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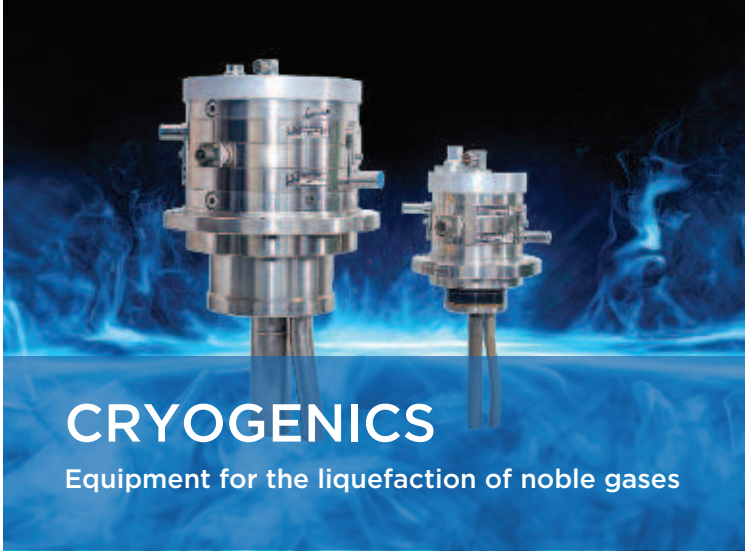

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Dear readers,

As we already regarded the third issue of this years magazine focuses on Air Force of the Army of the Czech Republic and presentation of industry at NATO days 21st–22nd September in Ostrava and Future Forces Forum 16th–18th October in Prague.

We bring a list of interesting articles and interviews with significant representatives of state administration and department of the Ministry of Defense of Czech Republic. For example, with Martin Dvořák, Minister for European Affairs and the Commander of the Air Force of the Army of the Czech Republic General Petr Čepelka. As always REVIEW brings presentations and advertisements from Czech security and defence industry, which is the main purpose of our magazine – to create a connection between the state and appointed industry and make the communication within this community easier.

As I already mentioned the two most significant events of this year, I could not forget to mention very pleasant and successful event CIHELNA 2024 in Králíky, which celebrated its quarter of century since foundation.

For MS Line publishing house is the fact, that the majority of Czech organizations of security and defence industry is using our REVIEW for presentations of their projects extremely important. In the latest issues we focused mostly on presenting medium and small sized companies and we would like to continue in this trend. The membership base of the AOBP of the Czech Republic, which grew by more than 30 new members and by that pushing the total of connected organizations over 180 companies made it clear that they are ready to act and full of determination at the 28th General meeting this May.

I feel like those words are enough for the opening. I believe that you will find quiet a lot of new information at the pages of REVIEW and I am looking forward to personally meet you at the connected stall at Futures Forces Forum in October, that will be shared by AOBP of the Czech Republic, Czech Export Bank and MS Line publishing house, so feel free to stop by.

Dipl. Eng. Miloš Soukup
Editor-in-Chief

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ON THE CURRENT TOPIC WITH MINISTER DVOŘÁK

The last time Minister Martin Dvořák gave us an interview was in his capacity as the Deputy Minister of Foreign Affairs. Before this position, he held many important positions in different countries such as Kosovo, Iraq, Ukraine, the USA – Washington, and later New York, and most recently Kuwait. He won many awards and medals, including the Golden Jánský Plaque for voluntary blood donors.

In May 2023, he became the Minister for European Affairs in the Government of Petr Fiala. So far, only the second Government of Mirek Topolánek and the Government of Jan Fischer had a Minister for European Affairs. Other governments stepped back from thisand the position was not reinstated until 2022. Martin Dvořák is the Minister entrusted with the management of this department at the Office of the Government.

Dear Minister, I am glad that you once again accepted the offer to be interviewed for our magazine, and I would like to ask you - as a long-term member of our Editorial Board - a few questions. This Office has been in operation since 2009, and in May 2023 you replaced Mikuláš Bek, and since then you have been a sitting Minister without portfolio. In 2010, Karel Schwarzenberg declared that this position was useless… however, whenever I turn on the TV, Minister Dvořák is there and something is being resolved. What can you add to that?

I'm trying to make this position useful. When I took this office, we had a conversation with the Prime Minister, and he told me that he considered it important and significant that the Czech Republic has a Minister for European Affairs even after the end of our Presidency in the Council of the EU. It is proof that, as Czechs, we perceive the importance of the EU and also that, simply, work in EU structures is a different discipline than traditional diplomacy. Because we are just inside, we are part of that body and within the framework and structures of which we negotiate a common course of action, or defend what does not suit us. So today, I represent the Czech Republic at the meetings of the General Affairs Council (GAC). This is the place where cross-cutting issues are being discussed, issues that cannot be classified under other specialist-specific areas. This includes, for example, the future of Europe, i.e. the possibilities of enlargement and related potential changes in decision-making processes and EU institutions, setting strategic goals for the next period, changes in the way of financing individual areas, compliance with the principles of the rule of law and democracy... There are quite enough issues. In addition, I also chair the Committee for the EU, which coordinates and harmonizes our government's standpoints on individual proposals from the EU every week and, if necessary, resolves contradictions between individual departments. I am also the Vice-chairman of the EU Government Committee, which then sanctifies the agreed conclusions, or resolves any contradictions. This year, I also coordinated events to celebrate the 20th anniversary of our accession into the EU, I participated in several events not only on the anniversary itself but also on other topics, especially the adoption of the Euro. All of this is accompanied by a series of meetings, debates, and consultations with foreign partners, most often Ministers from other countries, either member countries or those

seeking to join. And I also try not to neglect communication, which is said to be done poorly by our Government... I visit media, I am very active on social networks, and debate with people.

More than half a year ago, you stated that Europe should have the ambition to reform itself. For the Czech Republic, membership is not just a money-box, but an opportunity. An opportunity for what?

Europe is very likely to face changes, and our task is to make them changes for the better. which means reducingbureaucracy and regulations, to increase the efficiency and speed of decision-making processes not only within crisis situations but also in general. It is necessary to focus more on what real effect this or that regulation or directive will have and what a negative impact, on the contrary, it may have on the EU or the member states and their citizens. The goal of those reforms must be, in particular, higher competitiveness of the EU, higher resistance to attacks from the outside and to all crises, and a lower degree of dependence on imports from countries that do not adhere to the principles of democracy very much. And there are certainly plenty of opportunities for the Czech Republic. We have barrier-free access to a market with half a billion inhabitants, the opportunity to travel, do business or study in a large part of Europe, and to cooperate with scientific teams from other countries on the development of new technologies. We have allies with whom we have a better chance to defend against the expansionism of Russia or China and, on the contrary, to be part of a strong and resilient unit that will be an important global player in politics and economics. But it won't happen on its own, without our commitment and effort…

What is your opinion on admitting new members to the EU?

The issue of enlargement was not the most attractive topic for many EU countries before the beginning of Russian aggression against Ukraine. They may not have overcome some disillusionment with the way some new members behaved and showed themselves in the EU, these seemed to be only interested in the income and benefits of their membership but did not pay much attention to their duties and obligations or mutual solidarity. After the start of the aggression against Ukraine, however, the geopolitical importance of enlargement, both in the Balkans and in the eastern part of Europe, increased rapidly. The whole complex process has suddenly started and accelerated, but this, in no way, means that we should, under geopolitical pressures, compromise the necessary requirements and criteria that aspiring countries must meet before joining this elite club. Our ambition is to help them with their "homework"; we offer consultations, send experts and support. We cannot afford to leave the Western Balkans or Ukraine and Moldova at the mercy of chaos and Russian influence.

And what about Ukraine? Will it be able to meet the accession conditions set by the European Commission?

Today and every day on the battlefields, Ukraine proves its will to fight for freedom to belong to the world of Western-style democracies. Unfortunately, this does not mean that it also meets the economic conditions. Being at war, the country is partially disrupted, damaged, and full of internal and external problems and challenges. It will take a very long time to correct these problems. In my opinion, on its way to the EU, Ukraine needs our help now, so, long before it becomes a full-fledged member.

The next question is directed to your statement that you would support the repeal of the right of veto due to the Hungarian obstructions. After half a year, what is your opinion on this problem?

This question is very delicate and the solution will be sought for a long time. On the one hand, we have a fresh experience with what you mentioned, the experience with

the abuse of the right of veto to blackmail other member countries, which are then being restricted in their right to protect their national interests. In addition, the process of finding unanimous agreement is often very lengthy and not very effective even without such obstructionist abuse, which turns out to be a handicap in crisis situations (natural disasters, wars, pandemics...). On the other hand, there is a natural and understandable fear among smaller countries that they will be outvoted on fundamental issues without the possibility of protecting their national interests. In my opinion, we should not resist the debate on how to solve these two mutually contradictory standpoints. However, I am aware that the current government or a sufficiently large part of it does not want to have such a debate yet.

Dear Minister, in previous years, but also at present, you had the opportunity to cooperate with Mr. Tomáš Kopečný. How do you assess this cooperation?

