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A Eurosatory 2016 first: Liebherr und Rheinmetall to unveil armoured rescue crane vehicle

At Eurosatory 2016 Liebherr-Werk Ehingen GmbH and Rheinmetall will unveil the new armoured rescue crane vehicle developed for the German Bundeswehr. Visitors to Eurosatory 2016 can take a closer look at this innovative system at the Rheinmetall Pavillon D211 – D261 in the outside area.

In 2012, Liebherr-Werk Ehingen GmbH, the world market leader for mobile cranes, started to developing an armoured rescue crane vehicle with the model name G-BKF for the German Army. The G-BKF is designed to be able to rescue and tow the new generation of armoured control and command vehicles, armoured transport vehicles, MULTI FSA (swap body vehicles) and wheeled vehicles which are currently in use whilst the operating personnel is being guarded.

The G-BKF is also capable of providing tactical infantry cover over long distances, providing repair and handling support and of rescue, recovery and emergency aid deployments.

High passenger protection requirements

The main focus when the order was placed was on the protection of passengers. To meet the high requirements in this respect, Liebherr-Werk Ehingen GmbH works with the leading European system house for military technology, Rheinmetall Defence, to produce the armoured driver's cab and armoured crane cab. The armoured driver's cab was extended by 250 mm compared to the standard Liebherr driver's cab to provide storage space for the extensive personal protective equipment for the vehicle crew and integrate the military communication equipment.

The armoured driver's cab is a double-thickness steel bulkhead construction. The transparent armour has been enhanced to ensure that it offers ballistic protection and meets the visibility requirements of the Road Traffic Act. The protection has been verified to STANAG 4569/ AEP 55.

The crane cab is also armoured and is a composite construction to reduce weight. The composite panels are made using a special design and bolted to a steel bearing structure.

Crane chassis similar to the standard version

The armoured G-BKF rescue crane vehicle is mounted on a 4-axle all-terrain crane chassis (8x8x8) which is similar to the standard version. Despite its weight and size it

has excellent off-road properties and manoeuvrability as a result of its large tyres, all-wheel drive and all-wheel steering. The speed-dependent rear axle steering with its 5 steering programs ensures high track stability at high speeds and maximum manoeuvrability.

The use of Liebherr's own "D946T1" diesel engine which develops 400 kW (544 bhp) with the ZF TC-Tronic gearbox with converter and 12 forwards gears and 2 reverse gears provides plenty of power for towing operations.

Variable towing and rescue modes

In towing mode vehicles up to a load of 16 tonnes can be mounted on the lift cradle of the underlift for towing. Military vehicles can be attached to STANAG eyelets using special adapters. Extensive range of accessories means that almost all German Army wheeled vehicles can be towed.

There are two Rotzler Treibmatik winches with tensile forces of 200 kN and 80 kN mounted on the rear of the vehicle. These tensile forces can be doubled by using return rollers. The use of both rescue winches together, connected using a control desk, provides a wide range of variations for a massive range of rescue operations. The smaller winch can be moved to the front using the vehicle's own crane for self-rescue purposes. The chassis is fitted with rescue jacks for rescuing a damaged vehicle from difficult terrain.

The rope of the hoist winch over the retracted telescopic boom and the rope of the 200 kN rescue winch means that synchronous winching is possible. This means that the damaged vehicle can be raised slightly whilst being pulled by the towing equipment at the same time.

Versatile

The G-BKF is fitted with a 20.9 m telescopic boom with which it can handle loads of up to 22,8 tonnes quickly and precisely. That means that the G-BKF is not only suitable for rescue deployments but it can also be used as a mobile crane for medium crane work.

All the crane's control functions, the towing device, the two rescue winches and the jacks can be operated either from a protected position in the crane's cab using the standard crane control stand or from the ground using the standard Liebherr remote control.

As early as the development phase, practical experience from overseas deployments by the German army was included in the design to ensure that it met all the conditions to provide the requisite performance in full.

Consideration was also given to the development of a family of future armoured mobile crane vehicles for the German Army. Special attention in this respect was given to ensuring that as many components as possible were standard and readily available on the market. One strict criterion was that all the machines must be operated in exactly the same way. This means that there is no difference between the driver's seat and crane operator's stand on the G-BKF, an armoured crane or a standard crane supplied by Liebherr-Werk Ehingen GmbH. This allows the amount of training required to be drastically reduced and incorrect operation to be ruled out to a large extent.

The special feature of this concept is the variable uses of the machine. There is not a need for rescue deployments every day but hoisting work is almost always required, whether it involves containers or unloading a truck. An extensive range of accessories ensures that rescue deployments are also possible. The important thing is that the team is familiar with the machine and works with it regularly so that they can carry out their duties quickly and confidently when required.

The G-BKF armoured rescue crane vehicle is flexible and versatile and can be used for a wide range of jobs whilst also being economical in terms of initial outlay and running costs.

About Liebherr-Werk Echingen GmbH

Liebherr is one of the leading manufacturers of mobile and crawler cranes. Its range of all-terrain mobile cranes extends from twin axle 35 tonnes cranes to heavy duty cranes with a load capacity of 1200 tonnes and a 9-axle chassis. Lattice boom cranes on mobile or crawler chassis have load capacities of up to 3,000 tonnes and their universal boom systems and extensive accessories mean that they are used on building sites all over the world.

Liebherr-Werk Echingen GmbH was founded in 1969. The company has undergone extensive expansion over the last few years to strengthen and expand its global position as the leading supplier of mobile and crawler cranes. Today the Liebherr plant in Echingen covers a total area of 850,000 m² with 240,000 m² of the site being covered production space. The Echingen site has a workforce of 3,200. Extensive, global service guarantees the high availability of Liebherr mobile and crawler cranes.

Product range: Telescopic mobile cranes, Lattice boom mobile cranes, Truck mounted telescopic cranes, Lattice boom crawler cranes, Telescopic crawler cranes

About Rheinmetall

Dedicated to the future imperatives of security and mobility, the high-tech Rheinmetall Group is listed on the stock exchange and headquartered in Düsseldorf.

Consisting of three divisions – Vehicle Systems, Electronic Solutions and Weapon and Munition – the Rheinmetall Group's Defence sector is one of Europe's foremost suppliers of defence technology, helping to keep armed forces around the globe in top form. Rheinmetall Defence products set the global standard for excellence in a wide array of disciplines: from vehicle, force protection and weapon systems to infantry equipment and air defence, and from network-enabled warfare capabilities to electro-optics and simulation technology. Providing friendly forces with the best-possible protection – that is our mission.

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