Out with the old: Polish land systems modernisation

Poland is pressing ahead with a wide-ranging military modernisation, seeking to build the capacity of its recently consolidated defence industrial sector and swiftly replace its ageing land systems amid rising regional tension. Remigiusz Wilk reports

For almost a decade Poland has been in the throes of an ambitious military modernisation programme aimed at replacing its ageing Soviet land systems, which are still used in large numbers.

The Polish Ministry of National Defence (MND) launched a programme to upgrade 128 Leopard 2A4 MBTs (pictured) to a new Leopard 2PL standard, the first prototype of which is to be unveiled this year. (Polish MND)

Backed by the government, Polish manufacturers are undertaking a wide range of research and development (R&D) programmes ranging from small arms, soldier modernisation programmes, light multipurpose vehicles, wheeled reconnaissance and armoured personnel carriers (APCs), and a Universal Modular Tracked Platform (UMPG) to a whole range of new guns, rockets, and missiles.

In September 2013 the Polish government decided to consolidate the entire state-owned industry. Since then the key player in Poland’s land systems production has been Polska Grupa Zbrojeniowa (PGZ), the
Polish Armaments Group. Established in 2014, this holding company comprises more than 60 companies with 17,500 employees and has a USD1.3 billion turnover.

Polish Armaments Group

State industry has been consolidated under PGZ to overcome the main weakness of Polish land systems manufacturers: the lack of new weapon systems based on advanced technology that could be offered for export as well as supply the domestic market.

The main land systems manufacturers that make up PGZ include: APC production plant Rosomak (formerly known as WZM Siemianowice Slaskie); artillery and light tracked land systems manufacturer Huta Stalowa Wola (HSW); the sole Polish military truck manufacturer Jelcz (a subsidiary of HSW); heavy armoured vehicle factory Bumar Labedy; land forces R&D centre OBRUM; military maintenance and production works WZM Poznan; medium and heavy support weapon and lightweight remote-control weapon system manufacturer Tarnow; and opto-electronics equipment manufacturer PCO.

Hunt for the Leopard 2PL

In January 2002 Poland agreed to acquire from Germany 128 Leopard 2A4s manufactured between 1985 and 1987. The tanks were delivered in 2003 and 116 remain in service with the 10th Armoured Cavalry Brigade, based in Swietoszow, while the remaining 12 are used for training.

In November 2013 Poland signed another contract with Germany worth USD253 million for a second batch of 119 Leopard 2 tanks. The order covers 105 Leopard 2A5 and 14 2A4 variants, in addition to 220 associated vehicles, including 18 Bergepanzer 2 armoured recovery vehicles (ARVs). After the delivery last year of 77 Leopard 2A5 and 14 2A4 tanks, all the remaining vehicles are due to arrive by the end of 2015.

Meanwhile, in October 2013 the Polish Ministry of National Defence (MND) launched a tender for upgrading 128 Leopard 2A4 MBTs to a new Leopard 2PL standard. After rejecting an offer from a consortium led by Polish Defence Holding (PHO) for "formal and technical reasons" and limited Polish industrial participation, the MND picked PGZ as its new industry partner for the programme, worth an estimated USD190 million.

The MND intends to develop a completely indigenous capability to service, repair, and overhaul Leopard 2 MBTs to the F6 level. It has accordingly changed the classification of its entire Leopard 2 modernisation programme, which is now subject to "essential security interest" procedures. The military is also rethinking the specifications of the upgrade to the 2PL standard and analysing potentially certifiable Polish-made replacements for original components.

Bergepanzer 2 upgrade

In December 2013 Poland launched a programme to upgrade its 28 Bergepanzer 2 ARVs to a new WZT-BPz(PL) variant.

Poland’s first batch of 10 Bergepanzer 2 (standard) vehicles was delivered in 2002-03 and another 18 are due to be handed over in 2015. All the vehicles are to be modernised in 2015-22.
Upgrading the Bergepanzer 2s is increasingly pressing following Poland’s decision to purchase the Leopard 2A5 MBTs, which are nearly five tonnes heavier than the country's existing Leopard 2A4 MBTs, themselves set to increase in weight with their upgrade.

[Continued in full version...]

