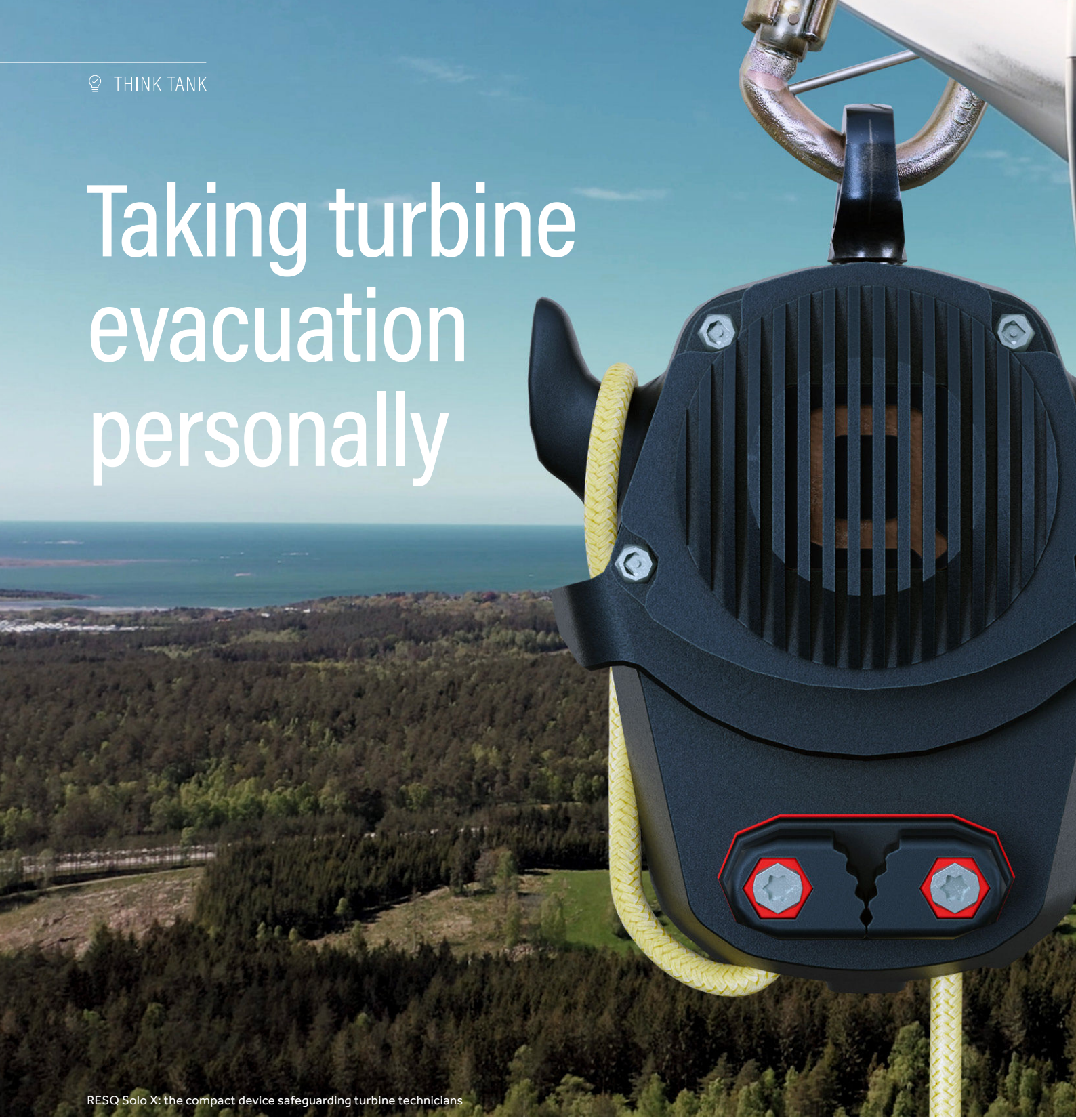
