainable organizing; new space for change? During two days four keynote speakers, all professors from the Nordic countries, presented their ideas and reflections on how present and future expectations and requirements will impact organizing organizations in heavily changing environments. Within parallel sessions researchers from RISKOP presented our research:

- **Idar Johannessen:** Informal leadership redundancy: Balancing structure and flexibility in subsea operations.
- **Lene Jørgensen:** Risk mapping – day-to-day risk work in inter-organizational project management.

A couple of months earlier, at the ESREL conference in September in Wroclaw, Poland, one of our researchers, **Jan R. Jonassen,** presented:

- Risk management in anchor-handling operations: The Balance between control and autonomy, ref the article below.

NEON conferences are common responsibilities for researchers. In the course of time the participants have left their obvious footprints on the NEON profile and vitality, both in program development and publications within the field. This year the conference was a well-functioning collaboration between UiS, HSH and Iris.
The HSH team: Lise Langåker, John Ferkingstad, Idar Johannessen, Lene Jørgensen, Jan R. Jonassen og Åge Gjøsæter.

The Keynote speakers at NEON: Professors Maiken Schultz, Jan Erik Karlsen, Gudmund Hernes, Nils Brunsson and Erik Hollnagel.

Published articles this period:

1. **Gjøsæter, Åge Grønhaug, Kjell Xie, Chunyan (2014):** "Strategizing for Environmentally Sustainable Praxis". Beta (Scandinavian Journal of Business Research) Volume 28 (2) s. 154-172.
2. **Røyrvik, J., Skarholt, K., Lamvik, G.M. and Jonassen, J.R.:** "Risk management in anchor-handling operations: The Balance between control and autonomy" in: Nowakowski, T., Mlynczak, M., Jodejko-Pietruczuk, A. & Werbinska-Wojciechowska, S.: Safety and reliability, CRC Press 2015. ISBN 978-1-138-02681-0. Read the article in: http://hdl.handle.net/11250/224397.
3. **Jonassen, Jan R.:** "Effects of Multi-team Leadership on Collaboration and Integration in Subsea Operations", International Journal of Leadership Studies, USA; Winter issue 2014/15 (in press).

Some planned activities

January – February:	**Analysis and planning further data collection and fieldwork**
January 27th:	**Presentation to members of Maritime Forum, Tananger:**
	Trust in safety and mistrust in regulations?
February 4th:	**Presentation at "Haugesundskonferansen", the Research Council Special session: Research on Offshore Operations; Will focus on mistakes and accidents produce better safety?**
May:	**Workshop in Cardiff at SIRC, Seafarers International Research Centre, Cardiff University.**
June 16th – 17th:	**Partner meeting with all RISKOP business partners.**