NINA NO INJURIES NO ACCIDENTS

# SAFETY MATTERS

Newsletter from Boskalis

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## In this issue:








# Reporting to learn from each other

**Have you completed an SHOC card before? Have you reported a *near miss*? More reports were made in the past year than ever before. What happens to a report once it is filed? Why is reporting important?**

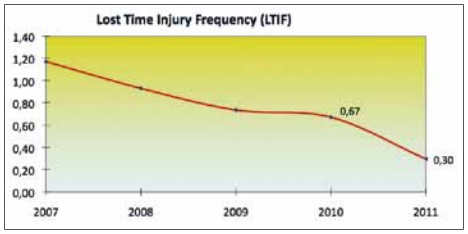
The body of reports of accidents and near misses is used as a barometer of safety at the organisation. It serves as the basis of the statistical information compiled by the SHE-Q department. This statistical information is increasingly important to both current and prospective customers. With the arrival of NINA, the reporting of accidents and near misses has become one of our joint values. The increase in the number of reports of near misses and relatively minor incidents made in the past year demonstrates how more and more people support and understand the importance of doing it. Wilfred Haaijer, Head of the SHE-Q department, is pleased with this trend. “At the same time, we have heard that some people have no idea what happens to the report after it is filed and why reporting is so important. It’s now up to us to show what we do with them.” “It is important to us that workers report situations they consider hazardous or in cases when they want to protect their colleagues,” says Eric Holman, CTD Director. “This **care for each other** - that’s NINA in a nutshell. Even if you resolve the issue on site right away, we would like to be notified, as other vessels or worksites might be facing the same issue. The aim is to learn from each other.”

That is why your reports are so important. They raise awareness of risks among colleagues and management. Your report could potentially result in a change to technology used or procedures implemented - a change that could result in a safer working environment.

**Four good reasons to file reports:**

**• Learning from each other**

Every report filed - regardless of whether it addresses an incident, a near miss or a potentially hazardous situation (technical or behavioral) - could serve as the basis for a lesson for others. The lesson could be applied to a smaller group or across the entire organisation. Wilfred Haaijer: “The **technical standard** introduced in 2010 is a good example. The standard was designed to help prevent the most commonly occurring accidents, which were identified based on the reports we received. We were able to develop 10 action points based on these reports. For instance, floors with an anti-slip surface are now prescribed as a means of preventing tripping, slipping and falling. In addition, stairs and ladders must also satisfy specific dimension requirements. Your reports have made it possible for us to address concrete issues and problems. It is a never-ending continuous process.”




*Falling number of LTIs for every 200,000 hours worked!*

**• Understanding**

Your reports facilitate the development of understanding across the Boskalis organization, which is a decisive factor in determining whether action is taken.

Wim Leutscher, SHE-Q department safety specialist comments, “For years, we have carefully reported on and compiled information about serious accidents and lost time injuries (LTIs). As a result, we can now see the tremendous progress the organization has made (see illustration). In the past year alone, the number of LTIs has been halved. This is a terrific achievement and indicates the amount of effort everyone is making to increase safety.

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In addition, the reports can be used to identify areas for improvement. “The **‘Man Overboard Task Force’** is one example,” says Plant Manager Piet Jan van der Giessen. “Several captains informed us that although the lifeboats of their vessels satisfied the statutory standards, they nonetheless wanted to have their functionality investigated. As we received reports on this issue from various stakeholders, we opted to explore the issue more carefully, establishing the multidisciplinary ‘Man Overboard Task Force’. This group will assess whether action is required and, if so, what specific action should be taken.”

**• Raising awareness**

Working safely requires an awareness of the risks involved. Wim Leutscher. “Based on the increased number of reports, we can infer that awareness of safety issues has increased. This awareness is also increasing due to the reports filed and the associated feedback provided. One example is the structural attention paid to housekeeping, which is related to the large number of tripping and slipping incidents reported.”

It should be noted that this increased awareness is not only of importance to the shopfloor, but **also to managers.** There is good reason, for instance, why the plant team discusses near misses. Piet Jan van der Giessen explains, “This way a manager conducting an inspection is more aware of any relevant issues.”
In addition, Wim Leutscher indicates that Safety Flashes are disseminated in the event of serious or potentially serious accidents. The aim is to learn from incidents and to gain an awareness of the risks.

