



# SAFETY MATTERS



Newsletter from **Boskalis**

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## Slight decline in safety figures in 2016

### Areas for attention in 2017

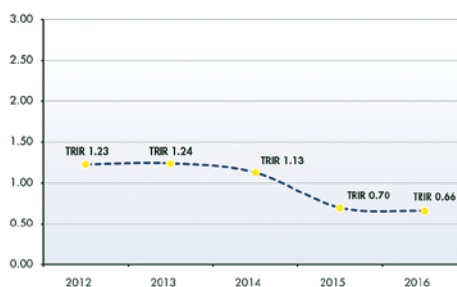
How was our safety performance in 2016? In this edition of *Safety Matters*, we cover the safety figures as well as the world behind those figures. We unveil a couple of initiatives that stemmed from trends that were identified and take a look at what's next: what will the focus be on in 2017?

#### The figures

In 2016, the number of accidents leading to absenteeism (LTI-F) remained unchanged company-wide. The number of accidents requiring only medical treatment or first aid fell slightly. The sum of all these accidents, contained in the TRIR figure (Total Recordable Injury Rate), therefore shows a small decline compared to 2015.

#### TRIR RBW GROUP 2012-2016

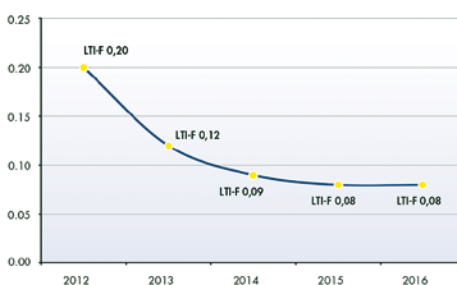
(200.000 exp. hours)



The TRIR (Total Recordable Injury Rate) reflects the ratio of all registered accidents compared to the number of hours worked. The TRIR rate fell slightly in 2016.

#### LTI-F RBW GROUP 2012-2016

(200.000 exp. hours)



The LTI-F (Lost Time Injury Frequency) stabilized in 2016

#### The story behind the figures

The LTI-F stabilized. That means the number of accidents whereby the victim had to be hospitalized or recuperate at home remained the same. One of the men who unintentionally became part of these statistics is engineer Jan Punter. Last summer he suffered a serious injury at work and is still suffering the consequences. "Your world is suddenly turned upside down," he says later in this edition. These are the stories behind the statistics that make you realize that we must all continue to strive for a safe working environment. After all, every accident is one too many. Once again in 2017, there are various campaigns planned to bring us closer to this objective.

#### Increased safety awareness

The accident analyses show that knowledge and expertise on safety aspects are important areas for attention. More knowledge goes hand in hand with increased safety awareness. There are several ways we are working on this in the organization. One example is the Workbox series, which puts a spotlight on aspects of behavior and knowledge through examples of best practice. This year, the series is being expanded to include the Workbox Hoisting. And that's not all, as Dredging SHE-Q Manager Michael Evertsz explains in this edition of *Safety Matters*: "Boskalis is working to develop a Boskalis Basic Safety Standard for all employees."

#### 'Look before you leap'

Working safely requires properly assessing risks and acting accordingly, providing a good example,

To be continued on page 2

# Why did David trip?

## And what can we learn from this as an organization?

**Key questions in the incident reports are 'how' and 'why'? This is because as people, as a team and as an organization we want to know what went wrong. By charting trends and underlying causes, we can share lessons learned and develop initiatives.**



Continued from page 1

calling each other to account and good communication. That awareness is there, but implementation is not always the most favorable. "People sometimes do clumsy things," says Urf Jarl, Captain of the Manu-Pekka, in the article about the Workbox Mooring. He advocates consistent use of the YES scan, to check yourself, your surroundings and your equipment before you begin and after every break. He is not alone. For the Offshore division, 2017 will be the year of the YES scan, explains SHE-Q Manager Chris Heupers. In other words: 'Look before you leap.' The YES scan is described on the NINA poster under 'my role according to NINA as an employee'. It is Boskalis' behavior-driven 'last minute risk assessment' (LMRA).

