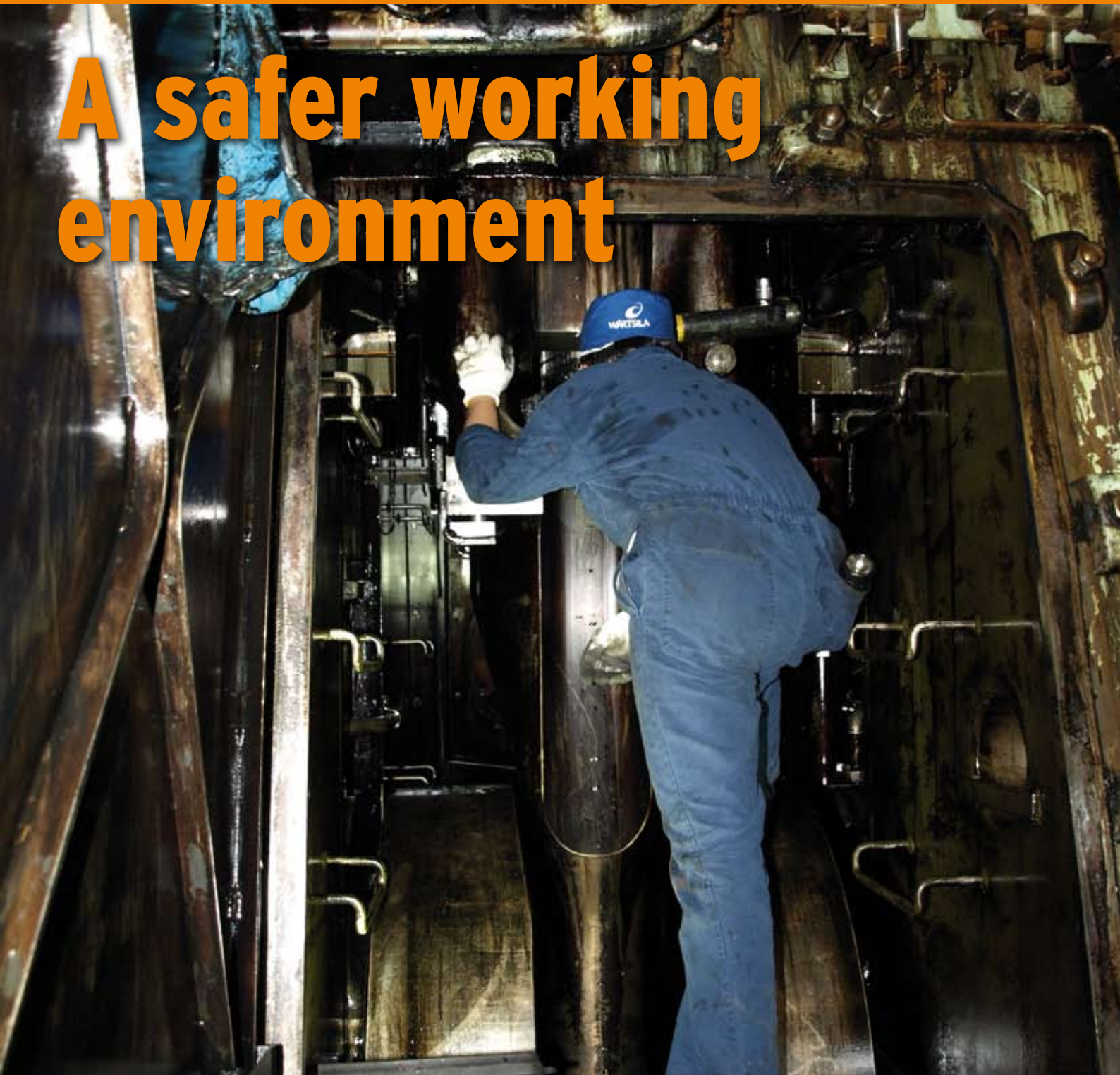


NORTH⁵⁷

The maritime research newsletter from Lighthouse | No 12, 2010

A safer working environment



Report from the third Lighthouse ERGO SHIP theme day

LIGHTHOUSE
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ERGO SHIP

New and exciting research in the Human Factors area

THE THIRD LIGHTHOUSE ERGO SHIP THEME DAY



Photo: Magnus Fredriksson

There are many significant issues within the working environment waiting to be explored, discussed and solved. For instance there is a lack of proper safety equipment and that mariners are prone to ignore the available protective clothing.

On the fourth Lighthouse theme day this year, Margareta Lützhöft from the Human Factors research group at Chalmers Shipping and Marine Technology presented the Ergo Ship theme area and the Human Factors research group's new PhD students:

PhD projects

Johannes Prison's area is ship sense; what does it mean to have ship sense

and what mechanisms lie behind it? Anders Brödje conducts research into operational procedures and the role of VTS operations in the future. VTS is also the subject for Gesa Praetorius' studies, where she is more focused on VTS from a safety perspective. Erik Styhr Petersen carries on research into user-centered design and how these methods can be used in industry. Håkan Hasewinkel has developed "Serious Games", where

computer games are compared to simulators in order to evaluate whether ship sim games can be used to learn navigation. The games are intended to complement simulators in education.

"It's not about replacing simulators, but you can use them in training and for homework," said Margareta Lützhöft.

No development for engine rooms

Monica Lundh, who recently took her

Ergo Ship Mission: Shaping ships for people by providing Human Factors knowledge, methods and tools.