**• Policy changes**

Your reports may motivate changes to policy (i.e. certain procedures). Eric Holman: “We can only make **adjustments** when we know what is going on. This could be at a local level or something that affects the entire organisation. When an engine breaks down, the crew must be able to respond right away. If, however, it emerges that this happens on other vessels as well, it could motivate more careful investigation. A near miss may be a one-off occurrence, but it could also help to reveal a pattern. This is something you can only know when reports are filed. For instance, according to the figures for 2011, the majority of near misses occurred when performing activities that are new for Boskalis. This could signal something worth investigating more closely.”
All in all, an upward spiral in terms of safety developed in the past year. NINA has made it easier to discuss the issue of safety, which has helped to lower the threshold to raise an issue. As workers see that something tangible is being done with their reports, they more readily and more quickly take action to sound the alarm. This enables Boskalis to manage and determine safety at work and ensure that its standards are kept at a high level, which has an impact both within and outside of the organizatio

## Various levels of reports

**As Boskalis management sets great store by giving everyone the opportunity to report risky or potentially risky situations, it has developed various tools.**

1. De **SHOC-card.** The SHOC card can be used to report a technical issue or unsafe behavior. Having submitted a SHOC card, workers can expect to receive feedback from the supervisor. Although the issues raised will usually be resolved among the parties involved, some reports touch on an issue of importance to the entire company. These are submitted to the head office.

In 2011, significantly more SHOC cards were completed than in 2010. In addition, the number of SHOCs entered into SIRE also increased. The statistics reveal that major projects are involved in 90% of all SHOC cards submitted. Wilfred Haaijer: “It seems this tool is more effective in that area than on board the ships, for instance. That makes sense. In a small team you’re more likely to simply point out to each another that something isn’t going well.”

2. All **incidents and near misses** have to be reported to the head office via Maximo and Sire. In addition, notifications about **potentially hazardous situations** can also be made through this same avenue. According to Wim Leutscher, more careful investigation will be conducted where warranted. This is often the only way to find out the actual cause. Consider, for instance, an incident in which someone’s fingers get caught up in a hawser. The cause if more often miscommunication or incompetence than a technical issue. This could result in lessons learned that we would like to share as widely as possible.”



# Rapporteren

**Waterway/Coastway:**
During a project of the Waterway in Angola, the offshore client recommended constructing an embarkation platform portside on the main deck. This request was made because the main deck is often wet and slippery when the ship is loaded. After this had been installed, the crew was so satisfied with it that they indicated they wanted one installed on starboard as well. This was done, and it was subsequently also installed on the Coastway.

**Oranje:**
A modification was carried out on the Prins and the Oranje in order to allow for a greater draught. One of the consequences of this is the possibility of water standing on the F-Deck more often, making it impossible to get to the rear of the accommodation safely. It was then proposed to construct a ‘walkway’ on the portside exterior of the accommodation, at the height of the E-Deck. This was done on the Oranje. It was not required on the Prins, because the Prins already has a starboard platform running along the accommodation at the height of the E-Deck for the 85-metre suction pipe.

*Embarkation platform on Waterway*

*Port-side walkway on Oranje*

# Real-life example


## Coastway

**One of the captains to file several reports in 2011 is Rob Scheppink of the 'Coastway'.**

"We are currently working on a project in Abu Dhabi (Upper Zakkum Artificial Island). The work involves working closely with parties who have little or no experience with this kind of offshore work, lack the proper equipment or maintain a much lower level of safety standards. As a result, I have much less control of the operation than I would like. It's a situation we have to deal with, however. One example includes the use of an unsuitable crew boat to transfer client representatives over open sea. This not only resulted in quite a few dents, it also entailed hazardous situations. With NINA in mind, I now say no, we don't work that way. Changing crews during bad weather? We don't do that. Connecting to an unsuited vessel? No, send another boat. Refueling while on the open sea? We don't do that. I continue to raise these issues for discussion, but that takes a lot of time and energy."

### Letter of apology

"I've reported everything I've seen in recent years, including every instance of damage, given the importance of this for an insurance claim number. I've also reported incidents (one), near misses and hazardous situations. I notify the client of these, and this achieves results. We once received a letter of apology from our client after the inexperienced navigating officer of a local hopper caused a near collision. After once receiving the wrong type of fuel, we now always receive the specifications before refuelling.

Although I think we can learn a great deal from each other's reports, you have to be aware of them in the first place. This is why I argue for a system enabling you to inform everyone who could benefit from the information. This could include, for instance, a situation in which an incident or near miss occurs on a sister vessel and the other vessel has to be informed of this immediately. The same applies to issues of importance to the organization as a whole. This should not be done using regular e-mail, but rather via a different and separate channel."

**Report:** poor visibility

The crew of the Crestway reported that the diabolo of the bow connection was hindering the view of the navigating officer on the bridge. Changes have since been made to enable its removal. The sister ship 'Shoreway' made the same changes.

