



SAN NEWS

Work environment and safety in shipping

YEAR 35 3 /11

THEME: RISK ASSESSMENTS

Better risk assessments with help from the crew	1	Outlook	4
Concerns about the use of onshore electricity	3	Swedish Transport Agency, Maritime Department	5
Increased traffic behind more accidents	3	Profile: Michael Wendel	6
Editor has the floor	4	In brief	7

Better risk assessments with help from the crew

Simple, clear templates for risk assessments. Suggestions for how risks can be examined methodically and texts that explain the importance of doing it. On commission from Wallenius, Ida Larsson is working out a clearer concept of work environment and safety in the shipping company.

Most people probably know that risk assessments are required for dangerous work onboard. But how they should be implemented, how the level of risk should be assessed and how often they should be made is perhaps not so obvious. Wallenius Marine is currently running a project to facilitate risk assessments and make them more uniform between different vessels. The work is being led by Ida Larsson, who is normally third mate on *Fedora* but since the spring she has been based at the head office in Stockholm. She is convinced that the new system will lead to better assessments.

More support

“You get much more support for how assessments should be made and I have included proposals for different methods that can be used. The fact that systematic work environment activities are digital and are posted on our intranet and integrated with the maintenance programme will lead to better visibility and a greater opportunity to learn from each other.”

She has developed a new template



Ida Larsson usually works as third mate on Fedora, but has been working since last spring with the project to facilitate risk assessments. Private photograph.

for risk analyses. The risk of a certain event occurring during a specific job is assessed on a five-point scale, from very unlikely to probable. A similar assessment of the consequences if the event occurs is then made, also on a scale of one to five. Finally, the risk is multiplied by the consequence. If the result is four or more then measures are required, but a documented action plan as well as a new assessment and calculation must be made before work can begin.

“Let’s take an example - working at heights where someone has to climb the mast. It may be cold and icy and the risk of falling is assessed as four. The injuries sustained if someone falls could be very serious and so the consequences are five. It is then written in the action plan that a harness must be used and a new assessment is made. The risk of falling is still a four, but the harness has reduced the consequences down to one and the work can be carried out,” says Ida Larsson.

The analysis form includes brief explanations of how risks and consequences should be assessed.

“Some might think that cutting yourself is a five, while another person considers a five to be when the ship sinks. You need something to go by so that assessments will be similar.”

“When risk assessments are made, not only personal injury should be taken into account but also psychosocial risks, mechanical damage, oil spills and delays,” says Ida Larsson.

According to the Work Environment Act, a risk analysis must be made prior to any work that could lead to accidents or ill-health. A variety of risky jobs are carried out every week onboard, but if a written analysis must be made on every occasion there is a risk that the process eventually becomes routine and the analysis is made without closer thought. To prevent this, Ida Larsson has added an analysis aid with examples of factors that can change from one day to the next. These may include fatigue, weather, icing and heavy seas.

“Some might think that cutting yourself is a five, while another person considers a five to be when the ship sinks. You need something to go by so that assessments will be similar.”

“When I talked to crews out on the ships they did not always think that simple was best in this case. We think it should be a little more complicated so that people are forced to think twice,” says Ida Larsson.

Risk analysis not always necessary

Not all tasks will require a risk analysis; which are to be included is still under assessment. Tasks are classified into a three-level colour scale, in which red requires immediate analysis, and green means that the task can be performed without assessment. In between, there is a yellow field for work yet to be categorized.

“We have not decided on the yellow area yet. Take an example: putting out a pilot ladder. It’s a job that is done often and involves some risks, but maybe we don’t need to make a new analysis each time.”

Risk assessments have been made in the past at Wallenius, but analysis templates have been less detailed and paper documentation has been kept in files. The work will now be included in the



She has developed new templates for risk analyses. Photo by Klara Magnusson.

digital maintenance system onboard each vessel and will be controlled centrally.

“The idea is that you should go back and look at what you did last time and what the results were. Then you can build more into the next analysis and take the work one step further,” says Ida Larsson.

“Being able to see each others’ analyses is an incentive in itself,” she adds.

“The crews onboard are a little competitive and they like to be one up on their sister boats. If you see that someone else has made a good analysis, you want to do one that’s even better.”