I consider this to be another very positive proof of how the Czech Republic is gradually emancipating itself in Europe and throughout the world, becoming a self-confident and interesting player and partner for much larger countries. I greatly appreciate the role of our "coordinator" Tomáš Kopečný, with whom I had the opportunity to work together when we were both deputy ministers, and even then it was obvious that he knew his work very well. I am therefore not at all surprised that he adapted so quickly to his new role and found his feet in this large and globally significant event with ease. It is logical that the role of the individual actors is not talked about much for rational security reasons, so I can only guess at his actual role, but I would guess that he definitely has a big part in it. I wish him the best of luck and success.

Dear Minister, thank you for the interview and I wish you much success in your difficult work.

Author: Eva Soukupová
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THE CZECH AIR FORCE IS GOING THROUGH STRATEGIC CHANGES

The War in Ukraine and also other "explosive conflicts" have put Europe in a position to initiate a significant effort to self-defence. We can say that there has not been a similar situation smouldering with a big explosion since the World War Two. If we monitor the war events not only in Ukraine, then we must clearly come to the conclusion that the current defence capability of the Czech Republic, as well as NATO, primarily consists in the readiness of the Air Force of the Czech Armed Forces and the entire Alliance. This is also the reason why we asked MG Petr Čepelka, the Commander of the Air Force of the Czech Armed Forces, for an interview.

General, in two months (November 1st) it will be two years since your appointment to the position of the Commander of the Czech Air Force. Before your appointment, you held the position of the Director of the Force Development section of the Ministry of Defence of the Czech Republic. How do you use the experience from the previous post?

I worked in the Force Development Division of the Ministry of Defence of the Czech Republic (MoD FDD), which is in charge of conceptual activities and professional and methodical management of the building and development of forces, i. e. the Air Force, specifically deals with the concept of building and development of Tactical, Helicopter and Transport air forces, Air Defence Missile Forces, Radar Service, Air Traffic Control Services, Air Radionavigation Services and Aviation Medical Services in the Czech Armed Forces. MoD FDD also represents the Ministry of Defence of the Czech Republic in the NAPMO BoD (NATO Airborne Early Warning & Control Program Management Organization Board of Directors) and the NAPMO OPL (NATO Airborne Early Warning & Control Program Management Organization Operations, Plans and Logistics) committee of the NAEW&C program (NATO Airborne Early Warning & Control). It establishes principles and standards for combat preparation, combat use and training of Air Force units, installations and formations, including reserves with an emphasis on active reserves, and represents the Ministry of Defence of the Czech Republic in working groups, committees, and subcommittees of NATO and the European Union in his area of competence.

All these tasks are being transformed at the tactical level to be implemented. The experience gained in elaborating concepts for the building and development of Air Forces can be directly applied at the level of tactical training and unit operations. This includes conversion of strategic objectives and normative requirements into tactical planning and conducting operations, ensuring that tactical activities are aligned with the Czech Armed Forces' strategic intent and long-term goals.

The experience of managing training and combat preparation at a higher level now allows me to optimize the training and combat preparation of tactical units and better adapt them to the actual requirements and needsof the modern battlefield.

Working within NAPMO and cooperation with NATO and the EU gave me a greater insight into the latest trends and technologies that can be integrated at the tactical level while increasing interoperability. This includes, in particular, the introduction of modern combat management systems, weapon systems, and technologies into the armament and equipment of forces so that they can effectively cooperate with international partners in joint operations.

The MoD FDD is also involved in the management of programs that include crisis planning and logistics. These experiences can be

used at the tactical level when planning and executing operations in a dynamic and rapidly changing environment, where it is crucial to respond effectively to unexpected situations, such as within the extremely topical AgileCombat Employment (ACE) concept.

Last but not least, the emphasis on training and engagement of the active reserves can be applied at the tactical level to better integrate reserve forces into regular operations. This increases the overall readiness and flexibility of forces.

Simply, as the Commander of the Czech Air Force, I now use the insight that service at the strategic level gave me, as well as the knowledge of the processes that these tasks generate for the Air Force Command, to fulfil my tasks.

When you took office, you spoke about the outdated military equipment of the Air Force, which must be intensively replaced by new sophisticated weapon systems. How are you doing with this task so far?

In recent years, the Czech Air Force has taken significant modernization steps, and outdated military equipment is becoming a thing of the past for the Czech Air Force. Although there is still a need to use equipment of the older generation to perform some specific tasks, its share is rapidly decreasing, and these older systems are progressively replaced by modern means that meet the requirements of current combat operations and technological standards of the 21st century. One of the key modernization steps was the replacement of outdated radars with new systems that provide much better coverage and accuracy. Another important step is the change of the helicopter fleet, which included the acquisition of new machines with better flight characteristics, higher reliability and modern weapon systems. In the future, the purchase of new fifth-generation combat aircraft is also expected, which represent the top of current aviation technology. The new aircraft offer not only significantly higher-combat capabilities, but also advanced technologies in the field of stealth, communication, sensors and electronic warfare. In addition, further investments in new aviation technology are being considered, which-would further increase the capabilities of the Czech Air Force.

Generally, we can say that the process of modernization of the Air Force is in full swing, and within a few years the topic of outdated equipment will cease to be topical and the Czech Air Force will be included among the modern air forces capable of facing the challenges of the current and future battlefield. The transition to modern technologies is crucial not only for ensuring the defence capability of the Czech Republic but also for cooperation with allies within NATO, where it is necessary to keep up with the most modern standards.

Where do you see the main current problems?

Today, the Czech Air Force, across a wide spectrum of its individual units, faces problems that can be broadly divided into the area of human resources, the condition of the technology and technical equipment, as well as real estate infrastructure. The origin of the current problems must be sought in the past two decades, which were characterized by the postponement of defence spending, which ultimately led to the disruption of the concept of Air Force development by delaying the acquisitions and modernization of the required aviation technology. A welcome and very significant positive change is the successful effort of the management of the Ministry of Defence to speed up the replacement of weapon systems – in our case, aviation equipment, radar equipment and air

defence equipment. Unfortunately, despite the increase in the MoD budget to the legally guaranteed 2 % of GDP, it is not possible to ensure greater flexibility in the implementation of property purchases and ensure repairs of all types of equipment or real estate infrastructure due to the absence of amendments to laws, regulations and mandatory procedures.

Currently, I see the biggest challenges in the area of human resources, or rather their quantity. We need to convince more people that national security is everyone's business, and that serving in the modern Armed Forces, especially the Air Force, is something you can enjoy and be proud of. The collective of people passionate about aviation, the technology used and the opportunities for self-development offered are an opportunity that can not be found anywhere else. The lack of people stems primarily from the fact that we demand the same category of people as the civilian sector. These are mainly people educated in the field of information technologies, and graduates of industrial fields,whether engineering or electrical. And in the case of the Czech Armed Forces, the factors of physical fitness, health, and mental resistance are also crucial.

At the same time, however, we must not forget to retain the personnel who are already serving in the Czech Armed Forces. By cancelling social benefits, the armed forces lose its ability to retain trained specialists in the long term. The bureaucratic burden, which can not adequately and flexibly respond to the needs of the dynamically developing security environment and the needs arising from it, is another obstacle.

However, there are also other causes of staffing problems. We are unable to influence some of these causes, such as the demogra phic state of the population, and on the labour market, we are "fighting" with other units of the Armed Forces for a limited number of people capable and willing to serve the country. Although the Czech Armed Forces' recruiting activities are visible at our various events, and individual units of the Air Force spend a significant amount of time participating in public events,we are probably not yet able to reach all potential applicants for service in the Armed Forces. However, we are working on this problem and we are trying, not only in the Air Force but within the entire Czech Armed Forces, to identify areas that would make service in the military even more attractive. These include, among other things, various financial and non-financial benefits, such as the possibility of using a children's group run by a military unit, the extended health care, and its availability, but also perhaps greater diversification of the housing allowance so that it more closely reflects the market prices of apartments and rents in different municipalities. A greater expansion of scholarship programs for students of civilian high schools and universities should also help with the targeted recruitment of specialists of specific expertise. I believe that interest in the military service will also increase with the arrival of new aviation technology. Another significant challenge is the state of equipment we use. Financing the life cycle of aeronautical technology is challenging, and in the context of the rapid development of new technologies, it becomes obsolete relatively quickly, which adds another complication.

In addition, the implementation of new equipment into the operation of the Czech

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Armed Forces is a complex and demanding process that brings several challenges and unpredictable situations that must be responded to.

At the 24th Transport Air Force Base (24th TAFB), this is concretely manifested by the absence of a medium transport aircraft (MTA), capable of fulfilling the tasks of the Transport Air Force over long distances, and also by the absence of a small transport aircraft (STA), whose lack of transport capacity is replaced by other types of aircraft techniques at the expense of other tasks.

From the point of view of the 22nd Helicopter Air Force Base (22nd HAFB), introducing new equipment and modern technology into the Czech Armed Forces is also not an easy task. While the new H-1 system helicopters bring advanced technological advantages and enhancements to our armed forces' capabilities, they also bring new challenges and difficulties.

