press release

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Rheinmetall: Reliable weapon systems and pyrotechnics for infantry, dismounted troops and special operation forces

Particularly in modern conflicts, ground troops have to be able to respond in a scalable manner to multiple threats worldwide. Infantry forces are also capable to fight in difficult terrain – be it an urban environment or high in the mountains. Despite all the talk of automation and unmanned systems, it is clear that “boots on the ground”, i.e. infantrymen, are as important as ever and will continue to play a decisive role in future military scenarios.

As one of the world’s leading suppliers of defence technology systems, Rheinmetall will be showcasing its products and systems for modern infantry forces during the FIDAE 2014 in Santiago de Chile. These include high sophisticated weapon systems as well as powerful pyrotechnics.

40mm ammunition and fire control units

Rheinmetall’s array of 40mm ammunition – along with quite a few other products made by Germany’s best-known defence contractor – serves as a veritable combat multiplier for the infantry and other dismounted troops. It bridges the gap between hand grenades and mortars. Widely used today, the Group’s 40mm x 46 low-velocity ammunition (LV, velocity: 78 m/s) is available in a wide variety of versions, including HE/fragmentation, shaped charge with fragmentation jacket (HEDP/high explosive dual purpose) as well a number of other service and practice rounds, together with non-lethal payloads such as kinetic impact munitions or irritant.

At present, Rheinmetall is the leading maker of new 40mm x 46 medium-velocity ammunition (MV, velocity: approx. 105 m/s). It can be fired by individual infantrymen equipped with handheld or platform-mounted grenade launchers, attaining an enhanced range of 400 to 800 metres, and enabling rounds with a higher payload, greater lethality, a first shot kill probability and modified fuse technology to be fired. In addition, the Rheinmetall product range includes the 40mm x 46 Long Range (LR; velocity: approx. 100 m/s).

The Group’s new generation of 40mm x 51 MV ammunition has a maximum effective range of 800 metres, doubling the infantryman’s reach and providing a flatter trajectory for those crucial close-in, accurately placed shots. Rheinmetall’s MV ammunition will soon be available in service and practice versions. It is currently undergoing NATO qualification.

Rheinmetall's programmable airburst ammunition constitutes another important new capability, allowing troops to engage targets taking cover in trenches, behind stonewalls, etc.

Its 40mm LV ammunition can be fired from all standard stand-alone and underslung grenade launchers such as the M79 "Blooper", the M320, AG 36, Milkor and Rippel launchers, the M203 and the SCAR EGLM/ Mk13 Mod 0. Rheinmetall is also developing the GL Cerberus grenade launcher (as an underslung or standalone system) and the magazine-loaded AGL Hydra automatic grenade launcher. The latter in particular gives the grenadier enormous firepower, since it can fire single shots and three-round bursts. Moreover, the 40mm rounds pack more punch than competing weapon systems such as the XM25.

Rheinmetall's 40mm x 53 high-velocity ammunition reaches a speed of 240 m/s and has a maximum effective range of 2,200 metres. Here, too, the Group supplies a wide assortment of different cartridges, including newly developed HE and HEDP airburst ammunition which is programmed by an infrared programming unit.

The new multipurpose 40mm HV-HEDP IM ESD (High Velocity-High Explosive Dual Purpose, Insensitive Munition, Electronic Self-Destruct) cartridge is ideal for engaging and defeating lightly armoured and soft targets. It has a newly developed shape charge cone capable of penetrating 80 millimetres of rolled homogeneous armour (RHA) grade K. It is the only 40mm ammunition on the market today with this kind of penetration performance. A unique nose fuse incorporating an electronic self-destruct (ESD) mechanism is optimized for high-sensitivity detonation against both hard and area targets. This system results in a dud rate significantly below that of a typical pyrotechnic or spin decay self-destruct mechanism.

The excellent accuracy of the Rheinmetall 40mm HV-HEDP cartridge is a result of its patented, proprietary propulsion unit, in which the cartridge case (including the propelling components) is fastened to the projectile (which contains the copper liner and the explosive charge). At extreme temperatures, e.g. resulting from a fuel fire, the RWM 40mm IM's improved propulsion system prevents separation of the projectile and propulsion unit. The ammunition stays in the box, with no risk of live ammunition being scattered around the area. The 40mmx53 HEDP IM ESD is equipped with qualified IM explosives. The 40mm HV-HEDP IM ESD grenade is suitable for use in all NATO-standard weapon systems, including the HK GMG, as well as the MK19 and the MK47 grenade launchers.

The Düsseldorf-based Group also offers the Vingmate fire control unit as an ideal way of maximizing the effectiveness of HV ammunition. For instance, Rheinmetall recently won an order to supply the Canadian armed forces with the "Close Area Suppression Weapon System (CASW) C16", consisting of a Heckler & Koch grenade machine gun (GMG) with an integrated Vingmate.

Fly-K and 60 mm mortar ammunition

As indirect fire weapons, mortars play an indispensable role on the modern battlefield, providing light, highly mobile units in particular with organic firepower.

Rheinmetall has developed a quick-mounting digital aiming device for the Fly-K grenade launcher, a system successfully deployed by the French armed forces in Afghanistan. The device measures the incline and elevation angle of the tube, while showing the range of the cartridges on a display. Light, compact, quiet and with a

very low operational signature, this indirect fire weapon can of course also be used without an aiming device to engage targets at distances of up to 650 metres.

Powerful pyrotechnical effectors.

Rheinmetall's Stabilized Illumination Device (SID) is an advanced illumination system designed for camp and security border protection. The SID is available in white light or infrared (IR). Triggered by command wire whenever required, it provides high-power illumination for around 72 seconds, even in strong winds. The unit can be deployed for up to a year in all weather conditions. For advanced illumination effects, two or more SIDs can be connected in series.

The multi-effect, multi-purpose trip flare signal kit M/01 is a versatile trip flare which offers a variety of effects. The same mechanical base element of the trip flare can be used to select the type of illumination, IR flare, whistle and bang, signal flare or smoke. Even after the signal kit is deployed, the effects can be switched, which makes it much more easier to react to changing visibility conditions or the evolving tactical situation. The most important advantage compared to similar devices is that the igniting unit is separated from the pyrotechnical effect charge. The independent ignite makes it safer for the user because the igniting unit can be installed first without the pyrotechnics. After that the pyrotechnical payload can be screwed on to the igniting unit.

In the ordnance field, Rheinmetall is displaying its new generation flash-bang grenade, which features bottom-top venting (BTV) technology. Its new chamber system is designed for different decibel levels: 180 dB for military applications and 170 dB for law enforcement operations. For added flexibility, the new generation can be used either with a conventional flash-bang charge or with a newly developed perchlorate-free one, which also produces less smoke.

Rheinmetall has also improved the performance of the classic Spirco rapid smoke/obscurant grenade. In addition, its new red phosphorous smoke/obscurant grenade, known as ISIS (standing for "Infrared Smoke Instantaneous Spread"), creates a smokescreen in the space of a second that is impenetrable to optical, night vision and infrared devices.

Designed for illumination, signalling, communication as well as marking and screening, the handheld MITHRAS rockets are efficient instruments in battlefield illumination, border control and line of sight breaking to blind the opponent. They feature ranges of 300, 600 and 1,000 metres, and come in normal, IR and smoke versions. In his latest adventure, "Skyfall", James Bond uses a MITHRAS rocket, while in the real world, the British, Czech, Danish, Estonian, Lithuanian, Omani and Thai armed forces have already introduced this innovative modular rocket system as well.

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