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## **Rheinmetall MAN Military Vehicles' HX Family at AAD 2012**

### **Highly mobile – multi mission capable – battle-proven**

No logistics, no tactics: now more than ever, today's fast-moving armies need to be sure that their supplies keep rolling too. Contemporary asymmetric conflicts lack clearly defined front lines, confronting commanders and manufacturers of modern transport, command and multi-mission vehicles with new requirements regarding mobility, robustness, functionality, survivability and lethality. The systems of the HX family, made by Rheinmetall MAN Military Vehicles (RMMV), number among the most cost-effective and operationally proven in their class.

At AAD 2012 held at Waterkloof Air Force Base in Pretoria RMMV is displaying several different configurations from its pure military logistical HX series of vehicles. These include the HX60 (4x4), the HX58 (6x6) and the HX77 (8x8).

### **A match for modern mission scenarios**

All HX vehicles are "military off the shelf" (MOTS) products specially developed for military applications. Their main priority is extreme mobility and reliability even in the harshest terrain.

Unlike many other comparable vehicles, the HX family is made up entirely of off-the-shelf (OTS) components. It combines tried-and-tested components from major commercial vehicle series – such as the low-torsion ladder frame from MAN's civilian TG line of vehicles – with technology specially designed to meet the needs of the military, such as advanced leaf spring suspension, extreme fording capabilities and multi-fuel engines. Right from the start, these trucks are designed not merely for greater durability, payload capacity and on- and off-road mobility, but also to operate at temperatures ranging from -32 to +49° C. Moreover, they can be equipped with protective modules and/or weapon stations for self-defence without major modification.

As a MOTS product family, RMMV's HX vehicles not only feature outstanding mobility, protection and reliability, they also display maximum modularity and interoperability. Systematic, system-oriented thinking is evident throughout.

This results in total ease of use as well as streamlined logistics and maintenance, since many components and assemblies of the vehicle family are centrally produced

and fully interchangeable. In the UK, the net effect has been to reduce a previous logistic vehicle parts inventory stock of 30,000 lines to less than 7,000.

Operation of the vehicles is largely identical. The same applies to maintenance and repair of the vehicles, engines and drive trains. This produces considerable synergy effects when it comes to training crews and mechanics as well as substantially simplifying logistics for the entire fleet of vehicles.

The multi-fuel capability and excellent supply arrangements (all maintenance significant spare parts are NATO codified) are further important features of the HX family, which Germany's Rheinmetall Group – one of the oldest and most trusted names in the global defence industry – is presenting at the AAD exhibition 2012 in Pretoria, along with a wide array of other products and technologies designed for today's expeditionary focussed armed forces.

If required, all of these vehicles can be either equipped with a modular armoured cabin (MAC) or a fully integrated armour cabin to meet the highest STANAG or Mil-Standard specifications with regard to ballistic and mine protection. Installation of the MAC takes only six to eight hours, and can be performed by two trained technicians with the help of a forklift.

#### **The 4x4 class: HX 60**

In the 4x4 class, RMMV's answer is the HX60. The vehicle is powered by a water-cooled 6-cylinder MAN D0836 diesel engine with direct fuel injection and output of 240 kW or 326 hp. If absolutely identical parts and total interoperability are required, the larger D2066 engine from the 6x6 or 8x8 is available as an alternative. Measuring 7.44 metres in length, the standard version of the vehicle is extremely mobile in all types of terrain. Capable of attaining a top speed of more than 90 km/h, it features 60% gradeability and a step climbing capability of half a metre. Furthermore, it can cross 1.20-wide ditches and has a 0.75 metre fording capability, which can be increased to 1.50 metres in accordance with customer requirements. Its total authorized gross vehicle weight is 18 tons, with a military payload of six tons.

Among others Rheinmetall has designed a troop carrier version of this vehicle. Along with a three-man crew, it can seat twenty infantrymen back-to-back, assuring optimum observation and engagement of enemy targets. Furthermore, the vehicle can be equipped with dropsides at the rear and to the sides.

#### **The 6x6 class: HX 58**

The HX 58 is powered by a 6-cylinder MAN D2066 diesel engine with direct fuel injection. With a cubic capacity of 10,518 cm<sup>3</sup>, its output comes to 324 kW (440 hp). Measuring 8.68 metres in length, the vehicle attains top speeds in excess of 90 km/h. Its superb off-road manoeuvrability corresponds to the HX 60. The vehicle's maximum permissible weight is 27.5 tons, with a military payload of nine tons. This makes the HX 58 a universal, highly mobile transport vehicle. Like all RMMV vehicles, the HX 58 is also available with a modular armour cabin (MAC) or

integrated armour cabin (IAC) for maximum Class 3 ballistic protection and Class 3b anti-mine protection in accordance with NATO STANAG 4569.