Crews, technicians, and managers must undergo rigorous training and adapt to new technologies, procedures, and requirements associated with the new helicopters. This takes time and resources. Modern technologies in the new H-1 helicopters require specific and sophisticated maintenance and repairs, which is demanding as to logistics and finance, and the H-1 helicopter is also conceptually diametrically different from the way of repairing Mi-171Sh series helicopters. It is also important to ensure that the new H-1 helicopters are fully compatible with existing military systems. With new technologies, there come new security threats and challenges associated with the protection of sensitive data and information within new helicopters.

Solving all of these challenges requires coordination, cooperation, additional investment in human resources and technologies, and thorough planning to ensure the successful and efficient introduction of the new H-1 helicopters into the Armed Forces. However, despite these difficulties, I am fully convinced that the new H-1 helicopters are an indispensablea sset to our Armed Forces and enhance our ability to carry out current and future missions and tasks successfully and with greater efficiency. Thanks to the deployment of these modern machines, we are better able to protect our country and allies. Working with the new H-1 helicopters clearly shows that innovation and modernization are crucial for the stability and security of the Czech Republic.

In the tactical fighter aviation segment within NATO, a generational exchange of technological platforms is taking place. Even the Czech Air Force does not want to remain on the side-lines of this mainstream, and it is our long-term strategic goal to continue to remain a reliable and trustworthy partner of the air forces of the entire alliance.

Several years ago, we were solving the conceptual question of the form of the tactical Air Force of the Czech Armed Forces after 2030, these are currently being implemented through the project to acquire the fifth-generation aircraft, i.e. the F-35A. In close cooperation, the lease of JAS-39 C/D aircraft until 2035 and their modernization in the near futureis being resolved. In parallel, the issue of the most efficient use of the L-159 aircraft fleet potential is also being solved. All substeps lead to one goal, and that is to achieve full operational capabilities with 24 pieces of F-35A aircraft after 2035.

The strategic project for the acquisition of fifth-generation aircraft runs from the sum-

mer of 2022, i. e. two years. During that time, we managed, among other things, to build high-quality teams of experts across the entire resort who are dedicated to this project in the entire spectrum of areas. We also managed to establish cooperation with other European users of this platform. Basically, we encounter the same problems and challenges in the implementation of this project. We can therefore take lessons and inspiration from our alliance colleagues and try to avoid unnecessary mistakes and missteps.

Already at the beginning of the existence of this project, three critical areas of implementation were determined. And that is the issue of building the necessary real estate infrastructure at the main operational base, the area of project safety as a whole and the area of human resources for the effective operation of an aircraft of this technological sophistication.

The inadequate real estate infrastructure of the Czech Air Force represents certain limitations for the effective operation and maintenance of modern aircraft technology. Modern air force equipment requires specific conditions for safe storage, regular maintenance, and rapid deployment, which cannot be fully ensured by the existing infrastructure, and this can then negatively affect the operational capabilities and overall combat readiness of the equipment. In addition, the lack of suitable areas for parking and maintenance of aircraft is a constraint on Air Force planning and development, as a lack of infrastructure can lead to delays in fleet modernization and limit the ability to respond quickly to new security challenges. For these reasons, it is necessary to solve this problem as a priority and to integrate it into long-term plans for the development of the military infrastructure.

Extraordinary attention is paid to all the mentioned areas, and other equally important areas are also being solved step by step by the experts of the partial work teams.

Within the entire Air Force and within the department as a whole, there is a desire and determination to move and develop the capabilities of the Czech Air Force to the standards common in the Alliance.

Can you briefly assess the current status and perspective of the airand helicopter fleet, ammunition, and command and control assets?

The acquisition of new weapon systems will allow us to achieve a generational leap in the area of the air fleet, radar detection equipment and air defence means. As the conflict in Ukraine shows, there is great potential in the use of various Unmanned Aerial Systems (UAS) platforms. These will also gradually become a promising part of the Czech Air Force, as they can save expensive aviation equipment and even the lives of soldiers through their deployment. On the other hand, we have a significant amount of outdated ground support equipment that will still need to be replaced; the command and control system, although its capabilities have been improving for a considerable number of years, does not yet fulfil all that we need from it.

The 21st Tactical Air Force Base (21st TAFB) is equipped with JAS-39 C/D Gripen and L-159 ALCA aircraft, and its tasks include mainly the protection of the airspace of the Czech Republic and NATO countries within the NATINAMDS system and the fulfilment of combat tasks (National Reinforcement Air Defence System, JTAC training, support of the Land Forces and destruction of ground targets).

A reduction in the number of aircraft is assumed, with the intention of using the L-159 type primarily for pilot and flight personnel training for the new F-35 type. For the JAS-39 Gripen aircraft, the contract is expected to be extended until the end of 2035, and these aircraft will continue to undergo continuous modernization.

The numbers of aircraft are currently sufficient to fulfil the set tasks, but due to the existing numbers and technical equipment, there is no future capacity for a significant increase in combat capabilities, which will be realized with the arrival of a new type of supersonic aircraft, the F-35.

The new H-1 system helicopters are equipped with a number of advanced technologies that improve their performance, safety and efficiency. They achieve this mainly thanks to the use of new control, navigation and communication systems, sensors and also weapons systems. Together, these technologies represent the modern and comprehensive equipment of H-1 helicopters, which increase the capabilities of the Armed Forces and enable the successful completion of missions in various operational environments.

In 2028, the helicopter element of the 24th TAFB will cease its activities to provide air rescue services, and the W-3A helicopters will no longer be used. The base will therefore have to prepare to expand the operation of MI-17/171 helicopters, possibly to receive a new platform. This will entail a transition to the performance of other types of tasks.

Ground-Based Air Defence (GBAD) is currently becoming one of the most important and promising types of forces, which is mainly due to the fact that it was not given enough attention in the past. Long-term underestimation of this key defence unit has led to capability gaps that are now apparent. The current security situation, especially in

connection with conflicts in Eastern Europe, shows how essential it is to have a robust and modern ground-based air defence that is able to effectively protect territory and military units from various types of air threats, including missiles, unmanned vehicles, and aircraft.

Today, no modern armed forces can do with out adequate ground-based air defence, because these systems represent the first line of defence against air attacks, which can have devastating consequences for strategically important objects and the population.

Moreover, experience from recent conflicts shows that air defence is critical not only for defending one's own territory but also for supporting allied operations and maintaining military superiority in combat zones. With these factors in mind, we have recently begun to pay increased attention to ground based air defence, which includes not only the modernization of existing systems but also the purchase of new technologies, the provision of high-quality personnel training, and the integration of these capabilities into broader military operations. Our priority is to ensure that ground-based air defence is able to respond quickly and effectively to any threats and fully integrate into the overall defence system of the country.

We are currently facing a situation where battles are characterized by high intensity, which places enormous demands on the ability to effectively defend and protect not only the civilian population and critical infrastructure, but also our own fighting units and their technical assets. Battles take place in a variety of environments, often under difficult conditions, which require a high level of readiness and the ability to respond immediately to threats. To ensure that our units are able to perform their tasks even in these challenging conditions, we have taken thorough and well-considered measures. These include not only planning and logistical support, but above all the provision of a sufficient amount of ammunition and other critical resources for all weapons and effectors that are part of the equipment of the Czech Air Force. In this way, we are trying to ensure that our forces will always have the necessary resources available for effective defence, elimination of threats, and continuation of combat operations without unnecessary delays or restrictions.

Our measures also include regular checks on stock levels and logistics chains to enable rapid replenishment of ammunition where it is most needed. These steps are necessary to maintain a high level of combat readiness and the ability of the Air Force to effectively perform assigned tasks within the framework of the defence of the state. Means of command and control are one of the pillars of the operational capability of the Czech Air Force and enable effective coordination and synchronization of all Air Force units during the planning and combat operations.

They are essential for maintaining an overview of the situation in airspace, which includes not only monitoring enemy activity, but also monitoring one's own units and managing them effectively in real time.

Modern command and control assets include sophisticated communication, data collection and analysis systems that ensure command personnel have up-to-date and accurate information needed to make quick and informed decisions. These decisions are key to the successful conduct of combat operations, whether it is defending airspace, supporting land forces, or ensuring the safety of critical infrastructure.

Without robust and reliable means of command and control, the Air Force would not be able to respond effectively to the dynamic threats and complex combat scenarios it faces today. These systems must not only be technologically advanced, but also integrated into the wider military and alliance environment to ensure full interoperability with other armed forces and NATO Allies.

In addition, it is important that the means of command and control are constantly modernized and adapted to new technologies and threats. This includes investing in new communication systems, cyber defence capabilities, and advanced data analysis algorithms to enable faster and more accurate decision-making processes. The aim is to ensure that the Czech Air Force has such command and control systems that will enable them to effectively defend and protect the territorial integrity and airspace of the Czech Republic against any threats.

Logistics is also an important issue for the Air Force. What is changing in this area?

