

Safe and sound

For centuries the Dutch have been fighting sea and rivers to make their country safer. Worldwide, countries approach the Netherlands for advice in the area of dredging. But this is not the only area we are active in to increase the safety in the maritime industry. Maritime by Holland Magazine takes a closer look at three projects in which Dutch companies are involved, that were designed to enhance safety.

Several years ago, in 2006 the Norwegian Statoil contacted research partner TNO to investigate the safety of their freefall lifeboats in a project called Improving Freefall Lifeboat Safety. The findings caused Det Norske Veritas to extend the current SOLAS-standard for free fall lifeboats on platforms and to develop the DNV-OS-E406. In this new offshore standard requirements for freefall lifeboats are enhanced, which improves the safety of the lifeboat occupants. The Petroleum Safety Authority decided that from 2015 all Norwegian freefall lifeboats at platforms must meet these demands.

Occupant safety

One of the suppliers for freefall lifeboats in Norway is **Dutch company** Verhoef Access Technology, located in Aalsmeerderbrug, whose experience with aluminium vessels goes back to 1939. Martin Verhoef, Vice President, says: "In 1960 the first freefall lifeboat in the world, designed by my father, and installed on a Dutch coaster. Obviously it was made of aluminium alloys, because of the well known mechanical properties: light, strong and a long duration of life. Same qualities are still very valuable for the design and construction of freefall lifeboats, which are even built today and can meet the highest requirements.

Verhoef Aluminium BV was involved in the development of the new DNV standard and is now applying the new requirements to their lifeboats. The DNV standard has three main topics, which are structural safety, positive headway and human safety. For example, research has shown that the average weight of a worker on an offshore platform is 98 kilogrammes, the SOLAS-standard uses the criteria that the seats of the lifeboats must be able to carry a person of 82.5 kgs, and DNV has pushed this number up to 100 kilogrammes with a maximum up to 150 kgs. for testing. The same goes for height, which ranges from 1.50 metres to 2.10 metres long. In order to meet these demands Verhoef designed aluminium seats for their freefall lifeboats with a sliding headrest, onto which the newly developed five-point harness is attached. This way the seat can always be adjusted to the passenger, guaranteeing maximum safety during the launch. Verhoef with their extensive expertise in the design and fabrication of freefall lifeboats, was involved and consulted several times during the development of the DNV standard. In fact a number of the latest safety requirements are directly coming from the Dutch lifeboat builder.

In order to test Verhoef's new seat design they contacted TNO. "TNO is the only place in the world where you can test these kind of seats and, next to this, you identify yourself with a world-renowned research institute. We first conducted model drop tests at MARIN, these results were discussed with TNO who used this data for their own tests on our seats. They were tested with dummies with a weight up to 150 kilogrammes that was multiplied with the measured G-powers and a safety factor. Based on this, TNO developed a computer model that can simulate a set of situations. Then, TNO performed an occupant safety analysis, from which we can extract data to use to enhance the seats. The DNV standard is a step forward to improving the occupant safety. Verhoef as one of the leading suppliers of freefall lifeboats in the world, is eager to take this opportunity, and considers it as a challenge and obligation to improve safety of lifeboats even further. After the introduction of the DNV standard Verhoef has decided to manufacture only freefall lifeboats in line with these requirements, which matches with their company policy to deliver only the safest lifeboats !

All the boats that will be delivered from 2014 on meet these new demands, including a drop test for each free fall lifeboat from their installation height prior to delivery", Verhoef concludes.