### **The 8x8 class: HX 77 and HX 81**

The HX 77 has the same MAN D2066 powerpack as the HX 58. The IAC meets NATO STANAG 4569 criteria, providing the crew with excellent protection from ballistic threats, landmines and IEDs. In terms of mobility, it exceeds all other vehicle classes, and is capable of crossing trenches up to 2.40 metres in width.

The vehicle is 10.27 metres long and has a maximum authorized weight of 40 tons, with a military payload of 15 tons. Thanks to its container handling unit (CHU) and/or hook lift system, the HX 77 is the perfect armoured transport vehicle for carrying 20 ft. ISO containers or flats, which today form the backbone of military and civilian logistics.

The HX 81 is powered by an MAN D2868 8-cylinder diesel engine with direct fuel injection. With cubic capacity of 16,160 cm<sup>3</sup>, the engine has a 500 kW (680 hp) output. In terms of off-road mobility, the HX 81 essentially matches the performance of the HX 77. The vehicle is designed to serve either as a semi-trailer or tank transporter; it has a maximum authorized gross train weight of 130 tons. This means that it can in combination with a suitable trailer carry modern main battle tanks across rough terrain.

### **Deployed around the world for decades and battle proven**

The origins of the X family lie in the 1970s, when the German Bundeswehr procured a follow-on generation of trucks. Deployed during the Cold War and steadily perfected, several thousand of these transport and mission-specific vehicles are still in regular service with the German Bundeswehr to this day – a mere fraction of the more than 60,000 X systems now operated by over fifty nations worldwide. All along, the X family has kept pace with the changing requirements of the Bundeswehr, accompanying its transition from territorial defence army to strategic intervention force. In Somalia, the Balkans and Afghanistan, the high-mobility “mil gl” truck category – Bundeswehr shorthand for “military, all terrain” – forms the backbone of German Army tactical logistics.

The military-off-the-shelf concept of the HX family remains as compelling as ever. As such they are the logistical backbone of numerous armies in the world, where they are put to the test in thousands on a daily basis.

In 2007 the British armed forces began receiving the first of over 7,000 HX family vehicles, including 4x4, 6x6 and 8x8 versions. These transport, tanker and recovery vehicles are replacing the old Leyland and Bedford trucks as well as the Foden recovery vehicles, which the SX 45 (8x8) vehicle family is superseding.

Her Majesty's Armed Forces have been deploying HX and SX vehicle families in Afghanistan and previously Iraq since early 2008. The response from all levels has been extremely positive.

During Operation Herrick 9 in February 2009 in Afghanistan, the new Support Vehicle (Recovery) successfully went into action for the first time, recovering a severely damaged Warrior 514 armoured fighting vehicle, towing it 75 kilometres over 18 hours through enemy dominated territory performing very impressively throughout. In the words of one Warrant Officer Class 2: “For the first time in my career I have a protected vehicle with a radio that actually works and electronic countermeasures against remotely detonated improvised explosive devices. We were even able to tow several damaged vehicles in a convoy – at times even two casualties behind every recovery vehicle – 150 km across the desert with no problem.”

The British are equally enthusiastic about the HX77 8x8 Enhanced Pallet Loading System (EPLS), which the UK procured in response to an Urgent Operational Requirement. Unlike the previously deployed Leyland and Foden Demountable Rack Offload & Pickup System (DROPS), this protected vehicle can handle traditional flatracks or lift a 20-foot ISO container weighing up to 15 tons in just minutes thanks to its Container Handling Unit (CHU).

As the commander of a British logistics brigade puts it, “The EPLS represents a significant advance in our capabilities, combining unsurpassed protection for our supply troops with the high mobility that’s vital in modern military operations.”

### **RMMV – outstanding systems and service from a single source**

As one of the world’s leading suppliers of defence technology systems, Rheinmetall supplies the modern military with a comprehensive array of readily available modular products.

At the beginning of 2010 Rheinmetall and MAN Nutzfahrzeuge joined forces to found RMMV. Drawing on their respective core competencies in automotive engineering and military technology, these two long-established companies have created a globally operating supplier of wheeled military vehicles. RMMV produces a complete range of protected and unprotected transport, command and mission-specific vehicles for the world’s armed forces. Moreover, RMMV supplies not only systems, but also service from a single source. From 1<sup>st</sup> to 4<sup>th</sup> level support, everything is possible, including on-site repair and maintenance in-theatre.

In an age when new security challenges can literally arise overnight, this assures maximum flexibility and peace of mind.

At stand 3SE/3SW1 in the Outdoor Space Hangar 3, RMMV vehicles can be experienced live.

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