**Report:** risk of falling overboard

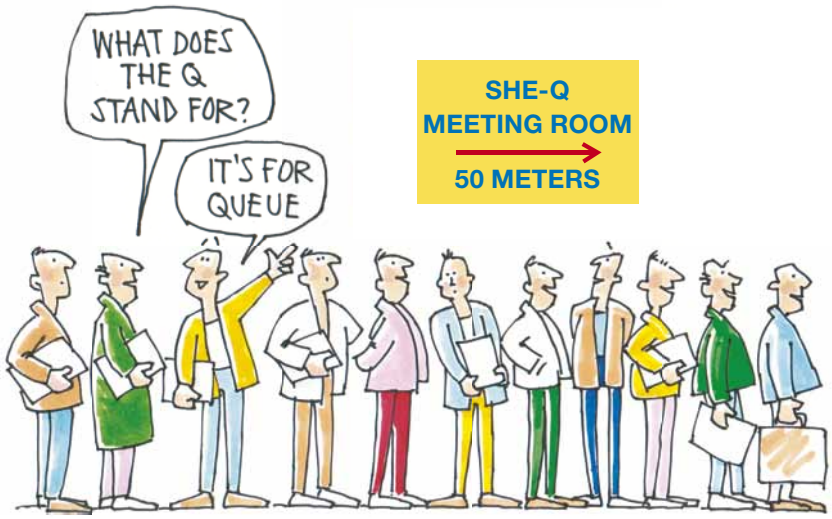
When increasing the dredging draught mark on the 'Prins' and the 'Oranje', additional barricades were installed on the stern of the ship as recommended by the crew. This helps to reduce the strength of waves coming on board, and the crew is better protected against waves on deck.

**Report:** investigation requested

In response to a request of the Safety Committe of the 'Beachway', the CTD department is investigating whether rafts can be used to replace traditional lifeboats. Exercises involving these rafts are much safer, and they offer the same level of protection in the event of an emergency.

**Report:** capacity shortfall

As indicated by the Safety Committe of the 'Waterway' and the 'Coastway', additional hoisting beams were placed in bow thruster room.




# Did you know that...

## ...a major SHE-Q conference was held in January?

For the 60 participants from around the world, this was the ideal opportunity to meet and exchange experiences. The aim of the conference was to jointly determine the SHE-Q department's role within the organization. This role is evolving in line with changes in the world of Boskalis, with Smit and MNO being taken on board, for example, and NINA changing the way we interact.

After three days of intensive meetings, the SHE-Q specialists emerged from the conference with a robust network and a clear vision for the future of SHE-Q within the company.

# This time in...

## Suriname

**Near Lelydorp to the south of Paramaribo, Boskalis has begun landscaping a 200 hectare site. It is laying the groundwork for a new adventure: *total mining.* In other words, Boskalis is going into mining.**

*Boskalis is going into mining, Lelydorp Suriname*

You may not immediately think of dredging when you talk about mining, but the project near Lelydorp represents an ideal job for a dredging specialist. Project Manager Arie van den Adel explains that bauxite ore is hidden deep underneath a massive swamp. “Dry earthmoving equipment simply cannot handle the conditions. We will use the cutter dredger ‘Orion’ to dredge off the upper layer. The excavators will only come into play when the pit is dry.”

Arie describes the project he is managing as ‘comprehensive’, and it is easy to see why. Not only is the project complex in terms of project management, local conditions make things that much more difficult. Moreover, several local workers are completely unfamiliar with the concept of safety; logistics could easily be a project of its own; and - just when you thought things couldn’t get worse - there is the issue of killer bees from Brazil. There is good reason for former-SMIT SHE-Q Manager Erik van den Biggelaar’s wide-eyed response when he became fully aware of the entire scale of his new project and work site. “It’s an enormous puzzle we have to solve together. Everyone I’ve seen has that commitment and drive. The mood is extremely positive, which is crucial. This is particularly true for my area of work: safety, for which effective communication is a necessary precondition.”

### Project overview

A tremendous amount of preparation work is required to reach the bauxite ore. The site must first be deforested, the reclamation area must be prepared and the canals and dikes organized as part of the water management operations. This is when ‘Orion’ comes in. The deployment of the cutter dredger from



## Quality

**A key mineral ore in aluminum, bauxite, has been mined in Suriname for nearly a century. In addition to aluminum oxide, bauxite also contains compounds of titanium, iron and silicon. The percent composition of these compounds determine the quality of the bauxite. Raw materials of a constant quality are key in ensuring a good quality refinery process. The equipment might otherwise become stuck and fail.**

**To ensure this level of quality in Lelydorp, high-grade bauxite is being mixed with a lower quality material. The customer Suralco has taken samples from all over the site and will give Boskalis specific instructions on where to excavate and to which depth. During the excavation phase, Boskalis will document every bit of soil removed: a computer system keeps track of when earth and rock is removed, the part of the mine floor from which it originated and where it is being stored.**

**Based on this information, Suralco will determine which supplies of bauxite should be delivered to the refinery for the production of alum earth.**

*Lots of preparation is required before bauxite can be extracted*

the Middle East is an intensive operation. Once in Suriname, the vessel must be transported a further 12km on road transport equipped with a special axle configuration. Once on site, the 'Orion' will go to work in the extraction pit, which will be divided in half by the dike to be constructed specifically for this purpose. When the first pit is dry, dry earthmoving equipment will remove the remaining 4m of soil above the ore bed. At this point, the equipment will be working at a depth between -11m and -24m. Finally, the hard ore bed is blasted apart, and the removal operations can begin. All the while, the same process is taking place in the second pit.