Logistics is a necessary element for the successful performance of any military tasks, and the same applies to the Czech Air Force. Without well-organized and effective logistic support, it would not be possible to provide

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Company Product Portfolio

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– Plates intended for production of special parts and parts of infrastructure for other security forces (i.e. shooting ranges, special training facilities), but also for the civil sector (banks, etc.)
– Semi-finished products and complete assemblies (cut, edged, twisted parts & workpieces) for the above-mentioned projects, made according to the obtained customers drawings

Type Of Activity

– Purchase & sale of plates with a focus on various types of armor from the world's major manufacturers
– Fabrication of semi-finished products (cut, edged and twisted parts & workpieces) according to the obtained drawings
– Cooperation with authorized research & testing institutes
– Expert consulting in the phase of prototyping as well as in the phase of serial production

Territorial Focus

In addition to the Czech Republic, also customers from Central & Eastern European countries (both, EU and Non-EU members).

Armored metal plates

The ballistic-resistant plates are the strong items of our product portfolio. They can be used in the military and civilian sectors.

Our Options

In stock armor plates from the world's leading producers

Production of semi-finished parts
– parts for the military and the civilian sector

Production possibilities
– cut parts – laser / 3D plasma
– edged & twisted parts
– drilled, milled & grinded parts

Delivery of complete sets

protectparts.cz/en

ARMOX

SSAB

ARMOX 370
ARMOX 440
ARMOX 500
ARMOX 600

RAMOR

SSAB

RAMOR 450
RAMOR 500
RAMOR 550
RAMOR 600

DIFENDER

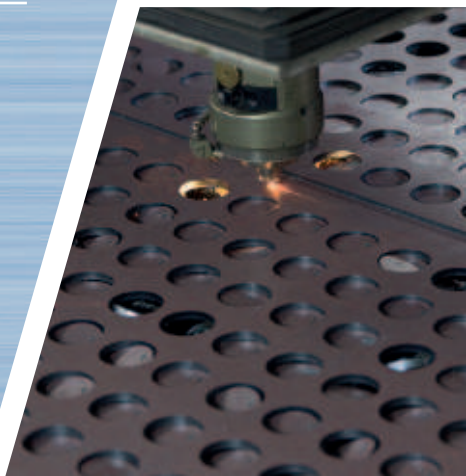
DILLINGER

DIFENDER 400
DIFENDER 450
DIFENDER 500
DIFENDER 600

MARS

INDUSTEEL

MARS 380
MARS 440
MARS 500
MARS 600
MARS 650
MARS 650 Perforated



the necessary supplies, equipment, maintenance, and infrastructure that are critical for maintaining the operational capability of the Air Force. With regard to the increasing demands for flexibility and speed of response of the Air Force, great emphasis is now being placed on the development of logistics capabilities that will be able to support complex operations in different locations and in different conditions.

As part of this effort, the formation of a new logistics element of the Czech Air Force will begin, which aims to strengthen the overall capabilities of the Air Force. This formation includes not only infrastructure and technical facilities, but also the development of airport manoeuvre capabilities, which means ensuring that aircraft can be efficiently moved between different airports as needed.

This is especially important in the case of a need for rapid response to crisis situations, when it is necessary to quickly change the location of Air Force units. This means that Air Force will be able to operate from multiple locations, including temporary or standby airfields, which increases their resilience and survivability in the event of a conflict and is essential for maintaining operational superiority and the ability to respond quickly to changing threats.

Overall, this logistic component represents a significant step forward for the Czech Air Force, which will strengthen the ability to respond quickly and effectively to threats and ensure the defence of the airspace of the Czech Republic even in the most demanding conditions.

How are funds being reflected in the whole process?

Financial resources are an essential basis for the successful fulfilment of the tasks of the Czech Air Force. Without sufficient and stable funding, it would not be possible to ensure not only normal operation, but also the modernization and development of capabilities that are necessary to maintain a high level of combat readiness. The money is crucial for purchasing modern aviation equipment, training pilots and technical staff, maintaining and upgrading aircraft, but also for ensuring operational capacities such as airports, logistics and support.

The funds are not just one-time investments but represent a long-term commitment of the state to security and defence. Regular and carefully planned financial flows allow the Air Force to effectively respond to current and future threats, adapt to changing technological requirements and ensure that all resources are used as efficiently as possible. Thisincludes not only planning the purchase of new aircraft and weapon systems, but also the maintenance and development of existing equipment and infrastructure.

Purposeful and effective spending of funds is a basic prerequisite for achieving the strategic goals of the Air Force. Priority tasks, such as the defence of the airspace of the Czech Republic, support of allied operations within NATO, and readiness for rapid deployment in crisis situations, require careful management of financial resources. Every investment must be backed up by detailed analysis and planning to ensure that money is used where it is most needed and that every expenditure maximizes the benefit of the Air Force's overall warfighting capability and readiness.

The problem we face is the limited resource framework, which does not allow us to implement all the strategic projects that are crucial for the Armed Forces due to slower GDP growth. The estimated budget faces us with difficult decisions where we must carefully consider which investments are most important to our Armed Forces. For example, we can not purchase additional aircraft if this would compromise or reduce the capability of Land Forces, which also have their own specific needs and priorities. Each military unit has its own requirements for equipment and modernization, and when the budget is tight, we have to make compromises, which can lead to some areas remaining underfunded.

This process requires a very sensitive balancing between different needs, as any underestimation may have future consequences for the Czech Armed Forces' ability to meet its obligations. If the government increased our financial resources, we would have more space to implement a wider range of strategic projects, which would allow us to better prepare for various future conflict scenarios. However,

everything depends on the allocated financial framework. If this framework is limited, we will have to continue very carefully balancing and planning to ensure that every penny is used as efficiently as possible and brings maximum benefit to the country's overall defence. It is fair to say that many of our partners in the North Atlantic Treaty Organisation face the same or similar challenges.

Ensuring sufficient financial resources is therefore necessary not only for maintaining current capabilities but also for their future development and adaptation to new challenges and technologies. This long-term approach to funding enables the Czech Air Force to maintain a high level of readiness and ability to effectively protect national interests in a changing security environment.

How do you evaluate cooperation and the fulfilment of tasks within NATO?

My experience with cooperation within NATO is great. Representatives of the Armed Forces of all member countries are aware of the fact that we must find common ways to solve current and future security threats. Thanks to a strong partnership and shared values, we are able to effectively respond to joint security challenges and ensure stability in the international environment. Joint operations and exercises allow us not only to deepen our military capabilities but also to build mutual trust between member states.

In addition, cooperation within NATO significantly contributes to the development of our Armed Forces. Sharing experience and technology with our allies helps us improve our operational capabilities and increase our readiness for a full spectrum of missions. This cooperation is key to our security and at the same time it is proof of our active participation in the international community.

Of course, industrial cooperation is also an integral part of the global modernization of the Czech Air Force and air defence of the Czech Republic.

The topic of industrial cooperation lies far from the tasks performed by the Czech Air Force and is rather a political-economic topic. As the Commander of the Czech Air Force, it is difficult for me to assess the current situation and its perspective. Of course, I welcome the efforts to involve the Czech Defence Industry as much as possible, because it is in the interest of the Czech Republic to have as much technological know-how and production capacity as possible, and it shows how such self-sufficiency is essential in crises.

In conclusion, I would like to ask you to briefly outline the perspective until 2030 or beyond.

The main milestone of the end of the third decade for the Czech Air Force will certainly be the arrival of the F-35 aircraft. In this period (year 2029), according to the comprehensive implementation plan, the first aircraft will be delivered, on which both ground and flying personnel will be trained in the USA. At the same time, in two phases (phase I. in 2026–2028 and phase II. 2028–2031), a fundamental reconstruction of the infrastructure will be implemented at the Čáslav base to prepare everything necessary for the arrival of the new platform so that the first aircraft can land there in 2031 F-35. Simultaneously with the arrival of a new generation of fighter aircraft, the Czech Air Force will continue to use the existing JAS-39 Gripen platform operationally, until the full operational capabilities of the F-35 aircraft are achieved in 2035.

The next challenge is therefore to maintain the high combat value of the JAS-39 Gripen fleet so that it can reflect on current threats. It will primarily be a software modification, including the modernization of weapon systems, which will be part of the package of services that the Czech Republic will order as part of the new lease agreement. In parallel, further use of the L-159 platform is also being analysed, which, with a meaningful modification of capabilities, can be an economically as well as qualitatively good alternative in the future for ensuring training needs and providing combat (fire) support.

For the Helicopter Air Force, it will be necessary to select and implement suitable successors to the Mi-17 and Mi-171Š platforms, and after it is finished in Čáslav, to reconstruct the Náměšť base. It is obvious that the level of personnel training for the newly acquired H-1 helicopters is to be met in order to meet the condition for achieving Initial Operational Capability (IOC) in 2025 and Full Operational Capability (FOC) in 2026.

For the Transport Air Force, it will be necessary to decide as soon as possible whether we will purchase a third aircraft of the A-319 CJ size as a replacement for the already decommissioned Yak-40 and CL-601 Challenger aircraft, or we will proceed conceptually by selecting and purchasing a small transport aircraft of the business jet category. The fleet of two A-319CJ medium transport aircraft will have a sufficient supply of operational time for the next decade after the avionics are upgraded and the interior equipment is replaced. In 2025, assuming the resource framework is maintained; we plan to deliver the first of two C-390 aircraft, which technologically, in terms of capacity and quality, accelerates the ability to transport people and material over medium distances.

