



IADC 2011 ANNUAL SAFETY AWARD: "WORK SAFE" – AN INNOVATIVE SYSTEM OF SAFE WORK PRACTICES

Each year the International Association of Dredging Companies (IADC) singles out a specific project or programme from its member companies as an example of excellence in safety. This year the IADC Board presented the 2011 Safety Award to Van Oord for its overall safety programme *Work Safe* that has been implemented over the last two years. Van Oord CEO Mr Pieter van Oord received the award from Mr René Kolman, IADC Secretary General and Mr Koos van Oord, IADC President at IADC's annual meeting in September.

As part of the *Work Safe* programme, Van Oord has developed a number of Safe Work Practices (SWPs) that are aimed at people in the field. These people – on Van Oord's vessels and projects – are increasingly safety conscious. This awareness means that employees are looking for practical ways to make safety work. In dredging, approaching safety too much from a theoretical angle is not overly useful. What people need are tools that can be used "right here" and "right now". With the Safe Work Practices that have been developed, using input from the Safety Instructions of the Vereniging van Waterbouwers (the Dutch maritime organisation), the (Dutch) Arbo Catalogue and broad advice from people in the field, Van Oord has aimed

to achieve just that: Tools for the people who are on the job, who are most likely to benefit from them.

WORK SMART, WORK SAFE

Achieving a safe working environment is part of every operation and the responsibility of every employee. After taking inventory of the accidents on site over the last few years, Van Oord's management and Quality Health Safety Environment (QHSE) Department decided to implement a comprehensive programme to address overall safety. The result was *Work Safe*.

There are many challenges inherent to maritime construction. To meet these challenges and to realise innovative and sustainable solutions requires the dedication of all members of the team. To start, the QHSE team surveyed and interviewed employees about on-the-job safety, asking them what they saw as necessary to achieve a safer working environment. For instance, what should one do – and

Above: The safety of all employees is always the first priority and starts with each person taking responsibility. Whether working on land or at sea, one of the "Work Safe" essential Safety Work Practices is wearing the proper Personal Protective Equipment (PPE).

especially not do – within the framework of safety during a particular task?

The rules in the "Safe Work Practice" (SWP) information sheets have been created based both on their answers plus an analysis of the most typical types of accidents that occur during dredging projects. From this process, "lessons learnt" have been derived. With the lessons learnt from the past, plus the guidelines of various safety organisations, as of 2010 new rules have been implemented.

An essential result in the *Work Safe* system was the creation of an instruction sheet for each specific process, for instance, anchor handling, working in and around excavations, working with gas and oxygen or procedures for lifting operations. Each action is addressed separately and a list of instructions has been written which describes the safety issues related to that particular operation. For each of these safety guidelines the rule of thumb is that they "apply to Van Oord projects" in the broadest sense. Additional control measures may be required, depending on project and country requirements" (Figure 1).

THE INSTRUCTION SHEETS

Each instruction sheet covers a specific subject and includes a section on: The Purpose, a



Mr. Pieter van Oord (left) accepts the IADC Safety Award 2011 from Mr. Koos van Oord, IADC President (right) and Mr. René Kolman, IADC Secretary General (middle).