There are texts linked to the analysis templates that can be used to guide the work. The company wants the analyses to be as complete as possible.

“If someone is going out to paint part of the ship, they want to see an analysis of the entire sequence of events from the time the person starts mixing the paint to when they do the job. It’s easy to become blind to the risks on your own ship, and that’s why it’s good to see what assessments others have made,” says Ida Larsson.

Experience and knowledge onboard

Her work is largely based on the Work Environment Act, but she has also had a lot of contact with the crews of several of the company’s vessels. “This has been one way of making the most of the experience and knowledge onboard,” says Ida Larsson.

“I’ve talked to maybe 15 people on different ships with various jobs, and they have given me a lot of good input. Contact with the ships has also helped to create acceptance of the system that may lead to people actually wanting to use it.”

To increase understanding of why

risk assessment is important, information on the Work Environment Act and texts from the Swedish Work Environment Authority’s website will be added to the shipping company’s intranet. Ida Larsson has added explanatory texts to the paragraphs.

“Among other things, I have drawn up a glossary to describe concepts that may not be widely known. For example, I don’t think that many of our Filipino crew members, and perhaps not all Swedes either, know how AFA Safety Insurance works. We have also translated all the material into English so that everyone onboard can understand it.”

Templates and documents for risk analyses will be entered into the maintenance system and texts from the Work Environment Authority will be filed in the quality manual. “The fact that everybody onboard has access to the materials is a major advantage,” says the communications manager at Wallenius Lines, Cecilia Kolga.

“Many of the employees read our intranet when they are at sea – you have plenty of time when you are sailing over the Pacific. But the system also gives us in the office a better view of the situation, and it will serve as a bank of experience that we can compile facts and statistics from.

The project has not resulted in any additional costs, either,” according to Cecilia Kolga.

“Instead of purchasing new systems, we have used the ones we already have. In fact you could say that this is profitable, because we use our resources even better.”

Ida Larsson will have completed her work in mid-October.

Linda Sundgren

Concerns about the use of onshore electricity

It is becoming increasingly widespread that ships use a shore-based electrical supply when mooring. However, many people are worried about handling the supply, particularly where there is high voltage in the cables. The Transport Agency is currently developing rules for connection to shore-based electrical supplies.

“We have not received any reports of accidents and I don’t really believe that this is a problem. But certainly, people’s concerns are definitely justified. Power is connected to the equivalent of small residential communities, and for high voltage ships this may be up to 10,000 volts, even though we only have a couple of those ships in Sweden,” says Mats Wennerström, ship inspector at the Transport Agency’s supervisory authority in Malmö.

Connecting ships to the onshore power grid has advantages. Aerial emissions are reduced and it is less expensive compared to electricity generated onboard. But although it is becoming more common there are still no regulations for connecting to high voltage supplies.

“Development is ahead of us and we have not quite caught up yet,” says Saeed Mohebbi at the Transport Agency. “But we are working on it and expect to have rules in place within one to one and a half years.”

Meanwhile, the authority refers to the international standard for the handling

of high voltage (IEC/PAS 60092-510) that is already in force onshore. According to this standard, monitoring, inspection and knowledge are all required.

“As far as electricity is concerned, it is always associated with dangers that can cause serious injury and damage to personnel and property. It is very important that people working with electricity are accredited or instructed by qualified personnel,” says Saeed Mohebbi.

Proper handling most important

Even with lower voltages in the cables, proper handling procedures are necessary to maintain safety. But according to Saeed Mohebbi, these are not always followed.

“It is important that the cables are not crushed or otherwise damaged, and sometimes they are installed in the wrong way. If there is no qualified electrician onboard, the chief engineer is responsible for ensuring that personnel involved in the installation work know what to do.”

Connections to shore-based electricity are covered by two sets of rules under different authorities; the Electrical Safety Board controls the shore side and Transport Agency is responsible for ships. The meeting point between these two is in the harbour.

“The onshore organization buys and installs equipment on the quayside. Then there is just a socket dangling in the air for the crewmembers to connect to the plant onboard,” says Mats Wennerström.



