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RESETTING DEFENCE

Modernization of the Hungarian Defence Forces and reestablishing the national defence and aerospace industry.

A VÉDELEM HELYREÁLLÍTÁSA

A Magyar Honvédség korszerűsítése és a honvédelmi és repülőipar helyreállítása

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Abstract

With the announcements made through 2020 and 2021, the reestablishment of the Hungarian defence and aerospace industry entered a qualitatively new phase. Soon after the opening of the small arms production factory of Arzenal Zrt. at Kiskunfélegyháza, the groundwork was laid for the in-country manufacturing and development of complex combat vehicle systems, munitions, as well as the manufacturing of critical aerospace components. The learning curve from relatively simple to highly complex projects is set, and admittedly it is a very steep one.

Keyword: defence industry, infantry fighting vehicle, wheeled military vehicle, critical dynamic components, medium- and large caliber ammunition and explosives production

Absztrakt

A 2020-ban és 2021-ben tett bejelentésekkel a magyar védelmi és repülőgépipar újraalapítása minőségileg új fázisába érkezett. Röviddel az Arzenál Zrt. kiskunfélegyházi kézfegyvergyártó üzemének megnyitását követően megteremtették az összetett harcjármű-rendszerek

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gyártásának és fejlesztésének, a lőszergyártásnak, valamint a kritikus repülőgépipari alkatrészek gyártásának hazai bázisát. Kétségtelenül meredek a tanulási görbe, ami a viszonylag egyszerű projektektől a nagyon összetettekig vezet.

Kulcsszavak: védelmi ipar, gyalogsági harcjármű, kerekes katonai célú jármű, repülésbiztonság-kritikus dinamikus komponensek, közepes- és nagy kaliberű löszerek, robbanóanyagok gyártása

Introduction

Following the change of the political system during the '90s the capability of the Hungarian defence industry severely deteriorated. The drastic cut of the manpower strength and unfavourable developments led to general and wide scale loss of capacity and capability. While the Hungarian defence industry employed 30 thousand at the end of the '80s, this number fell to a mere 1900 following the change of the system. By the middle of the 2000s the sector's activity dwindled to a level of being partially able to service the maintenance, operating and minimum NATO-interoperability needs of a much smaller Defence Forces. Local military uniform raw material production ceased, just like the manufacturing and development of small calibre ammunition, mortars, military grade explosives. The institutions of defence R&D were withered.

Several different weapon systems (for example self-propelled artillery, infantry fighting vehicles) were withdrawn from service, and the focus of development turned to the improvement of capabilities for peace missions. During this period, Soviet-origin military technology remained dominant among the equipment of the Defence Forces, with just a few significant new acquisitions (Mistral VSHORAD, Gripen combat aircraft, Kongsberg radio systems, all terrain trucks).

War in the Ukraine breaking out in 2014 and the deteriorating security environment made several European states to increase their defence budgets as well as to modernize their armies. In relation with this, Hungary has also started the Zrínyi 2026 defence and force development program (HHP), the conclusion of which beyond the original target year can now be projected to 2030. The program puts a heavy emphasis on the creation of import-independent local capabilities; therefore, it sees defence industry as sector.

The goal of this publication is to present the results in the field of defence industry up to this point in time.

1. Localization of land forces equipment manufacturing

The Western city of Zalaegerszeg hosts the joint venture of the Hungarian State with Rheinmetall AG to manufacture Lynx infantry fighting vehicles, a brand new, innovative, modular design. The Hungarian Defence Forces (HDF) is committed to procure 209 examples, of which only the first 46 is being manufactured in Germany, while the rest will be built in Hungary. The foundation stone-laying ceremony for the plant was held in December, and construction is advancing according to plan. Production is set to start in 2022. Illustrating this complex approach, I would like to highlight that this facility will not only encompass manufacturing, but research and development as well. To facilitate this a full-fledged off-road testing environment is being built next to the manufacturing hall.



Figure 1: (L to R) Commissioner Maróth, CEO of Rheinmetall Armin Papperger, Minister of Innovation and Technology László Palkovics with a Lynx infantry fighting vehicle.

Photo: Zord Gábor László/Department of Defence Development

It is also important to mention that these steps are of course not made in a vacuum. Rather building upon earlier achievements, keeping in mind the goal of economic diversification achieved through high added value sectors. This is in accordance with the Hungarian government's strategic guidelines.

Therefore, Zalaegerszeg combat vehicle site is right next to Zala-ZONE, a huge government-initiated project to provide a modern testing environment for the automotive industry, which is a principal contributor to Hungarian GDP.

At the same time, Kaposvár, a city in the Southwest with a military logistical presence is to become the center of efforts in the field of wheeled military vehicles. It is symbolized by Gidrán, the Hungarian version of the Nurol Makina Ejdar Yalcin 4x4 armored vehicle. With the HDF committed to procure a significant quantity of these vehicles, the momentum is assured to successfully upstart these industrial activities.



Figure 2: The first Gibrán 4x4 armoured vehicles entered Hungarian service in the beginning of 2021.

Photo: Zord Gábor László/Department of Defence Development

Accordingly, together with Rheinmetall, plans are being drawn for the joint development of a new 8x8 combat vehicle platform, to be used

mainly as a replacement for the earlier generation of obsolete armored personnel carriers BTR-80s. Here, implementation of breakthrough technologies of the automotive industry, including new power solutions and automation is going to be key.

2. Helicopter parts manufacturing

Regarding Aerospace, the construction of the facility that will host Airbus Helicopters Hungary (also a joint venture with the Hungarian state) in the Eastern Hungarian city of Gyula is in an advanced stage. A topping out ceremony was held there in May as the reinforced concrete structure of the manufacturing facility reached its eventual height. In 2022, production of critical dynamic components for the full range of the European manufacturer's rotary wing portfolio will commence here.



