

Protective clothing helps save Lives

Occupational health and safety is an invention of the modern era. A job as an underground miner or mariner was once associated with high health risks. Only the development of new materials for clothing and more strict occupational safety standards has largely eliminated the risk – or so it is thought. But the statistics tell a different story.

In 1834, after years of experimentation, a high-level German mining official named Julius Albert invented the iron wire rope and revolutionised mining in the Harz foothills region of Germany in which ore mines abound. Consumption of hemp ropes up to that point had been enormous and very costly. And not least, snapped ropes also claimed numerous victims from the ranks of the miners. The second leading cause of accidents was, then as now, falling equipment. “Hardly anybody was thinking about occupational safety,” says Hans-W. Renneberg, an expert in safety equipment from Hamburg, who definitely sees himself in the tradition of the very few occupational safety firms of the early industrial era.

2nd-greatest cause of death in reportable accidents

According to Germany’s government accident insurance agency, the Deutsche Gesetzliche Unfallversicherung (DGUV), more than 26,000 reportable accidents were caused by falling objects in 2014. In the incidents, 31 people lost their lives. That accounts for nearly 10 % of all fatal accidents in the same year, which makes accidents caused by falling objects second only to those involving falling persons as a cause for fatalities. Another 360 people were seriously injured by falling objects and are no longer fit for work. Although these figures are for the German economy as a whole, it is clear that working on wind turbines – particularly offshore turbines – is not a low-risk profession.

Despite these figures, company protective measures place the focus on the safety and rescue of employees, in

Logistics & operations

His tools are secured in an exemplary manner.





It is a matter of confidence, but supervising the tools is much better.

Photo: Renneberg

the event of an accident. The tendency is to see securing an object as secondary. Renneberg says, "People need to understand that even a half-kilogram object – a hammer, for instance – falling from a height of just 2 metres can cause serious injury."

Here's another example: a 3.7 kg universal spanner falling from a height of 14 m and then glancing off an object six meters above the ground will be deflected 20 m to the side. At a height of 70 metres the spanner can be deflected up to 130 metres distance.

A case for risk management

Protection from falling objects should be a standard component of risk management. Without a doubt, it makes sense to place the same importance on securing tools against falls that we place on securing people against falls. A helmet makes sense for protection against light-weight objects falling from a relatively low height and can prevent injuries, but preventative measures are even better. Many tools can be attached directly to the belts or pockets of users with eyes or karabiners.

Often, it is also practical to attach tools directly to workers' wrists with an adjustable band. Ropes and lanyards are available in stores in a range of sizes and load limits. Renneberg recommends very simple solutions: "Straps can be fixed to tools with glass-reinforced silicon tape. We have special bags with closure systems that prevent objects falling out at heights."

Securing tools against falls significantly reduces the high costs that arise from work accidents or the loss of expensive tools. At least as important as securing tools against falls is training employees that work on wind turbines. On-location seminars (an MTU truck offering more than 70 courses) can be booked at any time through www.psa-absturzschutz.de.

Protective clothing, a good value

Relative restraint in procurement of certified protective clothing is hard to understand, considering the prices. One standard product is multi-standard trousers (to be more precise: HaVeP Multi Protector protective clothing 80008 trousers, certified according to EN 11611, EN 1149-5 and EN 61482-2 – flame retardant, anti-static, work trousers according to EN 20471, offering additional protection against welding arcs.) For such a product, the Hamburg work clothing specialists ask just over € 100. This corresponds roughly to the price of a normal pair of brand-name jeans which, legend has it, also got their start as work clothing. An FR61 multi-standard protective warning jacket (with six certifications, see the box)

Certifications for protective work jackets

EN 11612 A1 + A2, B1, C1, E3, F1:

heat-exposed industrial work

EN 11611 Class 1 A1 + A2:

welder protection

EN 1149-5:

electrostatic properties

EN 13034 Type 6:

chemical protection

EN 61482-1-2 Class 1:

protection against welding arcs

EN 20471 Class 3:

highly visible protective clothing

offers comprehensive protection from flame, heat, chemicals, as well as welding arcs, and costs just under € 130.

Always well dressed

For the special area of survival suits/immersion suits and life jackets, qualified providers trust only name-brand products from Hansen Protection (formerly Helly Hansen Spezialprodukter) of Norway, Mullion from Belgium, and Ursuk of Finland. Imported products from the far east or Thailand are nearly impossible to find.

When water temperatures are below 10 °C, offshore wind technicians are required to wear special protective clothing to drastically reduce the chances of a dangerous loss of body heat in the water. The company Mullion has added the 1MHW three-layer dry suit to its range of survival suits. This suit is suitable for helicopter transports and certified according to EN ISO 15027-1 and Solas 2010.

The EN ISO 15027-1 standard series published in late 2012 describes cold suits for protection against hypothermia and cold shock in cold water and defines suits for general use. Depending on the class, the suits ensure a corresponding chance of survival after a fall into cold water. There is a reason why the standards series defines the “chance of survival.” It makes a point of offering no guarantees, because the characteristics of cold protective suits are just one of the factors that come into play in a specific case. Whether and how long a technician who falls into water will survive depends on the specific environmental conditions the constitution of the individual, and the undergarments worn. A new trend in protective equipment is partial integration. An example of this is a cold suit with an integrated life vest.

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