press release

RHEINMETALL DEFENCE

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A new heavy machine gun for a new century: The RMG, tailor-made for remote control weapon stations

The heavy machine gun is undergoing a renaissance in Germany, where Rheinmetall engineers are currently working on an innovative new 12.7mm weapon. Known as the Rheinmetall machine gun, or RMG, it is primarily designed for remote control weapon stations. Slated to enter service with the German military in 2014, the RMG will replace the long-serving M2 .50 cal. heavy machine gun, which has been in service since the 1930s. The new weapon will be much more reliable, however, as well as safer to operate and more accurate. It will also have a longer lifespan than the M2 and be better suited for use in remote control weapon stations.

At Eurosatory 2012 Rheinmetall is showing the RMG.50 mounted on a Kongsberg Protector Weapon Station M151.

In the vast majority of cases, the RMG is likely to be mounted on a ground vehicle or helicopter gunship, rather than carried from position to position by a team of infantrymen. Hence the open-bolt, electrically powered external drive design, though it will also possible to operate the weapon manually in the event of a power failure.

Progress in developing the new weapon has so far been swift. Following a brief concept phase and initial presentations to the German military and government procurement authority in 2008, work on the barrel and bolt system began in early 2009, with a prototype of the weapon ready by May. Successful test firing took place shortly after award of a German government development contract in November. Company qualification is already underway. Pending the results of official testing and trials, Germany's new heavy machine gun should be ready for serial production in 2014.

Among the requirements specified by the German procurement authority for a new heavy machine gun is a maximum effective range of 1,500 metres. Moreover, the new weapon has to be able to take out an armoured vehicle (such as an IFV) at a distance of 200 meters. The RMG is superior to the M2 in terms of accuracy and shot dispersal.

In the interest of force protection and avoiding collateral damage during sensitive operations, Rheinmetall has taken great pains to eliminate the possibility of inadvertent firing, even when the weapon is dropped from a height of twelve metres.

The RMG has an integrated fired-round counter, critical for monitoring the weapon throughout its lifecycle. Moreover, when using the machine gun in sniper mode

(optional), it is important to keep track of the number of rounds fired in order to avoid cook-off problems; here the weapon automatically switches to locked-bolt mode. Partly to reduce the risk of jamming, Rheinmetall engineers have developed a novel link system, a single and a dual ammunition feeding system. Thus, apart from the muzzle, the RMG is completely sealed, an important consideration when operating in dusty, sandy environments. Thanks to the central electric drive, the firer will be able to pre-select a rate of fire of up to 600 rounds per minute. Matching the rate of fire to the specifics of the gun mount eliminates the problem of detrimental resonance frequencies. Powered by the electric drive, the gearbox-driven crank moves the bolt forward and back for the ammunition.

This results in pre-selectable burst lengths, making it possible (for example) to fire three rounds at a rate of 251 rounds per minute. As already mentioned, the open bolt system is linked to the round counter. After firing fifty rounds, it will be possible to switch to sniper mode (option) if the gun is not hot. When the gunner pulls the trigger, only the firing pin moves, resulting in a very high degree of accuracy.

Linked to the drive system, the ammunition feeding system is completely mechanical, which will make the weapon much easier to operate and has a higher system safety.

The RMG is equipped with a chromated, heavy-duty barrel built for a high design pressure. Whereas standard 12.7mm ammunition fires at a gas pressure of 3,850 bar, the new machine gun can fire high-performance ammunition higher than 4000 bar. Thus, though the RMG is also designed to fire standard .50 cal. ammunition, advanced types of ammunition currently under development will be better able to exploit its higher maximum operating pressure.

Moreover, at just 32 kg, the RMG will be much lighter than the M2A1, which weighs 38 kg, plus a further 14 kg for the loading, firing, safety and trigger components when configured for a weapon station, all of which are already integrated into the new Rheinmetall machine gun. This means that the RMG really only weighs half as much as the M2A1, making it possible to carry an additional 20 kg of ammunition with no increase in weight, a potentially decisive tactical advantage.

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