### Skills required

At the height of operations, there will be 150 to 200 people at work, of which 40 to

## Safety

**One of the biggest risks faced in the project is the stability of the mine slopes. "We will have to deal with a soft clay soil and substantial amounts of rain," says Arie. "That's a disastrous combination. It makes it completely impossible to get the job done, for both workers and machines." In order to ensure that the mine remains dry and the slopes are not compromised, which can have potentially fatal consequences for those working and the equipment being used in the extraction pit, dikes and canals are being constructed to ensure proper water management. Hydronamic engineer Jorrit de Groot and his team performed countless calculations in developing the water management plan. In addition, 35 pumps will be used around the extraction pit to lower the level of the water. Every pump is equipped with a sensor to measure the amount of water removed.**
**A malfunctioning pump can easily be detected through the readings, and the problem corrected. Hydronamic will remain in Suriname to monitor the site. After all, the use of explosives and blasting in the final phase will impact stability, necessitating the performance of inspections. "Each time, we only resume work when the 'all safe' sign is given," says Arie.**

### Reclamation area team

**Together with his colleague Anwar Rodjan, reclamation area foreman Chris van Dillen is doing the preparation work for the reclamation area: "Each job is different and comes with its own peculiarities. As working with clay soil always comes with uncertain risks, we work with 'spotters', who walk along with the excavator while maintaining radio contact with the operator. Keeping an eye on each other is essential. Based on this premise, we are working to transform our team into a closely knit group. They have completed the NINA training course together and understand what we expect in terms of safety. In addition to having a comfortable working environment, respect for each other and effective information provision - clearly communicating what is going to happen and more importantly why - are the key ingredients to workplace safety."**

### Open culture

**Meanwhile, SHE-Q Manager Erik van den Biggelaar has provided various NINA training courses for a range of project subcontractors in conjunction with the customer Suralco. "The safety policy of a mining firm like Suralco focuses primarily on regulations. I've seen how great their curiosity about NINA is and also how enthusiastically they receive the information. For instance, we are going to establish a 'zero accidents team' involving the participation of representatives from all stakeholders. When discussing the project, the topic quickly shifts to safety. This is also true of non-technical issues, such as Fit For Duty. Do you as a worker insist on your breaks? Are you able to bring up the issue with other employees who don't? This type of open culture – in which safety is an openly discussed topic – is invaluable."**

**NINA objectives:**

- **Establishment of a 'zero accidents team'**
- **Project staff visiting the site each week to discuss safety**
- **Publication of safety newsletters**
- **SHOC cards**


50 deep in the mine pits. Boskalis is hiring locally wherever possible in order to create employment in the area. Only qualified candidates will be eligible to work. A special training program has been designed to improve the knowledge of operators.

"The 'Q' in SHE-Q plays a prominent role in this project," says Regional Manager Jaap Scheele. "Skills are required to excavate a pit to a precise depth, as is effective monitoring of the entire process to ensure the supply of high-quality bauxite. This project has provided our company with a very exciting way to expand our expertise." For this reason, the departments involved prepared specific research questions in advance, the answers to which they hope to get during the course of the project. For instance, the Survey department aims to pilot new surveying technologies for large areas, including, for instance, remote-controlled airplanes. The SHE-Q department hopes to explore the coherence between NINA and mining safety procedures. The mining sector has traditionally known very strict safety requirements.

According to Jaap, this project offers the opportunity to share knowledge and expertise, while expanding on the company's base: "It's in keeping with our strategy to offer customers an integrated package of services, although such work will always be an extension of dredging activities."

## Health & Environment

**Working in the tropics comes paired with certain health risks, including malaria and dengue fever. A problem specific to this part of the world is the presence of Brazilian bees (i.e. a highly aggressive variety of bees, which immediately attack when their nest is disturbed. The attack can have deadly consequences. A nurse is on hand 24/7 at the Lelydorp project in case first aid is r equired.**

**Key environmental points to consider include the reduction in the particulate matter generated by, for instance, paving the sandy roads the trucks use to transport the bauxite, the minimization of noise nuisance by, for instance, prohibiting trucks from operating at night.**


# Colophon

Safety Matters is the safety bulletin of Royal Boskalis Westminster nv in Papendrecht, the Netherlands

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**We look forward to hearing your ideas on how to improve safety. Please send them to: safety@boskalis.nl**