

Liebherr presents its first Simulator for Operator Training on Deep Foundation Equipment at Conexpo 2014

March 2014 – The Liebherr simulator (LiSIM®) for deep foundation and lifting applications is one of Liebherr's world premieres at Conexpo Con/Agg 2014 in Las Vegas (USA). Based on original machine software and hardware it increases both productivity and safety by providing a cost-effective and highly efficient operator training solution.

Finding efficient ways of up-skilling machine operators at the highest safety level while keeping time and costs at a minimum are central demands in the construction business nowadays. Liebherr simulations offer sophisticated solutions that tick all the boxes, allowing trainees to significantly improve their skills in a virtual but realistic environment.

Virtual training under realistic conditions

For the simulator, Liebherr's successful LB 28 rotary drilling rig with continuous flight auger (CFA), Kelly bar and casings as well as an LR 1300 crawler crane have been modelled. In addition, a realistic construction site has been virtually created with adjacent buildings, roads and fences as well as obstacles such as uneven ground, I-beams or rocks.

The drilling rig simulation replicates all aspects of the machine's real functions: the centre of mass changes automatically depending on the attachment; different soil conditions and their effects on both drilling physics and the crawlers of the machine are considered. In order to train crawler crane operators in a sophisticated way the simulator provides different environment and training scenarios. Full high definition flat screen monitors and high quality surround sound speakers reproduce the views and sounds typically experienced in the operator's cab; and the motion platform ensures that the operator experiences realistic and accurate movements in a Liebherr simulator.

The drilling rig simulator offers different training scenarios including basic drilling with Kelly bar, travelling with Kelly bar and CFA as well as multiple-hole drilling with Kelly bar.

Focus on safety and efficiency

A major benefit of this type of training is the ability to simulate harsh environmental conditions when required. This allows trainees to gain valuable experience in challenging situations without posing any safety risks. The resulting increase in skill allows for safe and productive operation under similar conditions in the real world.

The sophisticated LiSIM® environmental and physics replication provides an unprecedented level of detail and realism. Thanks to this non-destructible virtual environment, the operator has the opportunity to experience the operational limits of the machine without any consequences, gaining useful experience for highly efficient operation.

Original software and hardware

The installation of original Liebherr control systems, software and hardware guarantees a realistic training experience. The control systems reproduce all movements with exact precision both in space and in real-time. LiSIM® is the only realistic virtual solution available in the market for learning the innovative and precise handling of Liebherr's crawler crane and deep foundation machinery.

Easy integration in existing training centres

At the Conexpo Con/Agg 2014, the deep foundation simulator is shown as a classroom solution. Key advantage of this configuration is the easy integration into existing training centres with the display, seat and controls mounted on a base and a sturdy display frame.

Other possible configurations of the simulator are the easy-to-transport containerised solution, which houses the simulator in a 40-ft container and features a training room, utility room and cab simulator and the space-saving cab solution. This configuration ensures that the operator becomes familiar with controlling the crane in a real life environment. Each of the three models is equipped with multifunctional instructor stations.

The development of this advanced training tool is driven by Liebherr's extensive experience in highly immersive crane operator training as well as in other simulations – last year the company launched its range of maritime simulators for ship to shore, rubber tyre gantry, mobile harbour and offshore cranes.

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