

# Sire 2.0 ensures human factors are not over-simplified

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***OCIMF's increased focus on human factors through Sire 2.0 comes at a time when seafarers face a range of increasingly complex challenges. Wendy Laursen investigates.***

Tanker safety has always been everyone's business, and Sire 2.0 is designed to make sure human factors take a central role. It is an evolution of the Oil Companies International Marine Forum's (OCIMF) Ship Inspection Report Programme (SIRE) launched in 1993.

The forum itself was formed in 1970 in response to the growing public concern about marine pollution, particularly by oil, after the Torrey Canyon tanker disaster in 1967. OCIMF has over 100 members united by the vision of a global marine industry that causes no harm to people or the environment. It focuses on promoting best practice in the design, construction, and operation of tankers, barges, and offshore vessels.

The aim of the voluntary but widely adopted SIRE inspection regime is to enable the energy majors that are the core membership of OCIMF to make judgements on the quality and likely future performance of a

vessel before entrusting it with cargo. In conjunction with SIRE, OCIMF's Tanker Management and Self-Assessment (TMSA) program provides operators with a way of measuring the effectiveness of their safety management systems as part of their preparation for SIRE inspections.

Sire 2.0, in effect since September 2024, continues OCIMF's original purpose and scope but includes more in-depth reporting outcomes. "The release of SIRE 2.0 ensures this industry is better equipped to identify, understand and respond to emerging issues and to resolve root-causes of risk," said Karen Davis, director of OCIMF. "It represents an important step forward in our collective efforts to make sure the safety of vessels, crews, cargoes and the environment are placed front-and-centre in all decision-making."

There is enhanced focus on human factors which OCIMF defines as the physical, psychological, and social characteristics that affect human interaction with equipment, systems, processes, other individuals, and work teams. "Taking a human factors approach means recognising that it is the people on the ships and in the operations and support teams who make safety work, but that human error still occurs in interaction with conditions, systems, and/or other people. It is by addressing these interactions that the industry can reduce human error and so reduce incidents and improve reliability and productivity."

Dr Rafet Emek Kurt, director of the Maritime Human Factors Centre at the University of Strathclyde, and co-founder of maritime learning solutions firm WiseStella, says that the industry had reached a plateau under the previous SIRE regime where despite technical advances and more regulations, safety levels had remained fairly steady. "Everyone started to recognise that a paradigm change was needed."

With SIRE 2.0, inspectors will expect to see good quality hardware and procedures in place, and they will also expect the humans in charge of the processes to be aware of what they are doing, he says. The stronger focus being placed on human factors means there are now questions to be answered by both junior and senior officers to ensure they understand equipment and procedures onboard.

It's important not to under-value or over-simplify human factors, says Kurt. "Sometimes human factors are just considered to be 'common sense.' Unfortunately, this is not the case. Understanding human factors involves recognition of human limitations. This starts from understanding the cognitive load of seafarers during normal, day-to-day operation and then taking that to how they can be relied on during safety critical procedures.

"It also includes interface designs. Sometimes in our presentations, we provide visuals of different shapes, and we ask: Which one is grey? Which one is white? Our audience makes various choices, but actually, they are the same colour – we have just changed the background. The lesson to be learned from this example is that context is important, and the human brain can get confused if context is not considered carefully."

Kurt points to contextual changes ahead including the adoption of decarbonisation technologies such as sails and air lubrication, new fuels, and automation. "The rush to install these technologies so ships can meet targets should not see human factors overlooked. We have smaller crews nowadays, and while the physical workload is being reduced, the cognitive workload is increasing significantly."

The cognitive workload involved in undergoing SIRE 2.0 inspections has also increased, at least temporarily while the industry adjusts to it. Sire 2.0 inspections are now handled digitally from tablets, and this facilitates the individualisation of each inspection to suit a particular vessel and risk profile. Vessel operators and crews need to be prepared to answer questions sourced from a 1,600-page digest; core, recurring questions as well as a variety of other questions tailored to the vessel or specific focus areas for OCIMF safety campaigns.

The SIRE 2.0 process requires that the inspector observes officers and crew performing their normal day-to-day activities. Inspectors will also interview officers and crew on aspects of their duties which may not be undertaken during the inspection, such as the use and demonstration of life saving and fire-fighting equipment.

Inspectors have been trained to better understand the impact of the inspection on crews, and OCIMF has recognised that crew nervousness and fear are significant performance influencing factors. Sometimes, this may be due to the inspection itself or it may be a pre-existing factor amongst a crew. In either case, it is expected to be recognised and reported by the inspector.

Inspectors will integrate photographs taken during the inspection with external reports such as those from Port State Control. Added to the question responses and observations, this will provide more detailed, reliable, granular, and comparable information, says OCIMF.

The new format and content of SIRE 2.0 is a challenge for operators and crews, says Kurt, as each will have to demonstrate a good level of knowledge. "Preparing for it is a multi-level task, and each will need practice, and perhaps guidance, on the specific intent of each potential question they will be asked."

OCIMF is well aware of the challenges associated with change. "SIRE 2.0 is a more comprehensive and robust inspection regime, and OCIMF appreciates that switching to it is a significant undertaking for all program users," says Davis. "This is a necessary and exciting step forward in our collective ability to reduce risk and harm to people and the environment."

Davis says the forum will continue to work with its programmes committee to incorporate industry feedback and to adapt to the ever-evolving landscape of maritime operations, ensuring that SIRE 2.0 remains at the forefront of safety standards.