Ergo Ship research concerns evaluation and analysis of work onboard, and the planning and user-centred design of control centres on ships, mainly the ship's bridge and engine control room. We perform research onboard and in simulators. This cross-disciplinary research falls within the Human Factors discipline, bringing together technology, humans and organisational issues and is performed in close cooperation with seafarers and the shipping industry.

doctor's degree, talked about engine rooms and engine control rooms. This area has been a subject for research since the late seventies, and while there has been some technical development in the past 30 years, there has been no discussion about the impact these developments have had on the onboard personnel.

"If you compare a bridge and an engine room, you can see a development in the design of the bridge from the sixties up until now. But the engine room looks the same!" said Lundh.

She interviewed crew members about their working environment, and the results show that there is a range of problems, in particular poor logistics. The personnel find their own imaginative solutions and have adapted to the conditions. This is an area where a lot has to be done to improve the working environment.

Mariners risk their health

Health risks on board are something that Karl Forsell has studied at Sahlgrenska University Hospital in Gothenburg. His research shows that there is a lack of proper protection for handling hazardous fluids and gases, as well as soot. Risks for seafarers include accidents, cancer, and heart vascular diseases. They are also often hit by lifestyle related diseases from tobacco, alcohol, and overweight. A number of research projects are currently being carried on in this area.

One of the mariners who have seen this at first hand is Aron Leth, who is currently a student at the marine



Photo: Katarina Anicic

Monica Lundh, Human Factors lecturer and researcher, talking about engine room working environment at the third Ergo Ship theme day.



Photo: Gustav Mellin



Photo: Anja Törnqvist

engineering program at Chalmers. Aron Leth has spent many years at sea and has given a lot of thought to the risks he and his colleagues expose themselves to.

Oil, noise, vibrations, burns, and electro-magnetic exposure are some of the risks he mentions. Although you wear gloves, the oil will eventually ooze into the fabric and reach the skin. Many of

Business Ship

Mission: Providing knowledge and tools for improved and sustainable business practices in the maritime sector.

Multi-disciplinary research from Business Ship at the School of Business, Economics and Law at the University of Gothenburg puts shipping into a wider business context of international trade, logistics, finance, laws and regulation.

Cargo Ship

Mission: Providing knowledge and tools for how to shape ships for safe, sustainable and transport-efficient transportation

Cargo Ship deals with education and research, with a focus on marine structures, marine transport solutions and their characteristics and roles in the transport chain. Focus is on the ship as a cargo carrier with transport efficiency as the overall driver, considering, among other factors, safety, sustainable development, global welfare and environmental impact.

Eco Ship

Mission: Providing knowledge and tools for sustainable shipping systems.

Eco Ship focuses on sustainable resource use and minimization of environmental impact from shipping and maritime activities. This encompasses optimization of ship design and propulsion, energy efficiency and energy management at ship level and in the logistics chain as well as the impact of different regulatory tools, international conventions and organizational measures.

Safe Ship

Mission: To establish and promote measures for safe and secure shipping.

Safe Ship uses a systematic approach in order to create a holistic view of safety. Safety in this context is divided into the following areas: regulation and control, organisation, training, ship and equipment design and operations. Each area addresses different activities and functions in the safety chain and can be organized as proactive measures, accident response, and post-accident response. Examples of important research areas are safe navigation; safe maneuvering; damage stability; safe return to port; emergency response; and crisis management. Important tools are case studies, risk analysis, and simulator studies.

his colleagues don't even bother using protective gloves.

"At first you use them, but then you find yourself walking around with dirty gloves. You want to do a good job as easily and quickly as possible," said Leth.

Naval architecture and the environment

Professor Emeritus Anders Ulfvarson talked about the engine rooms in a historical perspective and about the challenge for naval architecture students. It has been rather so-so with the placing of the engine rooms and they have to be planned for ease of maintenance and for reducing operational errors.

From the Swedish Shipowners' Association, Carl Carlsson talked about the environmental challenges in the maritime area.

"Europe is well aware of the problems, but there are various different solutions," said Carlsson. This summer, the association launched its 'Baltic Sea Position' in an attempt to show the politicians that shipping can be environment friendly, said Carlsson.

All powerpoint presentations from the Ergo Ship theme day can be found on the Lighthouse website, where you can also read all the latest Lighthouse news. Go to www.lighthouse.nu

Katarina Anicic, Information Officer

From the director



Photo: Jan-Olof Yxell

Anders Marby
Director Lighthouse

Lighthouse - moving on

This is what has been happening since our last newsletter:

- ▶ LIGHTHOUSE has been evaluated by VINNOVA. The evaluation was succesful and we are now making further improvements for LIGHTHOUSE phase two. Read the VINNOVA report at www.lighthouse.nu
- ▶ LIGHTHOUSE held the third Ergo Ship theme day with reference group meeting. You can find all presentations at www.lighthouse.nu LIGHTHOUSE theme days provide insight into on-going research projects and an opportunity for representatives from commerce, academia and civic authorities to meet and identify issues and research proposals from within the Lighthouse theme areas.
- ▶ **Coming events:**
 - Theme day Safe Ship 6th October 2010
 - Theme day Cargo Ship 18th November 2010
 - The annual LIGHTHOUSE day will be held 19th november 2010

Read about all the coming events and current projects, Lighthouse news and background information at www.lighthouse.nu

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