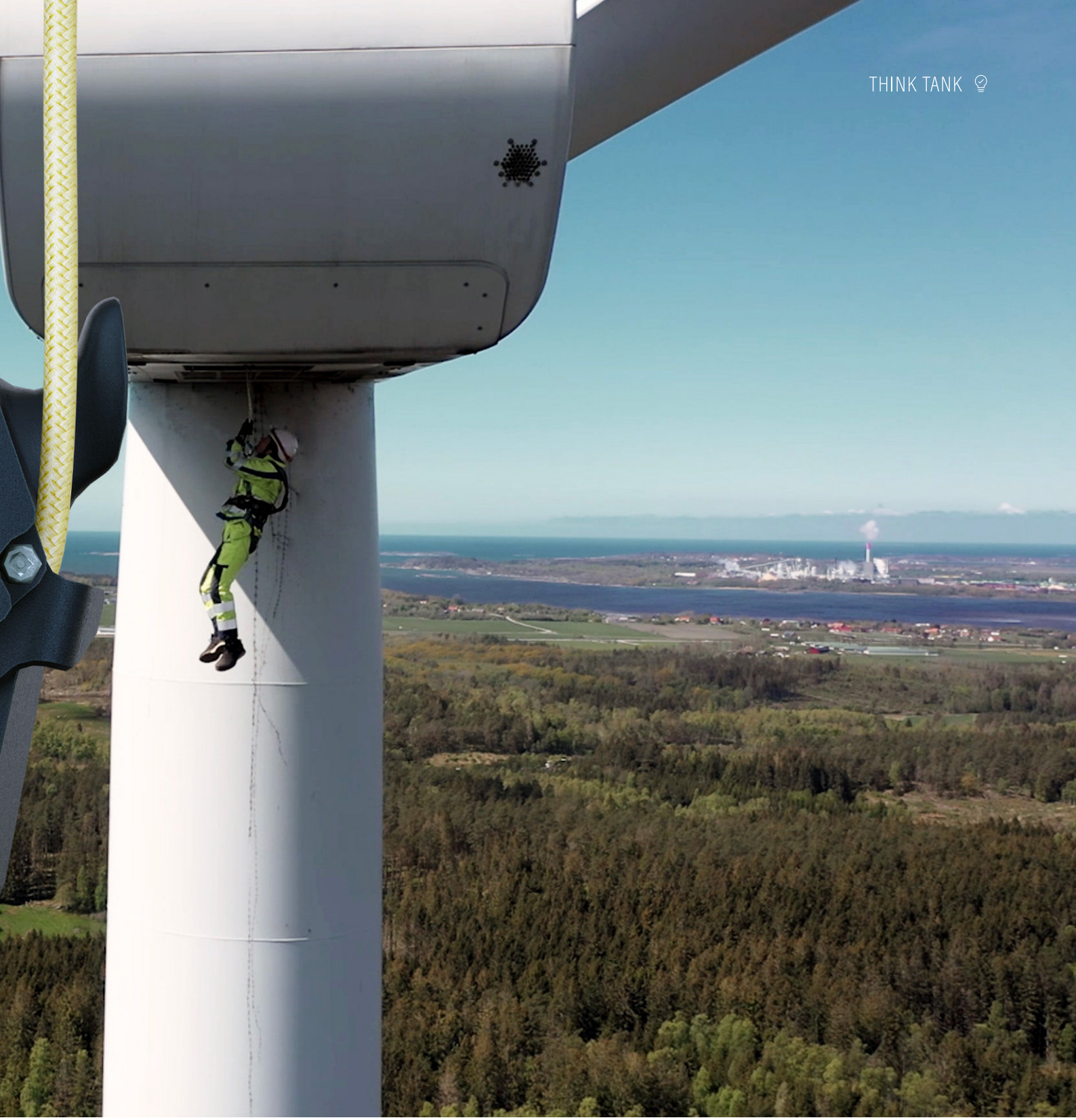
Taking turbine evacuation personally