**Rosomak and its successor**

In October 2013 Poland signed a USD544.1 million contract with Patria for an additional 307 Rosomak (Patria AMV) 8x8 APCs, bringing the country's inventory to 877 vehicles. Deliveries are scheduled to be completed in 2018-19.

Of the Rosomaks to be built or converted, about 80 will be armed with the Rak 120 mm automatic breech-loading mortar turret manufactured by HSW and 122 will be a new infantry fighting vehicle (IFV) with a remote-controlled turret armed with a 30 mm cannon. The remaining variants will be armed with remote-controlled weapon systems with a 7.62 mm machine gun or the 12.7 mm ZSMU-127 Kobuz machine gun developed by Tarnow.

Poland first signed with Patria in April 2003 for 690 AMVs in 8x8 and 6x6 configurations. The 6x6 variant was then dropped and the total reduced to 570, of which 313 are of the original Polish IFV configuration, equipped with an Oto Melara Hitfist-30P turret armed with a 30 mm ATK Mk 44 Bushmaster II cannon.

Over the last decade Rosomak has introduced more than 600 modifications to the base vehicle. Under licensing and production agreements about 90% of Rosomak APC components are manufactured by Polish companies.
A Rosomak (Patria AMV) 8x8 armoured personnel carrier armed with the TURRA 30 mm turret for the Slovakian Armed Forces. In Slovak service the vehicle will be known as the Scipio. (PGZ)

[Continued in full version...]

**Borsuk**

In December 2013 the Polish Armament Inspectorate launched two separate programmes for next-generation combat vehicles, based on a UMPG.

The UMPG-based vehicles are intended to replace the Polish Land Force's Soviet-era T-72 tanks and BWP-1 IFVs. The future UMPG is planned to be in two versions - light and heavy - with as many common components as possible for a wide range of combat and auxiliary vehicles. The cost of the UMPG programme to 2022 is estimated at PLN8.65 billion.

The BWP-1 replacement, to be called Borsuk (Badger), calls for an amphibious IFV able to transport an infantry squad. However, it is understood the Borsuk, which will include additional appliqué armour, will be a non-swimming vehicle.
Poland is aiming to replace its Soviet era BWP-1 IFVs (pictured) with the Borsuk (Badger). The first production batch of these is expected around 2020. (Polish MND)

Gepard

The withdrawal of at least 350 Polish T-72 tanks is also scheduled to be concluded in 2021. The vehicles were introduced in 1979 and manufactured under licence in Poland between 1981 and 1991.

The programme for the heavy variant of the UMPG - called Gepard (Cheetah) - covers an initial two types: Direct Support Vehicle (DSV) and ARV.

The DSV - for which the Polish armed forces have a requirement of 400 - will be a 35-tonne combat vehicle armed with an auto-loading 120 mm gun. A 105 mm gun is to be an option for exports and the turret would be designed to fit both calibres.

Targeting the DSV requirement, Polish firm OBRUM unveiled its PL-01 Concept at the MSPO defence exhibition in September 2013. A main armament supplier has yet to be selected, but Belgium CMI Defence is seen as a potential source. The programme is in its early stages, however, and some characteristics may change.
Poland has launched a programme to replace its T-72 and BWP-1 vehicles with a new modular tracked vehicle. The PL-01 Concept vehicle (pictured), unveiled at MSPO 2013, has been aimed at the DSV variant of the programme. (Remigiusz Wilk)

ZSSW-30 turret

The Borsuk, some Rosomaks, and the future wheeled IFV will be equipped with a remote-controlled Zdalnie Sterowany System Wiezowy (ZSSW-30) turret.

In development by HSW since 2013, the ZSSW-30 will be armed with a 30 mm ATK Mk 44 Bushmaster II cannon, able to fire programmable air-bursting ammunition and with a dual ammunition-feeding system, a coaxial 7.62 mm ZMT UKM-2000C machine gun, and a dual Spike-LR launcher on the right side of the turret. The ammunition load is 200 cannon rounds and 400 rounds for the machine gun. The turret is also fitted with smoke grenade launchers linked to the SSP-1 Obra self-defence system.

The ZSSW turret has a 'hunter-killer' capability and is equipped with four sighting systems: a stabilised 360° commander’s sight, a gunner's sight, an emergency sight, and a periscope.