The perspective of the development of ground-based air defence is based on two projects that are currently being implemented. The first is the acquisition and implementation of a new air defence radar system called MADR. It is no secret that the Israeli manufacturer has already delivered all the ordered sets and their certification and gradual integration into the Air Force command and control system is currently underway. Another key project is the replacement of the existing KUB system, through the acquisition of the Spyder system from the Israeli company Rafael. The milestone of this project is the year 2026, when deliveries of the entire system are planned in four waves, including missiles. Together, the MADR, Spyder and RBS 70 NG systems will form the basis of a new air defence system that will be able to face current and future threats.

General, thank you for your time and providing an interview for the magazine Review, of which you are a member of the Representative Editorial Board.

by Miloš Soukup
Photos by Ministry of Defence of the Czech Republic

AGREEMENT ON INDUSTRIAL COOPERATION IN THE F-35 PROJECT

LOM PRAHA is the first Czech company to conclude an agreement on industrial cooperation in the F-35 project. On Monday, May 20th, 2024, the Industrial Cooperation Project Agreement (ICPA) was concluded between LOM PRAHA s. p. and Lockheed Martin Global, Inc., which was signed on behalf of the state enterprise of the Ministry of Defence of the Czech Republic by its Director Jiří Protiva and for the global security and aerospace company, the Senior Director of F-35 Industrial Participation Lockheed Martin Aeronautics, Mr. David Baker. The ceremony was attended by top representatives of the Ministry of Defence of the Czech Republic, headed by the Minister of Defence, Jana Černochová.

"The acquisition of the 5th generation aircraft represents a technological leap not only for the Armed Forces but also for the Czech industry. We announced earlier that we managed to agree on 14 industrial cooperation projects worth more than CZK 15 billion as part of the purchase of F-35 aircraft. The signing of today's agreement thus represents the first step in this cooperation," said the Minister of Defence, Jana Černochová

The procurement of 24 fifth-generation F-35A combat aircraft is the most significant project in the history of the Czech Armed Forces. In January 2024, the Minister of Defence of the Czech Republic, Jana Černochová, and the Ambassador of the United States of America, Bijan Sabet, confirmed this strategic agreement.

Industrial cooperation is also an integral part of this key contract for the modernization of the Czech Air Force. The current idea includes 11 projects with Lockheed Martin and 3 projects with Pratt&Whitney, the producer of the twin-jet F135 engine. 13 Czech companies and universities will take part in them. They will be involved in four areas – component production, research and development, pilot training and maintenance, servicing and repairing the F-35.

This "agreement" between Lockheed Martin Global, Inc. and LOM PRAHA s. p. is the first industrial agreement concluded as part of the Czech industry's involvement in the program to acquire 24 F-35 fighter aircraft for the Czech Armed Forces. Its goal is mainly the transfer of top know-how in the modification

of the training schemes of the LOM PRAHA Aviation Training Centre, which will respond to the introduction of 5th generation aircraft into use by the Czech Armed Forces, and it will also involve the transfer and implementation of new technologies.

In the first stages of the cooperation between LOM PRAHA and Lockheed Martin, analytical activities of the existing training system will take place at the Aviation Training Centre in Pardubice. Based on this information, a new training system will be developed that will reflect the needs necessary for a smooth transition of pilots from the L-39NG subsonic jets to the F-35 combat aircraft. In particular, we talk about requirements for ground equipment, as well as training systems (including simulation technologies), new study plans, flight training schemes, or staffing.

"Other negotiated industrial cooperation projects within the framework of the procurement of F-35 aircraft are also aimed at the exchange of experience, know-how, and the introduction of technologies that, thanks to cooperation with leading companies in the Defence Industry, have the potential to

move our industry to the world top," said the Senior Director of the Industrial Cooperation Section of the Ministry of Defence of the Czech Republic, Radka Konderlová.

The following day, on May 21st, 2024, another agreement on an industrial cooperation project was signed between the consortium of Czech companies – První Brněnská strojírna Velká Bíteš, a. s., One3D s. r. o. and the scientific research centre HiLASE. The mentioned project is focused on the production of a component for the F-35 combat aircraft, during which the most modern technologies such as additive manufacturing and laser processing will be applied.

Author: Pavel Lang

Several months have already passed since the conclusion of the agreement on industrial cooperation in May, so we went to the state-owned enterprise LOM PRAHA and asked the Director, Mgr. Jiří Protiva, on the current situation.

You are right that time passes quickly and we must not just rest our laurels. The signed

agreement is a great opportunity for the development of the state-owned enterprise and, in the future, for further mutual cooperation with the manufacturer of the F-35 aircraft, Lockheed Martin. At the Air Training Centre (CLV) in Pardubice, a newly designed training system will be implemented on the L-39NG aircraft to suit the training of future pilots of the newly acquired 5th generation combat aircraft. Thanks to the established industrial cooperation, CLV will acquire the necessary know-how, include new modern technologies in training, and increase its credit not only towards the Czech Armed Forces but also towards other alliance partners. Currently, the simulation centre is under construction in Pardubice, where the full mission simulator L-39NG developed and manufactured by our subsidiary VR Group will be located.

Thank you for this great information.

Miloš Soukup

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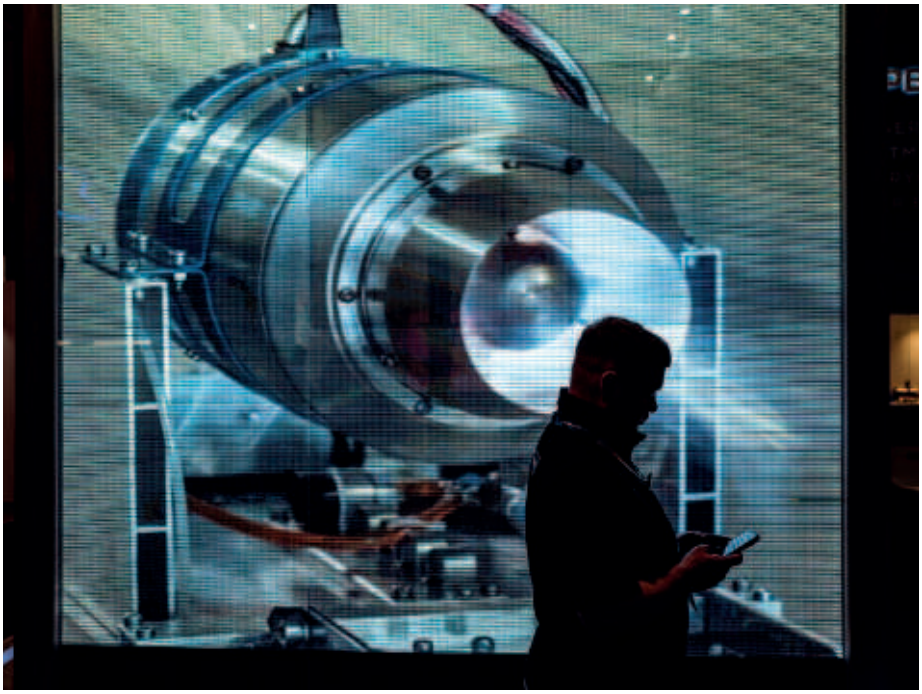
PBS UNVEILS A NEW JET ENGINE
AT FARNBOROUGH AIRSHOW

In July, PBS GROUP participated in the Farnborough International Airshow, the largest aerospace trade fair of the year. Alongside showcasing its complete range of jet engines, primarily designed for unmanned applications, the key event was the launch of the new AI-PBS-350 jet engine. Developed in collaboration with the renowned Ukrainian aerospace company Ivchenko Progress, this engine is tailored for specialized defence applications and features a thrust of 3400 N. It represents a significant addition to the engine portfolio of PBS GROUP within the defence sector.

Participation in the Farnborough International Airshow opened up new business opportunities for PBS GROUP. Throughout the trade fair, numerous strategic meetings were held at the executive level, leading to the initiation of new partnerships. Many of these discussions involved Czech government representatives, such as Jozef Síkela, Minister of Industry and Trade of the Czech Republic; Radka Konderlová, Senior Director of the Industrial Cooperation section of the Ministry of Defence of the Czech Republic; and representatives of other Czech companies that were a part of a unified national stand. These engagements were crucial for strengthening presence of PBS GROUP at the international market and may pave the way for significant future collaborations.

PBS GROUP representatives at Farnborough Airshow 2024.

The Farnborough International Airshow 2024 also indicated new trends in the exhibitor landscape compared to previous years. This year, several major aerospace players were notably absent, with their spaces taken by suppliers of aerospace components. Whether this shift signals a lasting trend in European aerospace trade fairs or is simply a temporary response to the current increase in market demand, particularly for defence-related aerospace applications, will become clearer in the coming months



This year, PBS GROUP is set to attend an even greater number of key industry events, including the International Engineering Fair (MSV) in Brno, and the Future Forces Forum in Prague, as well as international aerospace and defence trade shows in Japan, Turkey, Indonesia, Tunisia, and Vietnam. These events provide valuable opportunities for PBS GROUP to showcase new technologies and strengthen global business relationships, further advancing its strategy of growth and innovation in the field of aerospace and defence.

