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“Force protection is our mission”: Rheinmetall’s comprehensive, made-to-measure protection

Small arms fire, guided missiles, explosively formed projectiles and improvised explosive devices are among the most serious threats facing troops during deployed operations today.

Whether the object is preventing optical, optronic or electronic detection, or developing individual body armour, innovative vehicle systems or even safeguarding large-scale critical infrastructure, Rheinmetall supplies cutting edge systems and total solutions.

A great strength of Rheinmetall is its unsurpassed ability to integrate new and existing technology into a highly effective system of systems.

In recent years, the Rheinmetall Group has been systematically adding to its portfolio of advanced protection technologies through a strategy of well-targeted corporate buyouts. With Rheinmetall Chempro GmbH, Rheinmetall Ballistic Protection GmbH and ADS Gesellschaft für aktive Schutzsysteme mbH, the Group has a unique range of sophisticated protection technologies at its disposal – all from a single source.

A growing number of defence contractors and end-customers place their trust in Rheinmetall’s force protection expertise. The Group is currently taking part in performance upgrade programmes for a wide variety of vehicles and vessels in countries around the globe.

At IDEX 2013 Rheinmetall is displaying its comprehensive force protection concept with the aid of a vehicle demonstrator, highlighting systems and components as diverse as add-on armour and spall-liners, vision blocks for transparent armour, mine protection seats, the ROSY smoke/obscurant system and the ADS Active Defence System as well as including body armour products.

Protection in accordance with the “Onion Principle”

Rheinmetall’s comprehensive protection concept involves a multi-layer approach.

Rheinmetall Chempro und Rheinmetall Ballistic Protection Systems are the Group’s experts for passive protection products. Among the passive protection systems on show at IDEX 2013 is the VERHA line of products from Rheinmetall Ballistic Protection Systems GmbH. These include lightweight high-performance materials which can be built into special vehicles, helicopters and naval vessels for protecting passengers and crew.

Rheinmetall Chempro focuses on passive protection systems for wheeled and tracked armoured vehicles against mine blasts, Improvised Explosive Devices (IED's), tandem warheads as well as 120 mm Kinetic Energy warheads. In recent years, Rheinmetall Chempro has equipped more than 40,000 vehicles with highly sophisticated protection systems.

In addition, Rheinmetall offers the Mobile Modular Protection System, or MMS. Reinforcing checkpoints, hardening shelters in combat outposts and forward operating bases and shielding portholes or machine gun positions on board ships are just a few of the potential applications for the highly flexible MMS, which can be quickly deployed in all climate zones in accordance with STANAG 4569, even in difficult terrain.

High-performance "soft kill" solutions offer excellent active protection by making vehicles harder to detect and hit. Here, too, Rheinmetall can supply solutions for ground vehicles as well as fixed-wing aircraft helicopters and ships. Smoke/obscurant systems like "Rosy" make vehicles invisible to the enemy in the event of an ambush, etc. At sea, the Group's Bullfighter and MASS naval countermeasures systems set the global standard. MASS is a decoy-based system that creates phantom targets that reliably divert incoming enemy missiles from their intended objectives. All soft kill systems mentioned above will be on show at IDEX 2013.

Constituting the last line of defence, "hard kill" standoff systems such as Rheinmetall's ADS neutralize incoming projectiles before they reach their target, and thus present an especially innovative and effective solution.

Active Defence System (ADS)

Successfully tested just last year, the Active Defence System (ADS) is the world's most advanced and effective standoff hard kill system for protecting military vehicles in practically every weight class from operational threats. The sensor system detects incoming projectiles such as shaped charge warheads or antitank guided missiles. In a matter of microseconds, the system activates a protective sector and neutralizes the incoming object by means of directed pyrotechnical energy immediately before it reaches its target. Because it operates in a downward direction, ADS is the only high-performance close-quarters protection system that minimizes collateral damage in the immediate vicinity of the vehicle.

The German Bundeswehr began testing ADS intensively at the beginning of 2011. For test purposes, an ADS was integrated into a Fuchs/Fox 1A8 armoured transport vehicle. Here, the German Federal Agency for Defence Technology and Procurement (BWB) was not merely interested in determining the integration potential of the new system, but also in conducting driving performance tests (principally at Defence Technology Detachment 41 in Trier) in order to assess its impact on mobility. The trials were successfully concluded in June 2011.

ADS Gesellschaft für aktive Schutzsysteme mbH, in which Rheinmetall AG of Düsseldorf holds a majority 74% share, with the remainder owned by IBD GmbH of Lohmar, Germany, has already booked its first series order for the new product:

an Asian nation has selected the Active Defence System for protecting its military vehicles. In the meantime, ADS has progressed from the development and testing phase to full-scale production.

International armies are currently showing great interest in ADS technology as well. Experts put the number of military vehicles requiring an active protection system of this type in the tens of thousands worldwide.

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