RESQ Solo X: the compact device safeguarding turbine technicians

Wind energy is already a cornerstone of the global transition to renewable energy. As the number of countries committing to new wind energy projects increases, both on and offshore, the safety of wind turbine technicians is paramount. One of the most significant advancements in recent years is the shift from relying on stored emergency evacuation solutions in turbine nacelles to equipping technicians with personal evacuation devices. This trend allows technicians to take control of evacuation procedures, enhancing safety and preparedness.



The evolution of turbine safety

Traditionally, wind turbine evacuation procedures have relied on solutions stored within the turbine nacelle, providing vital and effective lifesaving systems fixed in place. However, while effective, they pose several challenges. One of these is around access, as determining the best location to store evacuation kits within a turbine is crucial.

Accessing equipment during an emergency can be time-consuming and there are also challenges around maintenance. Equipment is often stored in a nacelle for over a decade and requires regular service and maintenance checks, adding to operational complexities.

In recent years, the industry has seen a paradigm shift.

The focus is now on personal evacuation devices that technicians can carry. These compact, portable descenders are easily accessible, ensuring quicker and more efficient evacuations in an emergency. Leading the way in this transformation is the RESQ brand from Cresto Safety, renowned for its innovative and dependable rescue and evacuation solutions.

Why personal evacuation devices?

While turbine-based rescue and evacuation solutions should always be accessible, there are many advantages to workers carrying personal evacuation devices. Providing immediate access, personal devices eliminate the need to locate and deploy equipment stored within the nacelle, reducing evacuation times significantly and increasing the chances of a safe exit.

There is also reduced dependency; in the event of a turbine malfunction or structural damage, stored evacuation equipment might become inaccessible. Personal devices ensure a reliable means of evacuation regardless of the turbine's condition. Ease of operation is a further advantage. Tailored for individual use, personal evacuation devices are easier to operate under stressful conditions.

Technicians can gain confidence and familiarity with a device they handle and wear regularly, leading to more effective responses during emergencies.

These first-generation personal devices offer clear advantages, but they do require a degree of technical know-how. Training is key to ensuring that wind workers can successfully use these devices in high-pressure situations, making preparedness a crucial component of their effectiveness.

Designing for safety and efficiency

RESQ has been at the forefront of designing personal evacuation devices. The Smartline X, a manual personal device, has become increasingly popular in the wind industry. Designed to be lightweight and compact, the device does not impede the technician's movement or work. Despite its small size, it is robust and capable of supporting the technician's safe descent from significant heights. The advantage of the manual Smartline X is the element of control, allowing technicians to slow down and even stop, making it suitable for applications beyond evacuation.

The materials chosen for these devices are meticulously selected to ensure durability and performance. High strength aramid rope and metals ensure devices can withstand harsh weather conditions and the mechanical stresses of an emergency descent.
The devices are intuitive, with simple mechanisms, and can be easily activated under pressure.

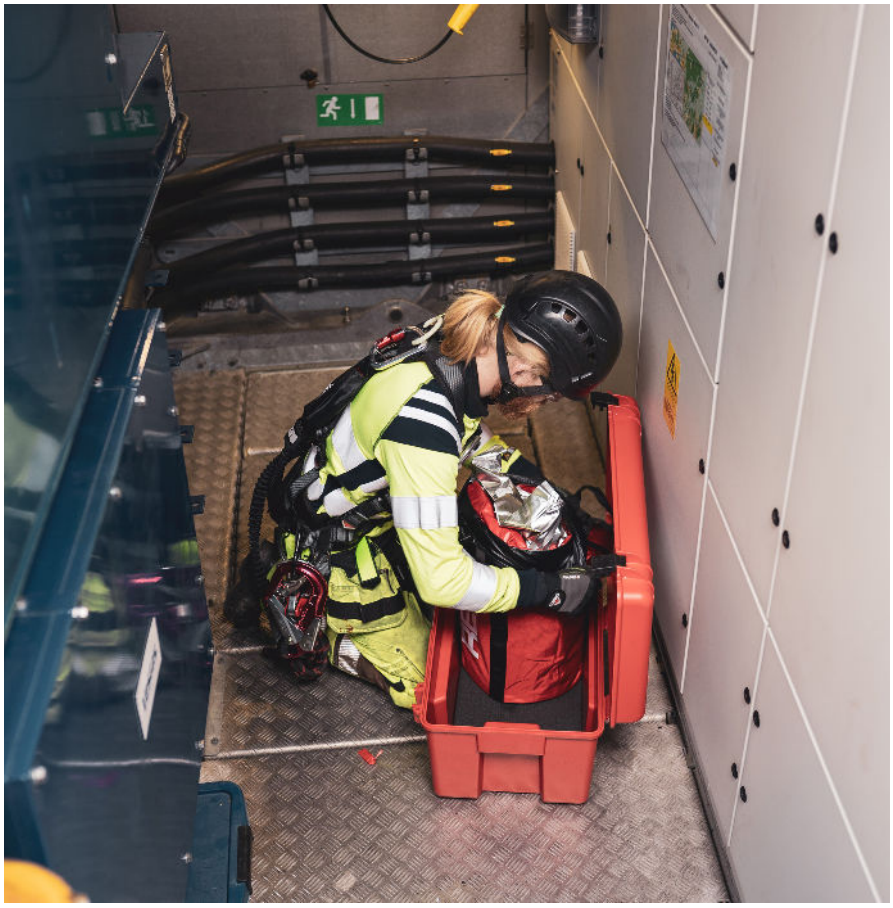
Introducing RESQ Solo X

The latest innovation from RESQ is the Solo X, an automatic device revolutionising wind turbine evacuation procedure. No bigger than a smartphone, the device is incredibly user-friendly and allows safe descents automatically during an emergency. This ultracompact device fits comfortably on a technician's belt, ensuring it is always within reach. This latest device is an evolution of the Smartline X, representing a move forward in innovation while maintaining the core benefits of safety and reliability.