“Connecting the vessel to the onshore power grid has advantages, but people’s concerns are definitely justified,” says Mats Wennerström. Photo: Gothenburg harbour.

During his inspections he meets some seamen who dislike handling electricity. They want to be assured that they can trust the equipment and that they are handling it correctly.

“They are concerned that the ship-owners have bought the cheapest rather than the best and wonder why they have not been given any training,” he says.

Linda Sundgren

Increased traffic behind more accidents

Shipping accidents in Europe are increasing again and last year 61 people were killed. One reason is believed to be the increase in maritime traffic after the crisis year of 2009. There is also concern about more serious accidents due to ships being larger.

For the fourth consecutive year, the European Maritime Safety Agency, EMSA, is publishing a summary of accidents in and around European waters. After a decline in 2009, the number of accidents has increased again. Of the 559 that occurred last year, 45% were collisions, 22% were groundings and 13% were fires and explosions. Shipwrecks accounted for less

than 5% of the total. Of the 61 people who lost their lives at sea, 29 were on merchant ships, 20 on fishing vessels and 12 on other types of commercial vessels such as tugboats, anchor ships and supply ships for oil platforms. The death rate is up 17% from the previous year but is still lower than the figure of over 80 who died in 2007 and 2008.

Larger ships may increase risks

The reason for the increase in accidents is stated as more frequent traffic. The EMSA report also states that the risk of major accidents increases as ships constructed become larger. The largest accident last year occurred in November off the coast of Bulgaria. The 33 year old cargo

ship Karim 1 sank after a collision with the tanker Alessando DP. Five crewmen could be rescued, but five drowned. The largest ship that sank was Kea, which was 9800 gross registered tonnes. After having drifted while listing badly in rough seas, on March 30 she sank off the northwest of Spain. She had over 1000 tonnes of oil aboard and caused an almost three kilometer long oil slick. The majority of accidents in European waters in 2010 occurred in the Atlantic and the North Sea (64%) while 14% occurred in the Baltic Sea. The Mediterranean and the Black Sea accounted for over 20%, which is a major increase on the previous year.

Linda Sundgren

Social capital

The Danish MSSM Conference is an annual opportunity for all ship operators to meet and discuss safety, health and the work environment.

The conference is organized by Danish Sea Health together with Europe's Maritime Development Centre and the Danish Maritime Authority. For two tightly scheduled days, there are short lectures and workshops in which both professionals and researchers give their views on current issues.

The conference also draws a large number of organizations that exhibit the latest in safety equipment, training and so on. This year's conference theme was social capital and how this resource can be managed in the best interests of both employees and companies.

Families' worries

Among the opening speakers was Hans Schneider, Chief of Operations for A2SEA, the company that in ten years has grown from a one-man business into a market leader in offshore wind farm installations. Schneider explained



how they continually developed their systematic work environment and safety activities in an expanding and risky field, with so much specialized equip-

ment that authorities could not provide information on which regulations applied to their specially-designed ships and jack-up barges.

During the two conference days there were 16 parallel sessions on safety, health and environment to choose from, with each session offering one or more presentations. Under the heading of "Crisis management for pirate attacks" not only the company's efforts to reduce the risk

of attack were discussed, but also how to respond to the concerns of families of seamen who sail in pirate-ridden waters, and how a crisis psychologist works after the damage is done. Another very interesting session dealt with the work environment during new construction of ships. Morten Larsen, technical and nautical director of Fjord Line, and Jan Rasmussen, work environment consultant at Danish Sea Health, talked about their joint work in the design of Fjord Line's two new RoPax ferries for delivery in 2012.



Consultant in work environment

The goal was to ensure a smooth flow of all the tasks onboard early on, during the design and construction phase, so that the ships are built in such a way that the crew can work safely and effectively without risk of accidents and ill health.

The speakers said that when the decks, firewalls, ventilation and plumbing are all designed, it is both difficult and expensive to make changes and incorporate new ideas. The work environment consultant acted as a safety and work environment filter at the design and construction phase, with the task of reviewing plans and highlighting any deficiencies and improvement opportunities.

In general, the MSSM days are a fantastic source of inspiration for our own work environment and safety activities, and a good opportunity to keep abreast of the latest developments in this area. Pencil in next year's conference straightaway: 30-31 August 2012 in Nyborg.