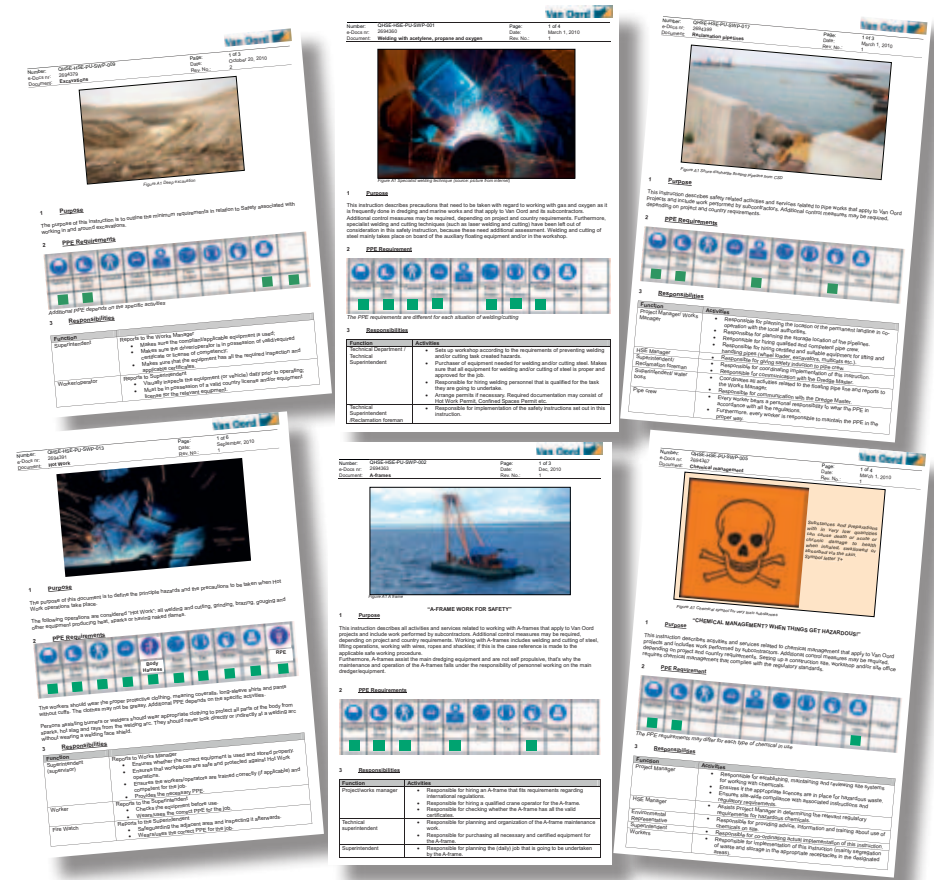


Figure 1. For each of a broad variety of activities, an instruction sheet has been developed.

chart with the PPE Requirements (Figure 2), Responsibilities, Methods or Procedures and References for further information such as Applicable legislation, Safety instruction booklet and ARBO regulations. Training practices with life boats are an essential part of good preparation (Figure 3).

An example of how Safe Work Practices (SWPs) are defined is shown in the instruction sheet for Lifting operations entitled, "No Load Too Heavy If Lifted Safely", issued in October 2010 (see box, Figure 4).

Some of the other subjects covered by the SWP Sheets, their purposes and date of implementation are summarised:

- *Welding with Acetylene, Propane and Oxygen – March 2010*

This instruction describes precautions that need to be taken with regard to working with gas and oxygen as it is frequently done in dredging and marine works. Specialist welding and cutting techniques (such as laser welding and cutting) have been left out of consideration in this safety instruction, because these need

additional assessment. Welding and cutting of steel mainly takes place on board of the auxiliary floating equipment and/or in the workshop.

- *"Chemical Management? When Things Get Hazardous!" – March 2010*

This instruction describes activities and services related to chemical management. Setting up a construction site, workshop and/or site office requires chemical management that complies with the regulatory standards.

Hard Hat	Safety Boots	Coverall	Safety Glasses	Life Jacket	Face Shield	Ear Protection	Gloves	Hivisibility Vest	Other	

Figure 2. This PPE chart is part of each information sheet and indicates with a check mark which PPE element is necessary.



Figure 3. Training exercises with a lifeboat on board the flexible fallpipe vessel Nordnes.

• *Reclamation pipelines – March 2010*

This instruction describes safety related activities and services related to pipe works, such as safety precautions for working with, caring for and properly storing both landlines and floating pipelines.

• *Electric Arc Welding – March 2010*

This instruction describes necessary precautions that need to be taken with regard to electric arc welding of steel as it is frequently done in dredging and marine works. Specialist welding techniques (such as laser cutting) have been left

out of consideration in this safety instruction. Arc welding of steel mainly takes place on board of the auxiliary floating equipment and/or in the workshop. The HSE safety precautions that are required differ for each situation; extra precautions are required above water.

• *Confined and Enclosed Spaces – October 2010*

This SWP describes all activities and services that apply to Van Oord projects, vessels and yards where work involving, or tasks associated with confined spaces, takes place.

• *Excavations – October 2010*

The purpose of this instruction is to outline the minimum requirements in relation to Safety associated with working in and around excavations. These include consideration of soil stability, battering or stepping excavations, inspections, and extra attention spent to falls, collapses, over-running of vehicles, safe access to and egress from an excavation and hazardous atmospheres.

• *Hand Tools – October 2010*

The purpose of this document is to ensure that the use, inspection and maintenance of hand tools are executed in a controlled and safe manner. This includes non-powered, powered, hydraulic and pneumatic tools.

“NO LOAD TOO HEAVY IF LIFTED SAFELY”

Investigation results show that lifting incidents are increasing.

The incidents that have been identified can be traced to the following root causes:

- Lack of planning and competent supervision;
- Incorrect placement of cranes;
- Failure to correctly calculate or estimate the load;
- Failure of personnel to carry out the correct procedures;
- Carelessness and complacency; Use of wrong lifting gears;
- Faulty devices or machines;
- Lack of proper maintenance.

This source of this information was the Ministry of Manpower, Singapore.

Within Van Oord a significant increase of lifting incidents was reported in recent years. The purpose of this document is to ensure that lifting operations are executed in a controlled and safe manner in accordance with the applicable standards.

These standards are minimum Van Oord standards and provide a guide for the Works Manager / Superintendent to select lifting appliances and execute a lifting job within safety limitations.