'The Solo X is a game-changer for wind turbine safety,' says Jesper Lindquist, Product Manager for RESQ. 'We collaborated with some of the world's best engineers to create a device that is compact and easy to carry while also being incredibly simple to use, even under the most stressful conditions. The automatic descent feature ensures wind technicians can evacuate safely during a high-stress emergency scenario.'

Training and preparedness

A crucial aspect of the shift to personal evacuation devices is the emphasis on training and preparedness. Turbine technicians, who attach and carry a personal evacuation device as part of their PPE, are reminded each time they go to work about the importance of being prepared. As a result, workers are more receptive to personal evacuation equipment training. Courses often involve practical drills and simulations to familiarise technicians with devices and the procedures for their use.



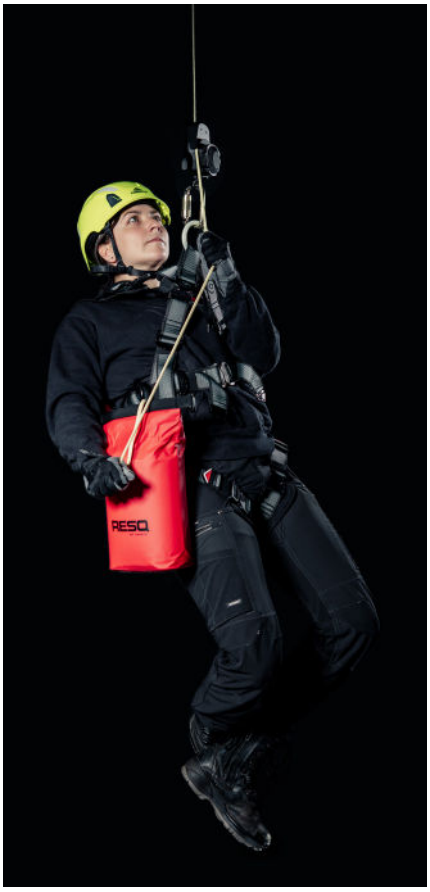
Red Box: storing turbine evacuation solutions within the nacelle

Regular refresher courses are essential to maintain a high level of preparedness. These sessions help technicians stay up-to-date with the latest safety protocols and advancements. Companies can significantly improve their safety culture by ensuring that staff are well-trained and confident in using their equipment.

Real-world applications

The move to personal evacuation devices has already shown positive results in real-world applications. Several wind energy companies have integrated these devices into their safety protocols, reporting increased efficiency in evacuation drills and higher confidence among technicians.

For instance, during a recent evacuation training drill carried out by GWO training specialists STL USA in Texas, technicians equipped with the RESQ Solo X completed the drill in significantly less time than drills using nacelle-stored equipment. The feedback from the technicians highlighted the ease of use and the reduced physical and mental strain during the evacuation process.



RESQ Solo X: precision and reliability

'I am incredibly impressed by how lightweight and easy to use the RESQ Solo X device is,' says Ben Dickens, VP of North America for STL USA. 'Having ANSI certification, as well as CE, means it's approved for the European and US markets. The RESQ Solo X represents a step change in personal rescue devices, removing most if not all of the opportunities for things to go wrong that we see with the first generation.'