### Improved incident reports

To improve safety, you first need to know where things are going wrong and why. It is therefore important to obtain the most complete picture possible of the (indirect) underlying causes behind an incident. Proper incident investigations and reports make it possible to better identify the potential trends and to learn from them as an organization. ■

It's a cold February day. In the middle of heavy snow showers, a ship is floundering at sea. The high waves are keeping everyone awake. The deck is slippery as deckhand David makes his way to his bunk, huddled in his high collar. He suddenly slides and, before he knows what hit him, he is on his side groaning from the pain. The first mate who finds David takes him inside where he is given a cup of coffee to help settle him. He examines him: his ankle is severely bruised. That afternoon, the captain sits down at his computer to fill in his incident report. He is quickly faced with tough choices: what made David trip? Was it bad housekeeping or poor weather conditions? Was he not fit for duty due to a lack of sleep? Or was he operating on autopilot and not focused at that moment?

### Reports must be completed thoroughly and intelligently

To be able to learn from incidents and near misses, it is important to have insight into the facts and underlying causes. "It's therefore crucial that people complete their reports thoroughly and intelligently," according to Michael Evertsz and Chris Heupers, SHE-Q managers from Dredging & Inland Infra and Offshore Energy, respectively. They see all the incident reports that come in via Sire and sometimes request extra information. This depends on the severity and extent of the incident, Chris explains. "After all, when a cook cuts his finger, it's considered an accident. Still, it's much more interesting to investigate a third successive mooring near miss. This type

of high potential near miss can provide lessons learned for the entire division or organization."

### What are the most common incident causes?

SHE-Q Dredging reported over 1,100 incidents in the period from January 2014 to mid-2016, supplemented with information from group reflections based on the NINA Impulse Plan. SHE-Q Offshore investigated over 800 incidents during the same period. This analysis provides insight into the most common (indirect) causes as well as into the root causes. As these are the underlying causes and circumstances, this requires digging deeper. The causes vary per division.

#### Work-related factors (unsafe conditions):

1. Inadequate preparation
2. Defective materials/equipment/tools
3. Inadequate instructions/procedures/working methods
4. Failure to sufficiently address weather conditions

#### Root causes:

Insufficient working standards  
Inadequate communication  
Inadequate supervision/leadership

#### Personal factors (unsafe acts):

1. Failure to identify hazards/risks
2. Underestimating risks
3. Complacency
4. Failure to follow procedures
5. Inadequate preparation/planning

#### Root causes:

Lack of knowledge  
Lack of skills  
Lack of time

### What's the next step? From analysis to ACTION

The above analysis shows that improvement is possible for various aspects. Some are obvious, while others are more complex. What is clear is that insight into the risks of the profession is not up to par. People underestimate risks, are insufficiently able to identify risks and are complacent.

## New

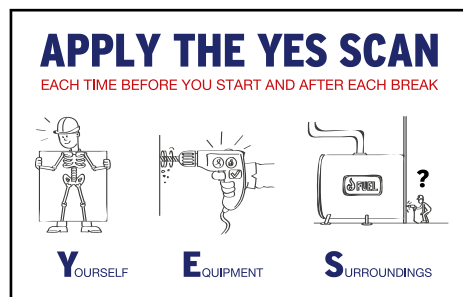
### Training in Incident and Statistics Reporting 2017

How do you properly complete a report? In other words: what should a good report comply with? To provide insight into this, SHE-Q Offshore Energy started giving a presentation to all the division's SHE-Q representatives from February 2017.

The presentation covers changes in the methods of reporting (due, for instance, to changes in the Business Unit structure) and shows participants how to report and maintain statistics in a uniform manner. Uniformity makes it easier to obtain better analyses and overviews from the division.