Cecilia Österman

/Chalmers University of Technology

Karl-Arne Johansson /Seko seafarers

"High wages and internet motivates seamen"

Autumn 2006, my first official task as ombudsman of the Swedish Ship Officers' Association. I am standing outside Sjösjukan in Kalmar and waiting for the first-year students on the ship officers programme. After 30 years at sea, I expect



that I will be able to answer most questions, so I feel calm and relaxed. Once I am on the stage in front of 80 students, the questions come thick and fast:

"Is there broadband onboard? Is it directly connected to a server, or you have Wi-Fi? Does it cost anything?"

I couldn't answer a single question.

Today, about 90% of Swedes have internet access and most are connected via broadband. Having access to everything is seen as a human right and the younger generation is constantly connected via computers and smart phones to Facebook, MSN, Twitter and Skype. It is a way of socializing and keeping in touch with loved ones.

Broadband highly valued

The problem is that not all ships have connections in the cabins. Certainly, internet is installed, but often only on computers on the bridge and in offices. Studies have shown that free broadband internet is currently the most highly valued facility among seafarers. Ship-talk Recruitment Ltd has concluded that high wages and the internet are what primarily motivate seamen to stay in the profession. Without any doubt, internet is something that shipping companies should use to attract future manpower and ensure growth in the profession.

Ferries are usually already connected. Wallenius Marine were pioneers with free broadband in deep sea shipping. It is precisely in that type of trade that internet is so very important – to be isolated for weeks at a time from friends and family is simply not reasonable. I think this is a work environment problem.

"Send a letter home? From Maracaibo? Are you kidding? The letter will probably not arrive before you're back home, whatever the rotation system!"

Lennart Johansson/SSOA

"Everyone from the Work Environment Authority, the Transport Agency and so on tells us that we must do risk assessments, but no one says how to do them. That's why we are developing our own system."

Third mate Ida Larsson at Wallenius on risk assessment onboard.

SWEDISH TRANSPORT AGENCY, MARITIME DEPARTMENT

The Maritime Department of the Swedish Transport Safety Agency (previously the Swedish Maritime Safety Inspectorate) will spread information about relevant events and convey important messages to the shipping industry. The aim is to increase knowledge and safety awareness among parties in the shipping industry.

Cuts in personnel is a risk



- Traffic watch on a Ro-Ro ferry

A serious injury occurred during the unloading of a Ro-Ro passenger ship. When a trailer was going to be driven ashore by the terminal truck (a tug-master), it was easier to reverse it over the ramp. No traffic watch had been arranged. Instead there was a mate on the ramp edge who oversaw the work. When he noticed that the truck driver had stopped he waved it on, and the truck continued to back over the ramp. A person from one of the vehicles parked onshore waiting to be loaded noticed that the mate had been hit by the trailer and made the truck driver stop. The mate was seriously injured. Had the truck not stopped, it is likely that he would have been even more severely injured and died. It has not been possible to analyze why the mate left the pavement and walked out on the ramp – he remembers nothing about the incident. The investigation showed that coordination between the harbour and the ship was not optimal. There were also shortcomings in procedures in both organizations, such as people on the ramp and car deck that were not involved in cargo handling, which was distracting for the truck drivers. It is also likely that an audible alarm on the terminal truck had warned the mate that the trailer was approaching. Statistics show

that collisions with personnel take place from time to time. It is one of the largest risks in modern shipping, although fortunately fatal accidents are not so common.

- Signalman on a dry cargo ship

As mentioned above, the absence of a traffic watch was one factor that may have led to the accident. Similar problems exist when dry cargo ships are unloaded by crane. There is often no signalman (hatch foreman) despite requirements for one. In recent years there have been a number of nasty accidents in which crewmembers or stevedores have died because other personnel did not notice or know that there were people in the hold. In one of them, the stevedores went ashore for lunch while the crane operator continued to unload. Since the stevedores were ashore the crane operator thought that the crew had also left the hold, but they were still there sweeping it clean. One of them went to get a pole to push down residues of cargo, and was then hit on the head by the bucket, breaking his neck. In another incident a crewmember was crushed to death between the bucket and the hold bulkhead when the crane operator swung the bucket to get closer to the bulkhead.