PBS GROUP IS STRENGTHENING
ITS GLOBAL PRESENCE IN THE DEFENCE SECTOR

Shortly after the conclusion of the Farnborough International Airshow, we asked Pavel Čechal, the Executive Director of PBS GROUP, for a brief review. At the event, Mr. Čechal introduced and officially launched the AI-PBS-350 engine, accompanied by Radka Konderlová, Senior Director of the Industrial Cooperation section of the Ministry of Defence of the Czech Republic.

Could you share some insights about PBS GROUP and its key achievements within the market over the recent period?

This year, we achieved a significant milestone in our long-term goal of becoming a leader in the development and production of aerospace technologies for the defence sector. This progress is evidenced by the signing of a strategic contract with Lockheed Martin, a global giant in the defence aerospace industry. Further proof of our success is the advanced negotiations with leading international companies, including the American leader Pratt & Whitney, renowned for its innovations in aircraft engines for both civil and military applications.

Our subsidiaries in India and the United States, PBS INDIA and PBS AEROSPACE, have experienced significant development and progress over the past period, resulting in a substantial increase in the volume of successful business cases. Both companies have also made important advancements in localizing the production of jet engines within their respective regions. These efforts are essential for strengthening our position in these markets and expanding business activities across the American and Asian continents. We are working diligently to finalize all the necessary steps to establish full-scale production in a short period of time.

I cannot overlook our own development of the TJ200 jet engine, specifically designed as a propulsion unit for modern UAVs, UCAVs, and defense applications. This year at the Farnborough International Airshow, we also launched the AI-PBS-350 engine, our latest and most powerful turbine engine, delivering an impressive thrust of 3400 N.

The official launch of the AI-PBS-350 engine at the Farnborough International Airshow, with Radka Konderlová, Senior Director of the Industrial Cooperation section of the Ministry of Defence of the Czech Republic, and Pavel Čechal, Executive Director of PBS GROUP.

What applications is the AI-PBS-350 engine intended for?

With this product, PBS GROUP is entering new market areas and will be able to offer expanded propulsion options for its customers' platforms. The engine is primarily designed for use in unmanned aircraft and cruise missiles.

What sets this engine apart from competitors in its category?

We are now one of only two manufacturers in Europe capable of producing such an engine. The AI-PBS-350 stands out with its exceptional thrust-to-weight ratio, placing it at the forefront of aircraft propulsion systems with an ideal combination of power, speed, and reliability. Its windmill and pyro ignition options provide reliable starting even under challenging conditions. Moreover, the engine's compact design allows for straightforward integration into various platforms, without taking up excessive space for other essential onboard systems.

How would you describe the other key areas of focus for PBS GROUP, and what are the plans for their development moving forward?

Our key areas of focus include building new development partnerships within the defence industry and expanding our manufacturing portfolio across aerospace and other sectors. Our goal is to achieve long-term growth by enhancing development and production capacities, optimizing processes and innovation, all through increased delivery volumes and investments in new projects.

PBS GROUP is a successful company with a forward-looking perspective. What is the vision for the coming years, and what are the critical elements necessary for achieving it?

Our long-term vision involves deepening and expanding collaboration with our customers through joint production and development projects. We are committed to delivering exceptional services by establishing service centres in key markets where PBS GROUP operates. An important aspect of our strategy is maintaining close cooperation with key Czech government bodies, including the Ministry of Defence of the Czech Republic, the Ministry of Industry and Trade of the Czech Republic, and the Ministry of Foreign Affairs of the Czech Republic, which play a significant role in supporting our global success.

Author: Miloš Soukup
Photo: PBS

THE SECOND VERSION OF THE GORGON X8 CZECH DRONE

Platform Extends the Possibilities of Use

AgentFly Technologies has developed a drone to carry ammunition. Based on tests and customer requirements, it expands its capabilities. The drone becomes a universal platform for easy and quick adaptation to a specific use. The modular design allows users to customize the onboard sensors and radios, change the behavior of the drone's control software, and use different types of payloads.

AgentFly Technologies was asked in 2023 to create a drone to carry ammunition. Within a few months, a pilot version was developed ready for testing and feedback from the military, potential customers, and experts. During the following year, the system was significantly innovated and expanded with new functionalities. Thanks to the extensions, the drone became a modular platform capable of performing a wide range of tasks.

The expansion of the platform occurred in three main areas. The first area is payload modularity. During the development of the newer version, the payload mounting system was improved, which now allows easy change of payload even in operational deployments. All types of cargo are equipped with a universal holder for mounting in the ejector. This makes it possible to use different amounts (1–5) and different calibers (up to 100 mm) of ammunition. The drone makes it possible to carry special ammunition for drones, which allows the ammunition to be unlocked only

during the flight, thereby increasing the safety of the operator. Another difference is the enlarged aerodynamic surfaces improving the flight characteristics during a drop. The drone can also carry other types of cargo, such as a first aid kit, emergency supplies of water, food, or small arms ammunition in situations where it is not possible to deliver the supplies by land.

The second area is the improvement of onboard instruments. Based on tests and information from the operational deployment of drones, resilience against electronic warfare is a critical element. In the first version, the drone could use different platforms for navigation and radio communication with the ground station. Components from multiple manufacturers behave differently under various types of interference (each device is better in a different situation). In the new version of the platform, it is possible to combine multiple hardware devices in the drone, for example, a radio unit that better resists weaker but broad-spectrum interference with a unit that resists strong interference at specific frequencies. Combining components increases the overall resilience of the platform.

The third area of significant innovation is flight control software. The key ability is to react to the actual situation. In a highly interfered environment, it is important to evaluate the information from the onboard signals, correctly decide which sensors can be considered reliable and which must be temporarily disabled, and fuse all the data for the needs of flight control. Additional methods of localization (e.g. based on ground receivers) and methods of returning the drone to the starting point even in the case of a complete loss of localization and radio communication have been added to the platform.

In addition to improving the characteristics and behavior during the mission itself, the development was also focused on the simplicity and speed of operational deployment. The entire platform can be moved by 2 to 4 people. The time required to prepare the platform for take-off is less than ten minutes. The platform also enables the use of different ground stations based on the customer's preferences.

All improvements increase the durability of the drone and allow operations to be carried out in environments with a high level of electronic warfare. Along with the greater variability of the payload, the possibilities of operational deployment and overall efficiency are significantly expanded.

The new version of the platform was presented at the world's largest security and defence fair Eurosatory 2024 in Paris. Due to the security situation, the number of exhibitors and visitors was a record. Interest in drone technology is enormous and growing. The AgentFly Technologies stand, presenting not only the latest version of the Gorgon X8 platform, was visited by countless visitors including government delegations from all continents, military personnel (from direct drone users to commanders), companies using drones in the security and industrial sectors, and the professional public. Interest in the platform has exceeded expectations and negotiations are currently underway to supply the platform to several countries.

Currently, the improved version of the platform is undergoing another set of tests focused mainly on conducting flights in an environment with increased electronic warfare (for example, interference from multiple sources spread over a larger area, increased performance of jammers, a combination of interference methods, etc.).

Author: Přemysl Volf
Photo: AgentFly Technologies

AVIATION SERVICE OF POLICE OF CZECH REPUBLIC

is an operator of helicopter technology with special police, emergency, rescue and ambulance equipment. Air support has become an essential part of police practice and the integrated rescue system. Thanks to their characteristics, helicopters are predestined especially for mission tasks where there is a risk of delay and in places otherwise difficult to access by other means of transport. The main air base is in Prague-Ruzyně, the second one is in Brno-Turany. Since 2012 its director is Dipl. Eng. Tomáš Hytych, MBA.

Mr. Director, can you briefly tell us how long you have been with the Police of the Czech Republic and what you have been through?

I joined the police on 1 December 1992 as a police inspector in the district department. Subsequently, I continued to work as a Duty Commander and the District Chief and later also as a Coordinator of the construction of the Foreigners Detention Facility and in November 2001, I was appointed Deputy Director for Economics of the Directorate of Foreign Police Service. I was appointed to the position of Director of the Aviation Service of Police of Czech republic (LSPCR) after a competitive selection process on 1 April 2012.

It is known that you will be required by law to terminate your service due to the age limit. What were and are your priorities in this post?

Applying managerial experience in economic processes from past duty positions, experience in drawing financial resources, e. g. from the Phare programme, readmissions, or currently from European funds, to manage the Aviation Service of Police of Czech Republic effectively not only commandingly, but also economically and to provide the necessary finances to perform the very demanding tasks that the Aviation Service is engaged in.

The Czech Air Service will have a significant anniversary, can you please briefly mention its history?

Yes, the year 2025 marks the 90th anniversary of the Aviation Police.

The need to deploy aviation technology for security tasks has been evident since the beginning of the 20th century. The technology was to be used mainly for observation and monitoring activities – fire reporting, control of prohibited areas, etc.

The first real deployment for security purposes on the territory of Czechoslovakia occurred in 1920. The Gendarmes asked the army to send air support to intervene against striking workers in Rosice and Oslavany. Three French-made SPAD VII aircrafts were sent. The strikers dispersed before the arrival of the planes, which were armed. With regard to its demoralising effect on the strikers, the action was evaluated positively.