Michael Evertsz: "Much of the focus in recent years has been on NINA, the behavioral side of safety. What we are already doing in this area we want to do even better, with attention to leadership, teamwork, feedback. In short: creating a good safety climate at work. But there is another aspect, namely that the professional side of safety has dropped out of the spotlight. We want to tackle this as well by employing a Boskalis Basic Safety Standard presented via a training that clearly focuses on basic safety know-how and Boskalis' minimum standard."

Chris Heupers: "It essentially boils down to this: Through NINA we ask people to take responsibility for their own safety, as well as that of their colleagues. As an organization, we are required to provide them with the tools they need to properly assess whether something is safe or not. This is why developing a Basic Safety Standard training is a good idea."



YES-scan card

## Action points:

1. Increased attention to the **NINA Values** to ensure people truly master them;
2. Making better use and application of existing **NINA 'rituals'**, such as the project-oriented NINA Start-up sessions, NINA training sessions and Workboxes;
3. More attention for 'my role according to NINA as an employee', or: the use of the **YES scan**, the tool that motivates people to consider risks and management measures before they start work: Am I safe? Do I have the right equipment? Is my environment safe?
4. Developing a **Boskalis Basic Safety Standard**, with a training session that focuses on basic safety know-how and Boskalis' minimum standard.
5. Taking steps to ensure the **equipment is more reliable**, for instance by keeping the planned maintenance system in Maximo up to date.

### The figures:

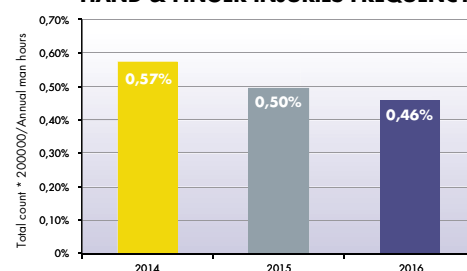
It's a common saying: 'for me, safety means ensuring that everyone goes home with ten fingers and ten toes'. In reality, things are not so obvious. The figures show that over one-third of all accidents involve injuries to

## Incident is the overarching term for:

1. Accidents, or incidents involving personal injury (Lost Time Injuries, Restricted Work Case, Medical Treatment, First Aid case)
2. Incidents resulting in property damage
3. Near misses
4. Incidents that lead to environmental damage
5. Incidents that damage health (work-related sickness such as decompression sickness)

This last term was recently added to maximize transparency about what took place. This forms the basis for preventative policy and actions.

### HAND & FINGER INJURIES FREQUENCY



Common hand and finger accidents

people's hand(s), fingers or arm. In 2014, the 'Hands' workbox was developed to make people aware of this and since then, there has been a slight decrease in the number of accidents affecting hand(s) and fingers.

## Incident investigation

**NINA Value 5: 'I report all accidents, including near misses, to inform others and build on lessons learned.'**

When a potentially serious incident is involved, it is investigated by a specially trained investigation team. They use the TRIPOD Beta investigation method which clarifies what happened and why it was able to happen. Attention is devoted to incidents with wide-ranging implications for the organization. This is done using a Safety Newsflash, for example, where lessons learned from the specific incident are shared.

The '**Investigation for non-HSE personnel**' course, which was previously developed at Dockwise, teaches managers how to set up and carry out an investigation. Practical matters are addressed (sealing off the area, taking pictures) and managers are given guidance on what questions to ask. The course, which is given upon request, is highly recommended for operational managers.