A third example was when a 19-year-old trimmer from the stevedoring company was climbing up from the hold when the crew began to close the hatch. The hatch was directly above the manhole, which should have been locked. The trimmer came up through the manhole and was crushed to death between it and the cargo hatch. All cases are examples of events that could easily have been prevented if the prescribed signalman or traffic watch had been there. This job is very important, not just for instructing the crane operator but also as a communications link between the ship and the stevedoring company. Several of the cases have been heard in court and the management has been found responsible.

SFu journal no. 6:05:02 2011-1246

Unreliable controls constitute a risk

A recurring problem on power driven vessels is faulty machine control or engine control. Problems often occur during manoeuvres because the control gear is not working properly. Some of these incidents lead to serious damage occurring.

A passenger ship with a variable pitch



propeller did not manoeuvre as intended when the propeller did not respond. The probable cause in this case was that hydraulic oil had become contaminated with debris that remained at the bottom of the tanks and pipes due to the movement of the ship on the sea. When this occurs the only remedy is to empty the system, clean the tanks and filters and flush them with fresh oil.

Statistics for smaller ships in domestic traffic show that in the last five years, 27 incidents similar to these have been reported that led to collisions with the quay. Altogether 46 people received minor injuries.

SFu journal no. 06:05:02 2011-1570 SFU journal no. 06:05:02 2011-1848 SFU journal no. 6:05:02 2010-2427

False or unintentional alarms followed up

Electronic equipment can sometimes cause problems, especially if it includes an alarm function. Last summer the Transport Agency received a request via Stockholm Radio/Sea Assistance from a boat owner who heard a distress alarm on his VHF. The boat owner had observed the position of the alarm and noted that the boat did not respond. It turned out that the boat was Finnish (the identity can be obtained through the MMSI number) and units were alerted to the current position. The boat was not found, however, since it did not have AIS among other factors. If a VHF DSC rescue alarm occurs and the boat is not found, the case may be followed up by the Transport Agency. This time the VHF in question sent out an alarm about once a year, and early this summer several times in a short period. The Finnish Communications Regulatory Authority, FICORA, has ordered that the unit be shut down. The probable cause of the accidental alarm was high temperature, possibly in combination with poor shielding of other electronic devices. Misuse of alarms is a criminal offence.

SFU/SFtt

Major challenges for the Navy

Attitudes, management and updating of an aging fleet are all areas that the Navy needs to work with. Mikael Wendel, head of the Military Maritime Safety Inspectorate, explains.

Substantial changes are taking place in the armed forces and these are also seen in the Navy. Conscripts are replaced by employed sailors and the old defence against invasion is being turned into an operational defence with increased international service. This has direct consequences for daily activities onboard and places new demands on the work environment and safety. Mikael Wendel, head of the Military Maritime Safety Inspectorate, manages the supervision of the Navy by delegation from the Transport Agency. According to him, work environment activities in the Navy generally function well.

Soft issues

“The Work Environment Act has been applied in the Navy since 1980 and we are trying to meet the requirements for systematic work environment activities. I feel that serious efforts have been made in this area in recent years and this is probably largely due to the Ship Environmental Committee, which drives the issue,” says Michael Wendel.

“But there are also things that need improving,” he says.

“Above all, we need to work more with soft issues, such as attitudes towards gender equality and risk analysis, as well as leadership.” Those who have come under



Mikael Wendel monitors work environment and safety in the Navy. Photo: Linda Sundgren.

closest scrutiny in this respect are the amphibious and special forces.

How to treat colleagues and subordinates is a perennial issue for discussion in the defence forces. The debate has recently gained new momentum after military service was mothballed last year. In a recent survey from the garrison in Skövde, soldiers complained that they are seen as unintelligent and receive condescending remarks and personal reprimands.

“We need to continue working on this,” says Mikael Wendel. “It is primarily a question of leadership, of having good officers, and we will achieve that through information and training.

Creating a good atmosphere on the ships is important, especially for recruitment purposes. The Armed Forces are now a player in the open labour market and compete for young people with other employers.”