Kleszcz

Poland’s search for a GAZ BRDM-2 4x4 amphibious scout car replacement began in 2012 when the MND drafted requirements for a light amphibious reconnaissance vehicle for the Polish Army under the Kleszcz (Tick) programme.
A Bobr 4x4 demonstrator for Poland's future Kleszcz light reconnaissance vehicle requirement. (AMZ-Kutno) 1639546

The current fleet of about 450 BRDM-2 vehicles have been in service since the late 1960s and only 376 are believed operational.

The replacement vehicle will be amphibious, with a 4x4 drive, a three- or four-person crew, and NATO STANAG 4569 Level 3 ballistic protection. It will have a top speed of 90-110 km/h on roads and 40-50 km/h off-road, with a minimum road range of 600-1,000 km and off-road range of 300-500 km.

Ground clearance is set at 400-450 mm, with a slope approach and departure angle of 40-45°. The vehicle should offer sustained climb on a 60% slope, or 30% slide slope, and be able to climb 0.4 m steps. The vehicle will be equipped with a remote-controlled weapon station with 360° gun traverse.

[Continued in full version…]

Polish-German APC

In May PGZ and Germany's Rheinmetall MAN Military Vehicles (RMMV), part of Rheinmetall Defence, signed an agreement to jointly develop an amphibious wheeled APC.

Under the accord PGZ and RMMV are planning to design and manufacture prototypes and start serial production in the next three to four years. Poland will be the sole manufacturer of the vehicle and its future derivatives, which will be offered jointly by the partners on the international market.

[Continued in full version…]
Artillery

Poland is planning a new generation of artillery systems to replace its obsolete non-NATO-calibre 122 mm and 152 mm self-propelled howitzers (SPHs), which are still used in numbers by the Land Forces.

HSW is responsible for four important programmes: the 120 mm Rak tracked and wheeled self-propelled mortar (SPM), the 155 mm Kryl wheeled SPH, the 155 mm Krab tracked SPH, and the WR-300 Homar wheeled multiple rocket launcher (MRL).

The HSW-developed Rak mortar system consists of an auto-loading 120 mm/25-calibre mortar with a 20-round magazine installed in an unmanned turret. The turret can be integrated with tracked or wheeled chassis, while an additional 40 rounds can be stored in the vehicle's hull.

The Polish Land Forces are purchasing 96 Rak mortars integrated with wheeled Rosomak 8x8 chassis (plus three for training purposes) for eight mortar companies, each with three platoons, and also mortars on tracked platforms for mechanised battalions. The first eight serial-production mortars, installed on the wheeled Rosomak (Patria AMV) 8x8 hull, will be delivered by late 2018.

A Marder IFV armed with a 120 mm Rak automatic mortar turret was displayed at MSPO 2013. (Remigiusz Wilk)

The Rak mortar is also being developed for export clients. At MSPO 2013 HSW unveiled its Rak 120 mm mortar system mounted on a Rheinmetall Defence Marder 1A3 IFV hull.

The Bundeswehr is starting to withdraw the Marder from service, replacing it with the Puma IFV. Some of these Marder vehicles may be refurbished, modernised, and sold by Rheinmetall to international customers. Chile recently bought 280 vehicles and Indonesia 50.

In 2014 HSW unveiled the first prototype of its Kryl 155 mm self-propelled artillery (SPA) system, mounted on a 6x6 Jelcz 663.32 truck.
HSW unveiled its Kryl 6x6 155 mm SPA system (left) and a mock-up of its new ZSSW unmanned turret for the Rosomak (AMV) 8x8 IFV at MSPO 2014 in Kielce. (Remigiusz Wilk)

The main armament is a lightweight variant of the Elbit Systems/Soltam 155 mm ATMOS 2000 gun system, modified to fit Polish requirements. HSW co-operated with Elbit to shorten the project’s R&D stage.

The 155 mm/52-calibre howitzer has an intensive rate of fire of six rounds per minute (rds/min) or a sustained rate of fire of two rds/min. The SPA can store 18 Joint Ballistics Memorandum of Understanding (JBMoU)-compliant rounds and has a 5-40 km firing range with firing angles of 0-70° in elevation and 50° (25° left/right) in azimuth.

