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Rheinmetall: Optimum effectiveness and comprehensive protection

In surface area, population and economic output, Brazil is the largest country in Latin America. The year after next, this rising regional and global power will play host to the FIFA World Cup; in 2016, the Olympic Games will take place in the shadow of the Sugarloaf. Brazil's excellent armed forces will be responsible for the security of guests from around the world. But even in their daily duties in the fight against crime and protecting the nation's borders and critical infrastructure, serious challenges confront them.

From 10 to 13 April, Rheinmetall will be at the LAAD Security – Public and Corporate Security International Exhibition in Rio de Janeiro, displaying its products for modern armed forces and law enforcement agencies.

Sensors and effectors

Among other products, Rheinmetall's recently created Electro-optics division will be presenting various night observation devices, including GN night vision goggles and the KN 200/250 night vision sight. These make it possible to detect potential threats in the dark and in conditions of poor visibility and adopt appropriate countermeasures. As a result, they are particularly well suited to border control and security operations.

Also on display will be the Group's tried-and-test laser pointers, laser target markers and laser light modules, including the Vario Ray (LLM-VR) and the LLM01, already used by numerous armed forces and security services. Rounding out the division's array of products on show will be the Dismounted Soldier Identification Device/DSID (a friend/foe identification system) as well as the FeLVis fire control unit and its successor, the MultiRay, specifically designed for 40mm low-velocity ammunition.

Apart from the Saphir 9.6 aiming device and a fire control unit, the Vingmate aiming and fire control system features a combined tripod and gun cradle. It is thus suitable for various 40mm automatic grenade launchers such as the MK19, but also for heavy .50 cal. machine guns like the BMG, or even 20mm automatic cannon such as the GAM B01. Along with the Vingmate fire control system, at LAAD Rheinmetall will be displaying the VingSim, its accompanying training device.

Moreover, as a token of its commanding lead in the field of 40mm technology, Rheinmetall will also be showcasing a wide array of 40mm x 46 (low velocity/LV and MV medium velocity) and 40mm x 53 high velocity (HV) cartridges, ranging from practice rounds and non-lethal products to highly effective service ammunition, including 40mm x 46 MV and 40mm x 53 HV time-delay airburst rounds.

Rheinmetall has developed the Cerberus grenade launcher and Hydra automatic grenade launcher specially for firing medium-velocity ammunition. Both feature hydraulic shock absorbers that reduce the recoil to the level of LV ammunition.

In the munitions domain, Rheinmetall is presenting an improved flash-bang stun grenade with bottom-top-vent (BTV) technology. Its new chamber system is designed to enable different decibel levels: 180 dB for military applications, 170 dB for law enforcement operations. For maximum flexibility, the new generation can be fitted either with a conventional flash-bang charge or a newly developed perchlorate-free flash-bang charge. The new perchlorate-free charge has the added advantage of producing less smoke.

Rheinmetall has also enhanced its classic fast-acting SPIRKO smoke grenade. The new ISIS (InfraRed Smoke Instantaneous Spread) red phosphorous smoke/obscurant grenade also provides split-second protection from hostile detection by opponents equipped with optics, night vision or infrared devices.

To enable its customers to detect and engage hostile forces around the clock, Rheinmetall developed its handheld MITHRAS signalling and illumination rockets. They are available for ranges of 300, 600 and 1,000 metres, and come in normal and IR versions.

In the field of radio reconnaissance, Rheinmetall offers the CERES tactical system. It is optimized for concealed ISatPhone Pro detection operations in the vicinity of the target area. Recorded conversations and data traffic can be evaluated in real time. Its extremely compact design and low weight make the system highly portable as well as enabling easy installation in ground vehicles and aerial platforms. As an option, CERES can be teamed with the strategic APOLLO system as a highly mobile dismounted spot beam sensor.

Comprehensive protection

Whether the requirement is protecting friendly forces from optical, optronic or electronic surveillance; supplying individual body armour; or safeguarding critical infrastructure such as airports, nuclear power plants or dams from attack, Rheinmetall offers a full range of system solutions – all from a single source.

Among the passive protection systems on show at LAAD is the VERhA line of products from Rheinmetall Verseydag 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. Visitors can also inspect inserts for ballistic vests made of these materials. In addition, Rheinmetall Chempro will be presenting its 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.

In the realm of active protection, Rheinmetall supplies high-performance “soft kill” solutions for ground vehicles, fixed-wing aircraft, helicopters and ships. Smoke/obscurant protection systems like “Rosy” render vehicles invisible to the enemy if attacked, while Rheinmetall’s MASS naval countermeasures system now sets the standard worldwide. A decoy-based system, MASS produces phantom targets that reliably divert enemy missiles from their intended targets. “Hard kill” systems serve as a last line of defence, engaging incoming projectiles immediately before they hit their target, as with Rheinmetall’s ADS vehicle protection system.

One of Rheinmetall Defence’s special strengths is the integration of new and existing products and systems into a highly effective whole. A prime example of this is Rheinmetall’s dam protection concept.

High-performance sensors such as the unjammable 360° panoramic infrared sensor F.I.R.S.T. and the Cerberus underwater surveillance system constantly monitor the situation above and below the surface and report suspicious occurrences.

The core of the system is a mobile command centre with an autonomous power supply. From its two workstations, threats can be recognized and analysed, and appropriate countermeasures – lethal or non-lethal – initiated.

Apart from smoke/obscurant dispensers and the aforementioned MASS decoy system, effectors include multiple launchers for anti-frogman depth charges.

Thanks to its open architecture, this easy-to-operate, easy-to-maintain system can be readily expanded to include other applications such as access control, perimeter surveillance, explosive and ordnance detection, and even mobile surveillance and manipulator robots.

Rheinmetall, one of the most trusted names in the global defence and security sector, also develops non-lethal systems based on high-power microwave technology, which are effective against roadside bombs, for example, but harmless to humans. These systems can detonate improvised explosive devices from a safe standoff in a controlled operation, or prevent them from being detonated via remote control by interrupting radio or mobile phone communications. Such HPEM systems can be built into vehicles or concealed in conference rooms, etc., to prevent eavesdropping.

The Rheinmetall products on display at LAAD underscore once again the versatility of a globally leading systems supplier and longstanding partner of the world's armed forces and security services.

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