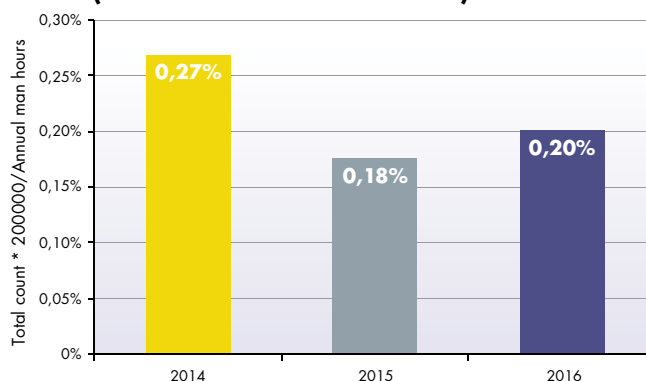


# Experiences with the Workbox Mooring

Mooring can be a high-risk activity. Statistics show that if something goes wrong, the consequences are significant.

The Workbox Mooring was developed to raise people's awareness of the risks and further increase their knowledge as 'best practice'. Since the start of 2016, 74 ships have already been introduced to the Workbox, which builds on lessons learned. What are the experiences?

## MOORING INCIDENT FREQUENCY (ACCIDENTS + NEAR MISS)



The number of near misses involving mooring activities have fallen sharply since 2014. These figures point to increased safety awareness during this risky activity.



*Sharief Spieker, Captain of the Rockpiper: "Breaking down barriers."*

"A workbox encourages you to talk openly about a topic together with people of all ranks and positions: a captain

exchanging ideas with a deckhand about mooring. This is the strength of a workbox, it breaks down barriers and that boosts safety. I hope this teaches crew members to take their time and accept the fact that mooring takes time. That's what I promote as captain: you should never rush."

with such care. And we do indeed exercise caution. Before and after each mooring we hold the required toolbox and run through it with the entire team so that everyone is aware of their responsibilities. One person oversees the operation, while inexperienced deckhands remain on the sidelines to enable them to gradually gain experience. I'm well aware that this is easier for us than it is for smaller ships."



*Ulf Jarl, Captain of the Manu-Pekka backhoe: "Sharing know-how is good."*

"I found the Workbox interesting, even though we rarely moor. It's always good to

share know-how. The incidents I'm seeing here are all related to behavior: people doing clumsy things. That's why I'm a huge supporter of the YES scan: Are You, your Equipment, your Surroundings safe? My motto is, stop and think for five seconds."



*Danny Vet, Captain of the Cyrus cutter (formerly Edax): "Useful tools."*

"I think the most useful tool is the map of the ship where you can use magnets to indicate bollards and winches and use this to

discuss people's positions. And because the crew often changes, I continue to use this handy tool. I've seen that it works and the men analyze it in practice on deck: 'Is it set up correctly? Can we make it even safer?' I know from experience how important that is. I once got hit in my side with a hawser while on board the cutter Ursa. Thankfully, I got off with a couple of bruises but it could have ended differently."

**From the trainer: Adri Verloop, Captain of the Oranje, presented the workbox on 15 ships. "Keep the topic alive, even after the Workbox."**

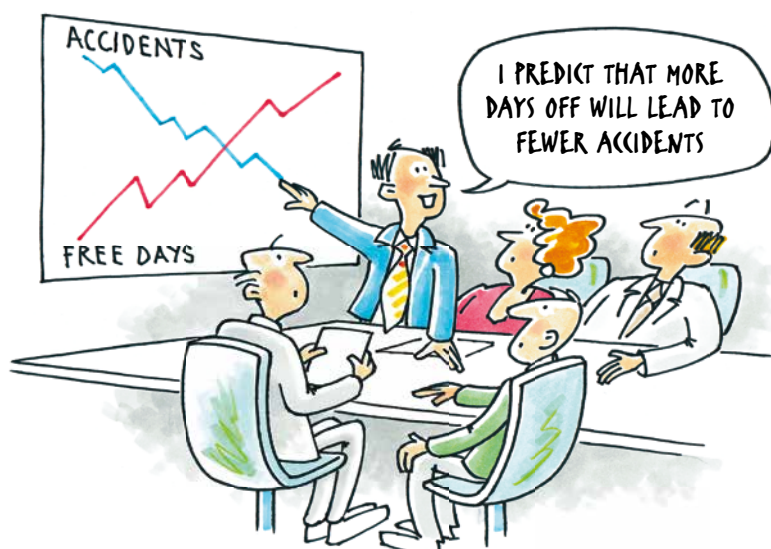
"The Workbox was well-received. It's a mixture of theory and practice, with components like 'safe mind' and an animated film depicting the risks. And you discuss the situation on your ship. It's especially important for the small ships, which often moor, to increase know-how and safety awareness. But in the end the Workbox benefits everyone. Think about your own experience: who do you know who has had an accident during mooring? My tip? Keep using the Workbox tools to get the discussion going and show the film again. That way, you keep the topic alive."