On 1 July 1935, the first five gendarmerie air patrols were established by Decree of

Ministry of Interior No. 45/866/13-1935. Its bases were located in Cheb, Růžodol near Liberec, Hradec Králové, Dolní Benešov near Opava and Vajnor near Bratislava.

The bases had a precise territorial scope. The aircrafts were marked with a cockade in the form of a spherical triangle, this emblem has survived to the present days.

The gendarmerie air patrols were subordinated directly to the Ministry of Interior. Their task was to protect the exclusive jurisdiction and sovereignty of the state in the airspace over the state territory, to cooperate with the ground security service, especially in the search for criminals and to carry out rescue work during natural disasters and plane crashes. The equipping of the Czechoslovak gendarmerie with airborne equipment was the last step in its motorisation, and led to an increase in the mobility and efficiency of the gendarmerie both on the ground and in the air.

The events of 1938, however, put an end to the development of gendarmerie air patrol bases. As a result of the mobilisation, the aviation equipment and personnel were transferred to the military air force and the activity was then completely terminated in 1939 after the occupation of the republic.

Between 1935 and 1939, the gendarmerie air patrols had various types of aircraft, such as the Skoda D-1, Aero AP-32, Letov Š-528, Benes Mráz Be-51B, Avia B-534 IV and Letov Š-328.

After the war, air defence fell under the joint responsibility of the Ministry of Interior and the Ministry of National Defence. The Ministry of Interior provided air protection of the state borders and the Ministry of Defence provided anti-aircraft artillery, fighter aviation and other means and equipment.

In 1945, a government squadron was established within the Ministry of Transport to provide transport for constitutional officials. Over time, this activity began to be carried out by the military air force and then by variously transforming departments of the Ministry of Interior. The list of equipment used since 1945 is very extensive. In addition to fighter, observation and transport aircraft, there were also large transport aircraft and helicopters. The range of aircraft used was very diverse, for example the S-99 (Messerschmitt Bf 109G), S-97 (Lavochkin La-7FN), S-89 (Spitfire LF Mk. IXE), D-44 (Siebel Si-204D), D-47 (C-47 A/B Dakota), D-52 (Junkers Ju-52/3m), LI-2, Morava L-20, Ilyushin IL-14, IL 18, IL 62M, Tupolev Tu-154M, Yakovlev Yak-40, Mil Mi-1,Mi-2, Mi-4, MI-8, CL-601 3A, Let-410UVP-E-20D, Bölkow BO 105CBS4 and other types).

From 1 January 1951, a new unit was established at Prague-Ruzyně Airport, whose main task was to support the National Security Corps. In the following years, in addition to airplanes and helicopters, the Security Air Force also had large transport machines at its disposal. The tasks were very varied, in addition to the transport of constitutional officials and persons, these were security, rescue and medical tasks.

With the development of helicopter technology, air ambulance service has become an important part of the activities. On 1 April 1987, the operation of an ambulance helicopter with the designation "Kryštof 1" was launched at the Air Rescue Service Centre for the territory of the capital city of Prague and the Central Bohemian Region.

Russian-made Mi-8 helicopter of the Police of the Czech Republic – salon finish. Crew: two pilots and a flight engineer, modified passenger compartment layout. Rotor diameter 21.29 m, length 18.17 m, height 5.65 m, empty weight 7 260 kg, maximum take-off weight 12 000 kg, two engines each with 1 454 kW, maximum speed 260 km/h, practical range 4 500 m, range 450 km, cross-country range 960 km.

Avia B-534 IV fighter aircraft – Crew: 1 pilot, wingspan 9.40 m, length 8.10 m, height 3.15 m, empty weight 1 460 kg, take-off weight 1 980 kg, engine power 625 kW (850 hp), maximum speed 380 km/h (sometimes quoted up to 406 km/h), range 600 km, range 10 600 m, climb rate 15.0 m/s, armament: 4 synchronized machine guns of 7.92 mm calibre with a maximum of 300 rounds per gun, 6 units of 10 kg or 4 units of 20 kg bombs.

After November 1989, machines from "Western" countries entered our aviation scene. The first type was the BO 105 helicopter, which served in the Air Rescue Service from 8 August 1991.

The Aviation Service of Police of Czech Republic was established in 1993. Two modern Bell 412 HP medium weight multi-purpose helicopters with the most modern rescue and police equipment were included in the services of this police unit. In the following years, the BELL 412 EP and Bell 412 EPI versions were added. In 2004, the helicopter technology was further supplemented by Eurocopter EC-135 T2 "light" category machines, the last type of this helicopter being EC 135 T3H.

The development and obsolescence of the equipment led to the gradual termination of the Mil Mi-2 and Mil Mi-8 helicopters. With the termination of Mi-8 helicopter operation in the conditions of the Aviation Service of Police of Czech republic, the heavy category helicopters were lost without replacement.

In 1998, the Government decided that the transport of constitutional officials will be provided by the Army Air Force . This abolished the State Air Service, which had provided this service. The cockade marking in the form of a spherical triangle disappeared irrevocably from the aircraft of the Service and was replaced by military roundels.

Currently, Aviation Service of Police of Czech republic operates only helicopters and unmanned aerial vehicles.

What is the main intention and the tasks of Aviation Service of Police?

The content of air support performance has remained practically unchanged. This state of affairs is based on the very nature of the tasks that the "police air force" can perform. Flight requirements are implemented by helicopters. A completely new technique at the disposal of the Aviation Service are unmanned aerial vehicles – "drones".

The Aviation Service is a unit of Police of Czech Republic with a nationwide remit specialising in the provision of air support to police departments and integrated rescue system units.

With the aircrafts and unmanned aerial vehicles of Ministry of Interior of Czech Republic, it performs tasks for the internal security of the state, public order, the integrated rescue system, crisis management and other tasks of the state administration on the basis of government decisions, decisions of the Minister of Interior and negotiated international and interdepartmental agreements, and for these activities it ensures the permanent availability of aviation equipment and personnel.

Within the scope of its competence, the Aviation Service ensures the management, use and operation of the aircrafts and unmanned aerial vehicles in accordance with legal regulations, internal management acts, regulations of manufacturers of aeronautical equipment, directives and regulations of the Ministry of Transport of Czech Republic governing the operation of Czech civil aircraft and unmanned aerial vehicles and regulations of the European Union relating to the aeronautical activities of police aircraft and unmanned aerial vehicles, ensures aeronautical work and aeronautical activities in accordance with the requirements of the police departments and the Ministry in accordance with internal management acts.

These include flights to search for missing persons, wanted items, perpetrators of serious crime or items associated with criminal activity, pursuit and intervention against perpetrators of serious crime, aerial reconnaissance, aerial control of the state border protection regime and patrol activities at state borders, control, observation and patrol flights, aerial surveillance of road traffic, aerial photography and aerial documentation. Aviation Service also provides flights related to security and escorts of protected persons and security of objects of special interest, transport of police officers, members of fire protection units, air rescuers of the Fire Rescue Corps of the Czech Republic and other experts and specialists, flights for rescue and evacuation of persons and rescue work during natural disasters and catastrophes, large-scale industrial accidents and major traffic accidents, transport of special means, technical equipment, material or humanitarian aid. However, you can also see us performing construction and assembly works for the needs of the police and the Ministry within the scope limited by technical equipment, training of specialists of the police and the Ministry and air rescuers of the Fire Rescue Corps of Czech Republic and we also provide other flights for police purposes, special flights in times of emergency, demonstrations of aerial equipment and aerial activities, we perform aerial work and aerial activities within the integrated rescue system, aerial work and aerial activities on the basis of co-operation agreements concluded with non-departmental entities, aerial activities in the performance of tasks arising from international treaties, and we perform special flight tasks as decided by the Minister of Interior and the President of the Police. In addition, we also fly for our own needs to provide training of aviation personnel and checking of piloting techniques of executive pilots, flight testing, verification and technical flights, on the basis of inter-ministerial agreements we provide synergy with military and civilian units in the field of aviation, we provide methodical, instructional and training activities for police units, ministries and cooperating units of the integrated rescue system in the field of the use of police aircraft and unmanned aerial vehicles and their additional equipment. For this purpose, the Director of

Aviation Service is authorised to issue internal acts of management.

The Aviation Service performs its tasks from two main bases, located in Prague-Ruzyně and Brno-Tuřany, with a backup base in Ostrava-Zábřeh.

Temporary pre-designated workplaces can be set up if necessary. This situation has arisen in the past, for example, in the context of major floods. The above-mentioned bases in Prague and Brno are used for the continuous operation of the Air Rescue Service. In Prague and Brno, 24-hour operation of emergency helicopters is ensured, and in Prague, 24-hour operation of the Air Ambulance Service helicopter. The localization of the bases is related to the flight times to the incriminated places and the length of the aerial work itself. If necessary, helicopters can refuel at some airports in the Czech Republic, or tankers can be sent to the designated locations.

The actual deployment of airborne equipment is dependent on the weather, which is the main limiting factor. In the event of duplication of requirements and insufficient capacity, flights are prioritised. The first priority is always to save human lives.

The time to reach the mission site is determined according to the average flight time to the mission site from the main air base in Prague or from the air base in Brno, including a time delay of approximately 10 minutes from the request for the helicopter to its take-off from the receipt of the call. Flight times may also be affected by weather conditions.