The guidelines as referred to in this document apply for heavy lift (heavy lift = > 35 T) operations and for non-routine lifting jobs. Local requirements might be more stringent and if this is the case the local regulations prevail.

Definitions of:

- Lifting appliances: Any mechanical device capable of raising or lowering a load: cranes, forklift, manual hoist, lever hoist, rope hoist, beam trolleys, sheave blocks, winches, etc.
- Lifting accessories: Any device whatsoever which is used or designed to be used directly or indirectly to connect a load to a lifting appliance and which does not form part of the load; wire rope slings, chain slings, webbing slings, shackles, eye bolts, wedge sockets, etc.
- Lifting equipment: Lifting appliances and accessories



Figure 4. Lifting is an integral part of dredging operations and requires special attention and expertise to ensure that it is executed in a controlled and safe manner.

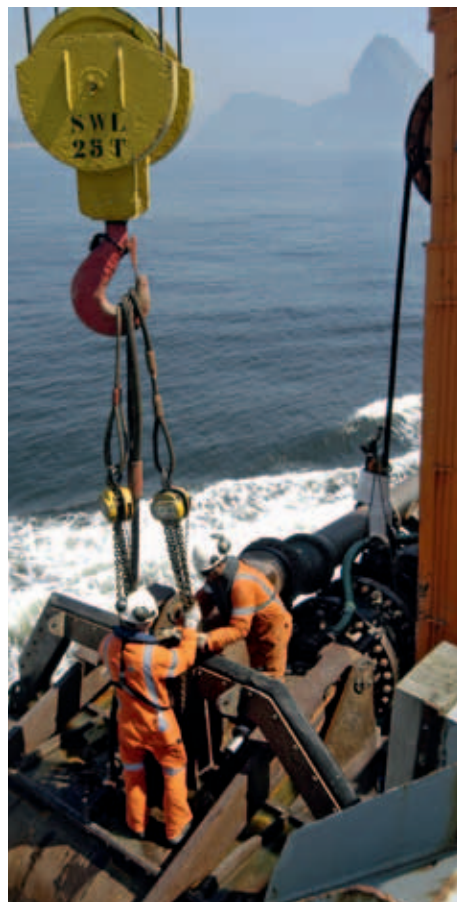


Figure 5 Working on board trailing suction hopper dredger Geopotex 15 in Rio de Janeiro, Brazil.

- *Multicats – "Assisting With Speed, Accuracy and Safety" – March 2010*

This instruction describes all activities and services related to working with multicats. Furthermore, working with multicats also includes welding and cutting of steel, lifting operations, working with wires, ropes and shackles; in this case reference is made to the applicable SWPs.

- *Safe Mooring and Working with Mooring Lines – March 2010*

The purpose of this document is to ensure that mooring and working with mooring lines is executed in a controlled and safe manner, with subjects such as line handling, unmooring, snap back zones and correct use of stoppers.

- *Hot Work – September 2010*

This document defines the principle hazards and the precautions to be taken when Hot Work operations take place. The following operations are considered "Hot Work": All welding and cutting, grinding, brazing, gouging and other equipment producing heat, sparks or having naked flames.

- *A-Frame Work For Safety – December 2010*

This instruction describes all activities and services related to working with A-frame.

Working with A-frames includes welding and cutting of steel, lifting operations, working with wires, ropes and shackles; if this is the case reference is made to the applicable safe working procedure. A-frames assist the main dredging equipment and are not self-propulsive, which is why the maintenance and operation of the A-frames falls under the responsibility of personnel working on the main dredger/equipment.

- *Sinker Pipelines – March 2011*

This document describes the work method and equipment to be used during the transport and placement of a sinker pipeline. The following steps are described: Preparations, Transport of sinker pipeline; Positioning of the sinker pipeline; Connection to the shore; Sinking of the sinker pipeline; Connection to the floating pipeline; Sinker pipeline position; and Raising the sinker pipeline.

- *Working Over or Near Water – April 2011*

This SWP sheet aims to provide a practical practice to execute working over or near water activities. The scope of this SWP is to define the risk areas, prevention from falls in the water, when a buoyancy aid must be worn and which type can be used, as well as types of rescue equipment in case a person falls into the water.

CONCLUSIONS

The safety of all employees is always the highest priority when executing a dredging project. The people who know best how incidents occur and can be avoided are the workers themselves. Therefore surveying and analysing their experiences has proved invaluable in creating a safer work place.

At the end of the day, the responsibility for a safe work environment falls on everyone's shoulders. Together working with QHSE team and employees to develop a safety programme, Van Oord has already had encouraging results. From 2010 to the present a significant decrease of on-job incidents has been noted.

These SWP information sheets are an on-going project and continue to be developed for other subjects.