Figure 3: The topping out ceremony of Airbus Helicopters Hungary in Gyula

Photo: Department of Defence Development

Again, by selecting a global industry leader for partnership a truly valuable place in the aerospace sector is being sought, reflecting a long term commitment by the Hungarian state. Also, the case of Gyula reflects the necessary step-by-step, careful approach, as this is a new

industrial sector for the country. Starting out with precision parts manufacturing fits well into this.

Concurrently, the local specialized training infrastructure is being developed. It is an investment in tomorrow's workforce, recognizing the fact that providing quality, well trained human resource is the most critical, time consuming part of the whole effort.



Figure 4: The construction site of Airbus Helicopters Hungary plant at Gyula is being overflowed by a Hungarian Defence Forces H145M helicopter

Photo: Department of Defence Development

Moving forward and gaining experience, it is possible to aim for more complex, sophisticated undertakings as well. With the construction of Airbus Helicopters Hungary ongoing and the optimistic outlook it gives, the government can have the confidence to participate in multinational projects as well in a meaningful way.

With this in mind was it possible during the topping out ceremony to announce the intention to join leading helicopter building nations in the development program of the future European military rotorcraft.



*Figure 5: A Hungarian H145M helicopter is being built.
Photo: Airbus Helicopters*

3. Ammunition- and explosives manufacturing

The first steps are also being made to reestablish medium- and large caliber ammunition and explosives production in Hungary which is a strategic capability. These 30, 120 and 155 millimeter projectiles form the ammunition baseline for the new Hungarian arsenal of heavy combat vehicles. Beside the above mentioned Lynx IFV, this includes the Leopard 2 Main Battle Tank of which 56 examples (12 refurbished A4 and 44 new built A7+) are acquired, and the PzH 2000 self-propelled howitzer, 24 of which will be added to the HDF. It is being done not just for Hungary, but also for Europe and for the Euro-Atlantic community in general, as increasing industrial redundancy within the alliance in this critical field is becoming more and more important. This is true to the parallel project of establishing RDX explosives production capabilities locally as well.

Regarding small calibers, it is a goal to re-establish ammunition production capabilities in Hungary. There were valuable assets in this field, but now it needs investments in order to create competitive products.

More solutions and more players are on the table now, but this field is at least as important as the other mentioned topics. Also there should be awareness towards discussions about new calibers. The ability to act rapidly in case a decision on a new standard is made will be of paramount importance.

4. Weapon-, mortar manufacturing, air defence equipment, radar acquisition and integration

Beside these heavy-weight, center of gravity projects, other partnerships were announced in several equipment categories, like sniper rifles, anti-tank weapons, mortars, remote-control weapon stations, reactive armour, radar integration. Just as another good example on the thinking behind the development, I'd like to mention the joint development of mobile short range air defence systems (SHORAD). This program aims to fill a capability gap in the West, which opened up when most of these systems were withdrawn following the Cold War, while new types of threats like drones, precision guided projectiles emerged besides the conventional target set of fixed and rotary wing aircraft. To successfully address these requirements, a high degree of innovation is needed. Integration of different new sensors, gun and missile effectors while at the same time constraining size and weight to preserve the ability to move together with the ground forces in need of protection. The confidence for starting such a program is gained from the fact that local vehicle platform production capabilities emerge. Also, there is a clear market potential, and multinational initiatives where the importance one can achieve is a function of valid industrial capabilities.



*Figure 6: Gun and missile equipped Short Range Air Defence System turret concept.
Photo: Rheinmetall*

5. Logistical challenges

The acquisition of new equipment poses a significant challenge to the logistics personnel destined to service them. Mastering new technologies, operating modern automatic testing equipment makes language skills and continuous learning and training an absolute necessity. This equipment represents the technology of the 21. century, and organizing their logistic support requires a fundamental change in attitude compared to the earlier Soviet sourced weapons systems. It is time to implement in practice the tools and methods of life-cycle management, and replace the previous segregated approach with complex logistic support. For this, well trained personnel and effective organizational structure is needed. Only by providing these conditions it is possible to assure the effective employment of the equipment procured.

The model however goes beyond these individual projects. Together with government partners, mainly in partnership with the Ministry of Innovation and Technology, a Defence Industrial Strategy was written. It includes a definitive vision, a proposed overarching structure for the sector, and a sustainable business case. The key is to integrate these new enterprises into the global defence industrial supply chain, and consolidate their position on the market. Also the institutional framework for an efficient innovation structure, able to incubate startups and support talent is being established. So far, a cumulative investment of 220Bn HUF is secured, with a prospect of 1350 jobs in the coming few years. By 2030, the aim to increase its value to about 500Bn HUF and offering further job opportunities.

Summary

Under the framework of the defence and force development program (HHP) acquisitions unseen for the past 30 years have happened. Obsolete Soviet-Russian military technology will be replaced virtually in the blink of an eye with modern, world leading equipment. However, the methods used now in acquisition were not characteristic regarding military equipment in the past decades. Previously only simple acquisitions or offset agreements took place, the benefits of which varied severely, but in general has not involved the defence industry.

These days the providers of military equipment have learned that it is impossible to sell any weapons systems to Hungary without investing into the local defence industry. This can take place in several ways. It can be the creation of a factory or joint venture, or the transfer of technology. The goal is to create the conditions for the manufacturing of equipment, therefore make it possible for the country to have capabilities independent of foreign suppliers, to guarantee the maintenance of the defence forces even if for some reason the supply chain breaks down.

The modernization of the defence forces continues. The goal is to make the Hungarian Defence Forces the army with the most up to date equipment within the region, which provides adequate deterrence against any possible aggressor.