“With employed seamen, there are growing demands for influence and raised standards for the cabins and messes. In the past they often lived in small messes and they ate and slept in the same space, but this will gradually disappear as we build new ships,” says Mikael Wendel.

Aging fleet

The Swedish battle fleet is getting long in the tooth, and many ships are 30 to 40 years old. Older vessels are being gradually phased out and the living and working environment will improve through this process. In addition, existing ships are being partly rebuilt in order to increase comfort levels. Getting employers to agree to improving the work environment is seldom difficult, according to the maritime safety inspector.

“If a work environment issue comes up

it is given priority in the process, and I have not noticed that proposals have been stopped for financial reasons. The Supreme Commander has repeatedly said that the work environment is important, and his word carries a lot of weight. However, there are other factors involved that slow down the process from proposal to reality.”

“When it comes to physical changes, alterations to the ships, the process is far too slow. Material plans are required, then ordering and procurement in accordance with current rules and so on,” says Michael Wendel.

A driving force in the work environment improvement is the Ship Environment Committee (the defence forces’ equivalent to SAN).

“The trade unions put demands on the work environment, and they are justified,” says Mikael Wendel.

The Navy has about 500 vessels, including canoes and rowboats. Around 80 ships are 40 tonnes (approximately 20 gross) or more and many of them are built to patrol the Swedish coast. Now that the Armed Forces are moving towards an operational defence with increased participation in international operations, there are new demands on the ship environment. Overcrowding, lack of privacy and limited training opportunities will be more noticeable in international operations than exercises around Sweden.

“Our corvettes and ships are relatively small and built to be out for a few days at a time in Swedish waters. If we sail down to the warmth of the Gulf of Aden and the Mediterranean and remain there for several weeks, there will be completely different pressures on the ships and crews.”

Linda Sundgren

Michael Wendel

Age: 55

Family: Wife Diana and son Martin, 15 years old

Home: Terrace house in Björkhagen, Stockholm

Position: Head of the Military Maritime Safety Inspectorate

Background: Naval Academy at Näsby Park, 1975. Civil engineer/shipbuilder at KTH in 1980, officer and marine engineer 1981. Submarine fleet, submarine engineer, project manager for building patrol boats in Singapore and several positions at FMV (The Swedish Defence Material Administration). Head of the Engineering Office for Ships 2003-2004 and head of the Navy’s Ship Inspectorate 2005-2007.



IN BRIEF

"Piracy has to be stopped from onshore"

The increasingly frequent attacks on ships off Somalia cannot be stopped by military operations at sea. To overcome these problems we require comprehensive measures onshore, including the development of a functioning judicial system, a Coast Guard and improved living conditions for the population. This is stated in a newly published research report from the Defence Research Agency, FOI.

Women sleep less than male colleagues

While 19% of male employees have trouble getting to sleep at night, the corresponding figure for women is 29%. This is shown in a study commissioned by Previa. Among women, sleep problems increase with age and 37% of women over 51 have trouble sleeping. For men it is more evenly distributed across age groups. Stress at work is believed to be behind the problems.

Experiment to reduce paperwork

Last spring, the EU launched a project to reduce the administrative burden on ships in European waters. Instead of the crew reporting details of arrival and departure times, loading and so on, the necessary information will be automatically supplied to ports via the EU vessel traffic monitoring system. Approximately 250 vessels are participating in the project which runs until the end of the year, when it will be evaluated.



SAN NEWS

SAN is a joint body for Swedish Shipowners' Employer Association (SARF), Swedish Ship Officers' Association (SFBF), Merchant Marine Officers' Association (SBF) and SEKO Seafarers.

Sjöfartens Arbetsmiljönämnd
Box 404, 401 26 Göteborg
Tel: 031-62 94 00
E-mail: info@san-nytt.se
Web: www.san-nytt.se/english/

Publisher: Lars Andersson, SARF

Editor: Linda Sundgren
tel 08-540 645 15, linda@san-nytt.se

Editorial committee:
Johan Marzelius, SFBF
Mikael Huss, SBF
Karl-Arne Johansson, SEKO Sjöfolk

SAN News is produced with subsidies from the Swedish Marine Work Environment Foundation.

Production: Breakwater Publishing