The Kryl SPA’s combat weight with crew (of five), ammunition, and fuel is set at 23 tonnes, but can be reduced to under 19 tonnes for transport in a Lockheed Martin C-130 Hercules aircraft.

The Kryl development programme is planned to be completed by December 2015, after which the SPA will undergo tests and trials. Poland's current draft requirement is to purchase 72 Kryls to equip three batteries of 24 SPAs.

Poland’s long-running Krab SPA programme dates back to 1999, when the Polish MND selected the British VSEL/BAE Systems autonomous AS90 turret armed with a 155 mm/52 L31A1 ERO cannon for the project. The first two prototypes, based on the Polish tracked seven-wheel UPG-NG chassis manufactured by Bumar Labedy and powered by an 850 hp PZL Wola S-12U engine, were completed in 2000-03 with British-built turrets.

In 12 May 2008 the MND signed a contract with HSW for a single battery of eight Krab SPAs, which was expanded to 24 units in 2012. In October 2012 an initial Krab battery with eight SPAs was delivered to the 11 Artillery Regiment in Wegorzewo. [Continued in full version...]

© Copyright IHS and its affiliated and subsidiary companies, all rights reserved. All trademarks belong to IHS and its affiliated and subsidiary companies, all rights reserved.
Drive Unit Centre

In October 2013 Poland announced the establishment in Poznan of a new centre for manufacturing and upgrading military engines, based at Wojskowe Zaklady Motoryzacyjne (Military Automotive Works/WZM).

The new Drive Unit Centre (Centrum Zespolow Napedowych/CZN) is a joint effort between the MND, WZM, and Poland's Industrial Development Agency.

Once operational, the CZN will be responsible for manufacturing, assembling, upgrading, maintaining, and testing all power sources used by new Polish land vehicles. The first Polish-made power units are expected in 2016. The facility will be equipped with a new engine test bench for power units up to 1,000 kW.

Germany's MTU Friedrichshafen was recommended by the Polish armed forces and selected as a strategic partner. In September 2014 MTU and WZM signed an agreement to create an authorised military engine service centre.

Light vehicles

Jelcz, a subsidiary of HSW and part of PGZ, is the main supplier of Poland's 4x4, 6x6, and 8x8 military trucks.

In November 2013 the Polish Armament Inspectorate ordered 910 Jelcz 442.32 4x4 military trucks in three cab configurations. The order includes a logistic package comprising repair and overhaul kits, portable diagnostic sets, and a training package for the Polish Land Forces' Logistic Training Centre in Grudziadz.

The Jelcz 442.32 4x4 truck made its debut at MSPO 2013. (Jelcz-Komponenty)

The Jelcz 442.32 is powered by a 326 hp MTU 6R 106 TD21 engine with a 9+1 manual ZF transmission. The vehicle is 7.98 m long, 2.25 m wide and weighs 15.6 tons. It will be the first Jelcz truck powered by a German-designed engine, which is planned to be manufactured at the CZN.

Poland is also seeking a wide range of light multipurpose 4x4 vehicles to replace its fleet of ageing Honkers and remaining UAZ469 jeeps. In July the Polish Land Forces opened its Mustang tender to procure 882 4x4 vehicles. Poland requires 841 soft-skin vehicles and 41 armoured versions with a maximum gross vehicle weight (GVW) of 3,500 kg to be delivered in the 2016-22 timeframe.
To replace its fleet of ageing Honkers and UAZ469 jeeps (pictured), the Polish Land Forces opened the Mustang tender to procure 882 new 4x4 vehicles. (Polish MND)

Other specialised vehicle programmes are also under way. In April 2015 Poland announced a tender for 118 light armoured long-range reconnaissance vehicles (LRRVs) under the Zmija (Viper) programme. The new vehicles must be air-droppable and air-transportable inside a Polish Air Force Lockheed Martin C-130E Hercules transport aircraft as well as suited for carrying as an underslung load beneath a helicopter. The GVW of the vehicles should not exceed 1,700 kg with a payload of 900 kg. They will be manned by a three-person crew and should be able to operate for up to seven days without resupply.

[Continued in full version...]

Remigiusz Wilk is a JDW correspondent, based in Warsaw

Copyright © IHS Global Limited, 2015