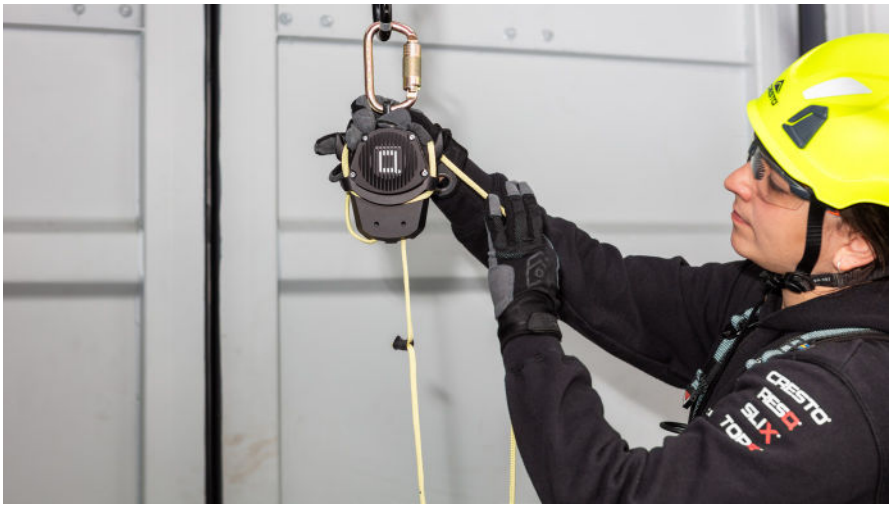
Despite the overwhelmingly positive reaction from the industry, Jesper Lindquist from RESQ believes in a comprehensive approach, adding, 'Solo X is a fantastic device, but I do believe there will always be a use case for manually operated descenders, like Smartline X. Also, it's important to not to downplay the importance of having a robust fixed evacuation system installed in every nacelle. There's no silver bullet when it comes to safety.'

While advanced personal evacuation devices provide significant benefits, manual descenders and nacelle-installed systems remain crucial components of a well-rounded safety strategy. This mix of solutions ensures that wind workers have multiple options available, enhancing overall safety and preparedness in emergency situations.

Overcoming challenges

While the shift to personal evacuation devices offers numerous benefits, it also comes with challenges, including initial cost. Equipping all technicians with personal devices can be costly. However, the long-term benefits of enhanced safety and reduced evacuation times outweigh this concern.

Wind Pro Protection: evacuation solutions from RESQ



Safe hands: RESQ Solo X meets ANSI and CE standards

Ensuring that all devices are consistently maintained and inspected is also essential. Companies must establish robust maintenance protocols to address this issue. Furthermore, integrating personal evacuation devices into existing safety frameworks requires careful planning and coordination. Wind energy companies must update their safety protocols and training programs to reflect the new equipment and procedures. This transition may seem complex, but with proper management, the benefits far outweigh the initial hurdles.

The future of wind turbine safety

As the wind energy sector continues to expand, the significance of safety advancements cannot be overstated. Personal evacuation devices represent a significant step forward in protecting the lives of wind turbine technicians. By providing immediate access to reliable evacuation tools, these devices empower technicians to take their safety into their own hands.

The industry can expect further advances in evacuation technology. Continuous research and development efforts will likely yield even more compact, efficient, and user-friendly devices. Additionally, advancements in materials science and engineering will enhance the durability and performance of these devices, ensuring they remain reliable under the most challenging conditions.

The integration of smart technology is another exciting possibility. As personal evacuation technology develops, more advanced features such as sensors and connectivity could provide real-time data and diagnostics. Such innovations would enable technicians and safety managers to monitor the condition and readiness of the devices continuously, further enhancing safety protocols.

'We are constantly looking for ways to improve our products and make them even more intuitive and reliable,' says Michaela Kmetíková, R&D Manager at Cresto Safety. 'Our goal is to provide workers at height, including turbine technicians, with the best possible solutions to ensure their safety.'

Conclusion

The shift towards personal evacuation devices marks a pivotal moment in the evolution of wind turbine safety. By providing technicians with small and dependable evacuation tools, the industry is making significant progress in improving safety standards. This trend not only enhances the immediate safety of technicians but also fosters a culture of preparedness and confidence.

As we move forward, companies like Cresto Safety, who manufacture safety solutions, will continue to invest in the further advancement of personal evacuation devices. By doing so, wind workers are better protected, as is the overall sustainability and resilience of the wind energy sector. In a field where safety is paramount, personal evacuation devices such as RESQ Solo X represent a crucial innovation that sets new standards for the industry.

www.crestosafety.com

Want to see the RESQ Solo X up close? Visit Cresto Safety at Stand A4.345 during WindEnergy Hamburg, from 24th to 27th September.

A team of safety experts will be on hand to demonstrate our full range of products, including safety and rescue solutions from the CRESTO, RESQ, TORQ, and SLIX ranges.

Don't miss this opportunity to explore the ultimate safety solutions for wind and discover how our innovations can enhance safety and efficiency in your operations.