*Frank Suurs, Captain of the Queen of the Netherlands: "Awareness."*

"The Workbox Mooring is good for raising awareness. A film clip about the snapback zone is always

an eye-opener; it reminds you of why we work



**There are currently new trainers being instructed in presenting the Workbox at both Offshore and Dredging. The aim is to have covered all ships in 2017.**



# NINA Reflection Session with Senior Management D&I Division

What happens to you if you have an accident at work? Engineer Jan Punter told his story at the NINA Reflection Session to Senior Management of the D&I division (autumn 2016). This session was part of the NINA Impulse Plan.

Group Management member Pim van der Knaap was in the audience. He explains why Jan's story is so important and provides his vision of the new NINA Impulse.



Pim van der Knaap

**Thought of a good idea to improve our safety?**

**Send it to:**

**[safety@boskalis.com](mailto:safety@boskalis.com)**

IT HELPS ME TO REMEMBER THE SAFETY RULES



## Engineer Jan Punter was hit by an asphalt trailer at work: "This could have ended very differently."

**All his life, Jan Punter (age 57) has worked in road engineering, but since last summer he has been home bound. To be exact: since June 29, 2016 at 7:30 a.m. That's when the accident happened and he's lucky he lived to tell the story.**

"I was standing behind the bitumen truck to heat up the emulsion for the section we were working on. I turned on the compressor and opened the valve. I didn't hear an asphalt trailer moving towards me in reverse. Before I knew what was happening, I was in terrible pain: the trailer had hit the valve, pushing it down, with me in between. When it let go, I fell with my knees on the sand and just knew: 'Damn, this could have ended very differently.' If the asphalt trailer had kept going one second longer, I wouldn't be here to tell the tale."

The hospital confirmed several broken ribs, a broken shoulder blade and wrist, torn tendons and severe trauma to his hand. "My world was suddenly turned upside down. I've been working for 41 years, getting up at 4:00 a.m.

and returning home at 7:00 p.m. Then in a split second: bang, pain, uncertainty. Back home from hospital, my bed was set up in the living room. All I could do was lie on my back. I couldn't sleep at night, couldn't go anywhere without help. It was extremely tough."

Looking back, Jan says: "We've all had an 'oops moment'. It usually ends well, but this time it didn't. I know the driver well and he was devastated; we've cried about it together. I was always concerned with safety, always kept an eye on the road when colleagues were working. So never think 'this won't happen to me'. If you work with heavy machinery, it can happen in an instant."

## Pim van der Knaap: "It's our duty to investigate and learn from every incident."

**"Jan's story shows that things often go wrong due to a combination of circumstances. However, as an organization you cannot and must not say: 'nothing can be done'. We must always look for ways to prevent incidents. This is our duty at all times."**

"You can learn something from every incident. However, we prefer to learn before something goes wrong. That's why information about near misses is so important. There were more reports of near misses over the past year than ever and I want to call on everyone to continue reporting them.

in the middle of it. Discuss it together, and record the outcome. After all, those reports are discussed in the management meetings. This enables us to share know-how and learn from each other, so making our company safer.

