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Marine evacuation systems - reliability at every stage



Special Report
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The 100th Survitec Marin Arc 2 was recently delivered. Here a system is under test off Norway

Maritime life-saving specialist Survitec has entered the new decade with a focus on what the company believes to be one of its strongest points - reliability.

Survitec's reputation for reliability has led to a high number of its marine evacuation systems (MES) being chosen for modern passenger vessels.

Survitec has a history going back over 160 years. This year also marked the centenary since RFD, now part of Survitec, was founded.

The story of RFD's technology dates back to 1920 with the introduction of an aircraft floatation product, essentially an inflatable ring, to prevent planes sinking when ditched. This technology quickly evolved to become dual purpose, as it also provided a means to rescue aircrew in an emergency.

As technologies and methodologies became more sophisticated, self-inflating liferafts became larger and in 1979, RFD launched its first purpose-built MES.

Four decades on, the original product range has been enhanced through design and acquisition, and now includes brands such as DSB, SurvitecZodiac and Brude.

Richard McCormick, Survitec's Technical Sales Director, explained: "Survitec is the original MES design authority. Since the introduction of the first marine evacuation system, Survitec has continued to pioneer design and supply award-winning, market leading MES solutions for our customers."

The primary focus of any critical safety equipment is safety and reliability – especially in the context of survival products, including MES. "If any one component does not perform, it could jeopardise the integrity of the product or system completely, not to mention the lives of those depending on it should disaster strike," McCormick added. "It is therefore imperative that all critical safety equipment is correctly installed, regularly serviced, maintained and regulatory compliant. Crew training is also essential to ensure correct use of the equipment.



Technical Sales Director Richard McCormick

"It is this continued focus on protecting our customers' people, assets and reputation, with quality products offering unparalleled safety and real value for money, which ensures we focus on delivering market leading products and services that are safe and reliable," he continued.

Survitec's MES' equipment is robustly engineered, comprehensively tested and, of course, fully approved to the latest standards.

McCormick added: "Our MES products and services epitomise everything that Survitec stands for – regulatory compliance, quality products, offering unparalleled safety-first solutions, coupled with real value for money. We have a proven track record when it comes to installation and deployments. I can say this with confidence knowing that our teams have successfully installed and deployed over 2,500 MES units on over 800 vessels worldwide."

Simple to operate

MES are compact, simple to operate and intrinsically safe making them a popular choice for many operators. A Survitec MES is

deployed with simple actions thus reducing the risk of human error and simplifying crew training requirements.

Survitec offers an extensive range of bespoke MES solutions to suit individual vessels, offering capacities of up to 860 persons, utilising slide or chute-based technology, as appropriate, from evacuation heights of up to 33 m. The largest single system, for example, the Marin Ark 2, can evacuate 860 persons in less than 30 minutes. Other systems are designed for high or low vessel freeboard requirements.

One of the latest references for Survitec's MES is the 'Stena Estrid', the first of Stena Line's new E-Flexer class ropaxes, which was delivered from the AVIC yard in China at the end of 2019 and entered service on the Irish Sea between Dublin and Holyhead in mid-January 2020. She is fitted with the 100th Marin Ark 2 MES unit.

Survitec's emphasis on reliability encompasses the whole design, manufacturing, installation, testing, commissioning, operation, servicing and maintenance processes.

Ordering an MES is just the start. Survitec's engineers will carry out a thorough evaluation of the ship's design, its areas of operation, and the profile of the crew and passengers likely to use the system. The company's knowledge and experience, combined with its culture of excellence, will ensure an optimum safety solution for customers, considering regulatory requirements, budget and expected lifetime of the vessel.

Each system undergoes testing to the IMO's MSC 81(70) Paragraph 12.6 performance standards, which simulate real-life emergencies, corresponding to Beaufort 6 winds and over 3 m significant wave heights. This is in addition to Survitec's own in-house tests.

"Survitec is also the only MES manufacturer to hold ISO 9001, MED Mod B & D and AS 100 Aero certification. This is an aviation industry approval standard, which is very difficult to achieve, due to the extensive

approval requirements. Manufacturing to this higher standard offers our customers extra assurances," McCormick said.

The care taken, and comprehensive inspection and checking, throughout the manufacturing, packing and installation processes, is reflected in the fact that the Marin Ark 2 MES has an impressive success rate for all deployments. This success can be attributed to Survitec's disciplined approach.

Extra quality measures are taken in the manufacturing and packing process to ensure reliability. "We visit our stowage subcontractor weekly to witness the build and all testing activity and our manufacturing process is overseen by independent quality personnel who perform in process inspection and testing, as well as end of line testing.

"To mitigate risk of human error once a system has been manufactured, Survitec employs experienced packers and, as an additional measure, adopts a buddy system to ensure conformity. Another additional measure is that we have an independent marshal process in place for our packing and stowage loading activity," McCormick explained.

Once an MES is installed and commissioned, Survitec takes responsibility for training customer's personnel. Servicing and testing are carried out by the company's approved service stations, each of which undergoes periodic and rigorous auditing to ensure that every MES is serviced to the same standards using the exact procedures regardless of location.

The company's service network, the world's largest with over 500 service stations, ensures that any issues can be dealt with promptly and professionally, throughout the vessel's life. The company's online servicing platform also enables fast and easy access to the full service and operational records of every system and provides a means for feeding back any issues encountered during servicing so that these can be quickly addressed avoiding impact on customers.

Comprehensive customer crew training to ensure crew are competent is also imperative to achieving high levels of reliability. MES training in line with SOLAS requirements covers operational procedures required to deploy the marine evacuation system giving both crew and operator's peace of mind that should it be required,

crew are well equipped to respond in an emergency. Training courses are run onshore at dedicated crew training facilities or, on board a customer's vessel.

“We are always seeking to innovate and to add value, providing enhanced learning experiences and offering greater flexibility,” McCormick concluded.

Seahaven - the future of cruise safety

The philosophy of reliability is carried through to Survitec's latest innovation, the Seahaven mass evacuation system (MES), designed for large cruise vessels.

Seahaven is the largest-capacity Advanced Evacuation System (AES) on the market, and the first slide-based evacuation system specifically designed for cruise ships.

This system is based on inflatable lifeboats, served by multiple slides. Each lifeboat can accommodate 530 persons, a total of 1,060 in each system. The multiple slides allow quick evacuation for both able bodied and mobility impaired persons. It also permits groups to descend together, reducing stress during the evacuation process.

It can be quickly and simply deployed in less than four minutes, thanks to its ergonomically designed easy launch system that does away with conventional davits. With the ever-growing capacity on board cruise ships, the need to evacuate passengers quickly and efficiently is more important than ever.

McCormick said: “We aim for operational excellence in everything we do at Survitec. This in turn means we can be confident that our culture drives high levels of reliability. When we talk about reliability, we are not just talking about the system, but the whole through life supply from design through to testing, manufacturing, delivery, commissioning as well as operational servicing and training.”



A Seahaven launch impression

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