

Rescue craft davit performance on an FPSO in heavy sea states and a davit design proposal

The purpose of this research is to increase the workability of a rescue craft launch and retrieval system on FPSOs in heavy sea states. Although a rescue craft's purpose is to improve safety, multiple incidents recorded in the GISIS database have proven that the launch and recovery operation can be dangerous or even deadly. The problem research shows that the davit system is the main cause for incidents, which are related to design flaws, lack of maintenance and human errors.

The opinion of the author is that a different type of launch and recovery system can lead to improvement on all three parameters and to an increased workability of the system. To compare a new design with the conventional design, a computational model of both designs is built to simulate the launch of a rescue craft from an FPSO in various sea states.

The conventional model shows dangerous accelerations in high sea states and the risk to collide with the hull of the FPSO. The concept design aims to reduce these motions and, in addition, provide a more redundant design with easy maintenance and focused on reducing human errors.

After comparison, the concept design proves to reduce dangerous motions during launch and increases the workability in high sea states, while being very simplistic robust and easy to operate. However, in the splash zone the concept model does not mitigate dangerous motions sufficiently. To further substantiate this conclusion, it is advised to further investigate the splash zone model and to develop a more detailed model of the concept design.