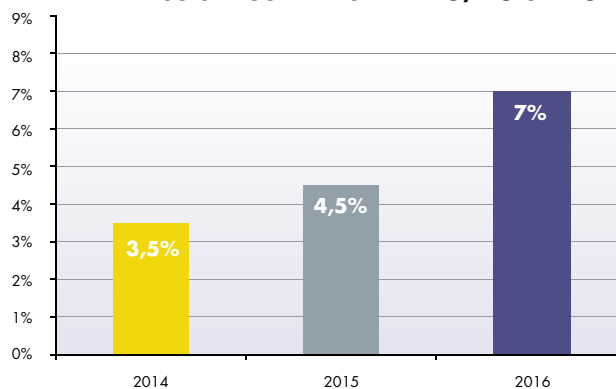
We are a critical organization; we often talk about what needs improving. But I think it's also important to consider where NINA has helped us. Examples are the improved safety statistics and open communication within the company. Still, if we take a critical view, it's also true that many colleagues think management isn't taking a sufficiently visible role in projects. If managers actively take on their role as agreed in the NINA Impulse, we can achieve major improvements over the coming year. If you organize a management round, you might pick up on issues that colleagues don't see when they're

Due to takeovers, we've experienced a lot of integration in recent years and the company has been divided into three divisions. Several programs were also implemented and now it's time to return our focus to the main task of contracting and carrying out projects. Operational Excellence needs to regain prominence on the agenda. That's not only good for safety but good for Boskalis."

# How to avoid hoisting incidents

Incidents involving cranes or the hoisting of loads regularly recur in the statistics. These involve incidents that are linked to the circumstances surrounding the crane and those directly related to the hoisting activity. Both types are in the spotlight: a standard is being developed for working with and around cranes as well as a Workbox Hoisting that will cover awareness of the potential risks when hoisting loads.

NEAR MISS & ACCIDENTS LIFTING/HOISTING



Since 2014 the number of near miss incidents and accidents on lifting / hoisting increased. These figures emphasize the increased attention.

## Developing a standard for working with and around a crane

In 2012 and 2015, two identical accidents occurred in Panama and Egypt: a man was trapped between the counterweight of the crane and the crawlers (tracks). Both cranes were set up on a pontoon. In both cases, the operator was unaware that the man was behind/under the crane. And both victims died from their injuries. In order to prevent such incidents, the Crane Investigation Working Group is developing a standard with which the crane and the conditions around the crane must comply.

### Crane Investigation Working Group

Despite these efforts, a similar incident occurred three years later. That set off all the alarm bells: THIS CAN NEVER HAPPEN AGAIN. And it led to the creation of the 'Crane Investigation' working group in 2016, with participants from all divisions. The objective was to create a standard to which a crane and the conditions around the crane must comply. It's about technology, procedures and behavior. The standard will be set up as a checklist and form part of the EQP501 Technical Safety standard.

### Clear agreements

Deputy Director Offshore Fleet Management, Edgar van Oers, supports the idea of creating alignment. "We currently have too much faith in the other party's expertise, for instance when renting equipment. Our own people also need to know how to assess a situation. Procedures should be put in place for the setting up of a pontoon/barge with a crane, for the implementation of physical partitions. Raising awareness is key: Stay away from a working crane. If you have to be near the crane: make clear agreements about how you will approach it and communicate these to everyone."

### Traffic light system

The checklist and standard will be available during the course of this year. ■



### Safer conditions around a crane:

#### Procedures:

**Standing Order:** no one is allowed near the crane when it's operational.

#### Technology:

**Traffic light system:** if the crane is in operation, the traffic light is red. If someone needs to get into the crane, he asks the operator for permission. The operator can turn the light 'green' only if he has pivoted the crane into the right position and reduced the rotations of the engine to stationary.

**Cameras** around the crane enabling the operator to see whether someone is in the danger zone.

#### Behavior:

**Make agreements** on how to approach the crane.

6 After the accident in Panama in 2012, various measures were taken in area West to tighten the safety of conditions around the crane, explains crane engineer Leon Minnaard (see box). NINA is also contributing to safer working conditions: "When it comes to the vessel-specific risk assessment, we're meeting with the key crew and local home-grown workers to ask for their ideas. An example of what's come up is the recommendation not to perform maintenance continuously, but at fixed times."





# Expected in 2017: Workbox Hoisting

**A decision was made to develop a Workbox Hoisting in the light of an increasing number of incidents and lack of knowledge among employees.**

There was a serious hoisting accident last autumn on board the 'Oranje' hopper. The crew was hoisting a load that was wider than the hole it had to pass through. It was decided that the best solution was to hoist the load at an angle. When it started to turn, a hoisting belt broke and the load fell. While rushing to a safe spot, a colleague tripped over the sill of a watertight door and his leg was severely injured. In the end, his left leg was amputated. The essence of this story can be told in a few words, but the consequences of this very serious accident will last a lifetime for the victim, his family and colleagues.

## Knowledge and awareness

The accident on the Oranje is not an isolated incident. The general sense is that there are too many incidents involving hoisting. In an effort to turn this around, one of the initiatives involves developing a Workbox Hoisting. Fleet Manager, Arie Kamsteeg: "Hoisting is no longer the same as it was, say, ten years ago. Everything is bigger and heavier, which means so much is hoisted, so often, that it's become routine. At the same time, we're seeing that people's know-how is lagging behind. We want the Workbox Hoisting to boost people's awareness as well as their know-how, based on lessons learned."

*Hoisting with deck cranes on a hopperdredger*



*Taklift 4 with module 9C weight approx. 900t*

## Tightening safety measures

A second initiative is to study a possible tightening of the risk categories. Indeed, it is noteworthy that the law does not require a certified crane operator to be on board a ship. Anyone can do it. In the light of a hoisting incident, Mariano Capriotti, Master of the Cyrus, asked whether there was a policy on this subject. Arie Kamsteeg: "There is no policy. The question is whether we should aim for one, given the practical feasibility. We are currently examining whether we need to tighten the safety measures on hoisting, which is

currently a risk category 1 activity. This means a risk assessment is sufficient. If we scale this up to level 2 for complex jobs, a Job Hazard Analysis is required. The option of tightening it up forces you to discuss how to approach this in advance."

***The Workbox Hoisting will be available in the course of this year.***





# Sharing lessons learned with the Works Council Committee for Safety, Health, Welfare and Environment (WCCSHWE)

‘Learning from and with each other on the subject of safety’ is an important objective of the WCCSHWE. With eleven members, this is the largest committee and includes participants from the works council as well as external members. “Safety has no limits, so we want the entire company to be represented,” says Chairman Dirk van Uitert, Works Manager Dredging.

The Committee ensures that employers in the Netherlands comply with the laws and regulations relating to working conditions (Arbeidsomstandigheden [ARBO]). The Committee members have insight into reports from the Inspectorate for Social Affairs and Employment. In addition - and this



is new - the Committee can request business-risk inventories for commercial buildings that have been in use for over three months.

## Cross-pollination

The members regularly attend courses in order to properly fulfill their roles. But the most ‘learning’ happens during the bimonthly committee meetings. At the initiative of Dirk van Uitert, each of these meetings is held at a different project location in the Netherlands so that everyone can get an up-close look at what goes on. During the meetings, all the members discuss incidents/near misses from their own division. This exchange is very valuable, according to external member Sylvia Tervoort, Salvage Master.

“What strikes me is the open communication within the committee. Everything is on the table and it’s all discussed without preconceptions or judgments. I take the lessons learned to the department and vice versa. Could the same thing happen to us? Or, how should we handle this? This is what creates cross-pollination of ideas.”



## Colophon

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**Editing address:**  
Boskalis Safety Matters  
P.O. Box 43  
3350 AA Papendrecht  
The Netherlands  
Tel.: +31 (0)78 696 90 11  
E-mail: [safety@boskalis.com](mailto:safety@boskalis.com)