The Aviation Service of Police of Czech Republic is continuously undergoing modernization. How many helicopters and what types do you currently operate? And you also mentioned drones, for what activities do you use them?

We currently only operate helicopters and drones. Specifically, 9 Eurocopter EC 135 helicopters and 6 Bell 412 helicopters. Drones, or in terminologically correct terms, unmanned systems, have had their important place in the Czech Air Service for a very long time. Since about 2007, it has been co-developing

the regulatory framework for unmanned systems in the Czech Republic and, in close cooperation with the Civil Aviation Authority, has been gradually and carefully introducing drones into common police practice.

There is no doubt that unmanned systems can serve effectively and efficiently, but their operation must first and foremost be safe. For the aerial activities provided by the Air Service of the Police, the criterion of operational safety is quite crucial when implementing an operational plan.

Police unmanned systems, in the performance of the tasks of Police of Czech Republic, reach the very limit of the common civil regulatory framework for unmanned systems and in cases of threats to health, life, property or the environment even beyond this limit. Such a mode of operation naturally places high demands on the professional competence of the personnel, which the Aviation Service of Police is intensively engaged in. In addition to standard civilian training, remotely piloting pilots of the Czech Aviation Service undergo a system of their own special training, which is practically used by other organisational units and departments of Czech Police.

We are a specialised unit providing aeronautical activities for other organisational units and departments of the Czech Police. In the field of drone operation, which these units and departments may also possess, the Aviation Service of Czech Police provides non-standard aeronautical activities, usually associated with a high level of operational risk.

In addition to the aforementioned safety criterion, in the operation of drones, the Aviation Service applies the principle of proportionality, i.e. it always uses the optimal technical solution, namely a suitably equipped unmanned system of appropriate size or weight, to implement its plans. While the majority of police activities can be efficiently performed by standard unmanned technology available on the market in the Czech Republic, a certain part is performed by special drones. Generally speaking, most of the aerial activities we provide are carried out covertly or in secret. Thus, the so-called drone units of the Aviation Service of the Czech Police are practically encountered at demonstration events rather than in the field.

In the overwhelming majority of cases, the unmanned systems of the Czech Aviation Service are used to capture images that are used by other organisational units and departments of the Czech Police, or by the IRS units or other cooperating state entities in the performance of their tasks, in planning or implementing measures. The recordings are taken in sufficient resolution, day and night, according to the needs, and shall be used immediately, in the form of direct image transmission, or processed and evaluated afterwards.

The Police Aviation Service should be the primary unit of the Police for the implementation of high-risk operation of unmanned aircraft, as well as, for example, a gestor of professional training in the field of unmanned systems within the Police of the Czech Republic or a provider of methodological, advisory and consultancy activities in the

Eurocopter and Bell LS helicopters

field of unmanned systems and their operation for other organisational units and departments of Police of Czech Republic. One of the major challenges is also to ensure a permanent perfect orientation in available unmanned technologies and products, preparation of operational scenarios for use within the Police of the Czech Republic and their safe implementation in practice in accordance with the operational needs and individual requirements of parts and units of Police of Czech Republic.

Unmanned aviation is undoubtedly an extremely dynamic and promising branch of aviation, which has its place of honour also in the Police of the Czech Republic. The Aviation Service of Police of Czech Republic approaches the introduction of unmanned technologies into operation very cautiously and sensitively, but of course with the knowledge that unmanned technologies, digitalization and automation belong to the future.

How are your helicopters equipped, what can you use them for?

The equipment of our helicopters is of a high standard and is constantly being upgraded. This includes, for example, load-bearing equipment such as the hoist, which is used to lift loads from inaccessible terrain or to handle the rescue basket (the Bell 412 machines have a hoist with a capacity of 272 kg), the cargo hook, which is designed for attaching external loads (on Bell 412 machines it has a capacity of 2 040 kg, EC 135 light machines have a hook with a capacity of up to 1 000 kg), a rappelling trapeze for anchoring rappelling ropes, a rescue basket for rescuing persons as sling load and a loading ramp for loading and unloading materials. There are also search and tracking aids, such as the Spectrolab searchlight SX-16 Nightsun (1,600W searchlight, operated by the pilot or flight engineer in the cargo bay - can be carried by Bell 412 machines), thermal imaging (since 1981, a Polish-made AGA thermal imaging camera has been available on Mil Mi-8 helicopters, while the Bell 412s have had a FLIR 2000 FN camera and the latest thermal imaging devices are the third generation ULTRA FORCE II thermal imaging cameras), night vision goggles as part of the helmet on the Bell 412 and EC 135 machines, a search radio compass designed to search for signals on the 121.5 MHz and 243 MHz emergency frequencies in the event of an aircraft crash, an external loudspeaker with siren (only available on the Bell 412 machines, but speakers are not installed due to poor audibility).

We also have medical equipment, which is almost no different from that of ambulances. Equipment includes defibrillator-cardiostimulator, stretcher, vacuum mattress, scoop frame, neck collars, splints, pressure monitor, pulse oximeter, suction pump, infusion pump, etc. The equipment is modular – it can be exchanged for another type of equipment at any time. The equipment is fixed on guide rails on the floor. In the interior, mainly lightweight materials (aluminium, plastic) are used.

For the sake of completeness, I will add one more piece of equipment, namely the bambi bag, an integrated fire-fighting system designed to extinguish fires in the sling load. A 465-litre bambi bag is available for the EC 135, two 795-litre bambi bags and two 1 000-litre bambi bags are available for the Bell 412.

The Bell 412 machines are also equipped with a moving digital map.

The Czech Police have several thousand unfilled chart positions, does this also apply to the Aviation Service? Do you have enough experienced pilots and technicians? By the way, I heard you had a female pilot...

Recently, the Aviation Service has no problems with recruiting new pilots, flight technicians or drone operators, as it is a very attractive job. What is currently troubling us, and will probably be a problem in the future, is the shortage of mechanics. Due to the possibility of salary conditions for civilian employees, we try to recruit new applicants on the police tables, which the job catalogue allows us to do, but even so, replenishing the current staff and looking to the future is really problematic. It is no exception that we still employ mechanics over the age of 70 who are still needed.

As you mentioned, we also have a female pilot at the moment, she is a young lady who comes from an aviation family and she has a huge potential where she has already flown both types of helicopters and she is very capable and I believe that in the future it will not be the exception but the standard given the development of the company.

For pilots, performing tasks in extreme conditions must be very challenging. How is their training going?

The Czech Aviation Service has an accredited flight school, where they train their own pilots, as well as special training for specific activities, such as search, firefighting, parachute jumps from the deck, flights using NVG*, VFR** and IFR***, search, rescue from inaccessible areas or water surface. These are specific tasks that are trained and coordinated

ABNER a.s. was established in 1993, more than 30 years ago, and quickly became synonymous with quality and innovation in the field of gastro equipment. The company's main products include transport tablet carts, active and passive tablet systems for food transport in hospitals and senior homes, and gastro carts, counters, and shelves for demanding food service operations, including ocean liners.

Another significant aspect of our production is CO_2 and N_2 pressure cartridges, which serve as the driving medium in fire extinguishers. In this area, ABNER a.s. is one of the largest and most prominent players on the global market. Innovation, listening to our customers, and the ability to respond to their needs have made the company the largest manufacturer of fire extinguisher pressure cartridges in Europe.

This year, a new vision for 2035 was adopted, promising dynamic growth, development and export growth. The company will focus on automation of production, innovation and quality, which are key to maintaining competitiveness in the global market. Thanks to the combination of tradition and modern technology, we can look forward to new products that will meet the highest standards and satisfy the needs of even the most demanding customers.

PARTNER OF GASTRONOMY

with the participation of other police departments and the Fire and Rescue Service.

What were the most difficult mission tasks your crews had to handle?

In the past, the helicopters of the Aviation Service of Police of Czech republic had missions, for example, during the floods in Moravia in 1997. During the most critical phase of the floods, between 7-11 July, almost all of the equipment was deployed. Only one helicopter remained at the main base of the LS PČR in Prague, which continued to provide air rescue services and was exceptionally prepared for other emergency tasks. From 7 July, 6 to 8 helicopters, 20 pilots and operators and 8 technicians were permanently deployed in the East Moravia area. In addition to rescue operations involving the rescue of persons, police helicopters were involved in humanitarian supply of the population and provision of material aid. One of the other activities was monitoring the situation in eastern Bohemia, especially in the vicinity of Hradec Králové.

Significant mission tasks within the integrated rescue system included fire fighting in the sling load using a bambi bag. In addition to firefighting in the Czech Republic, Czech police Bell 412 machines have also appeared abroad twice. Bambi bags were used in 2000 to extinguish large forest fires in Macedonia and also in the Slovensky Raj, where, in addition to Czech and Slovak helicopters, helicopters from Poland and Hungary also intervened.

A peculiarity compared to European countries is the fact that the firefighting is not carried out by the Fire and Rescue Service of the Czech Republic, but by the Aviation Service of Police of Czech Republic.

Other important rescue operations were carried out by LS PČR helicopters during the floods in Bohemia in 2002, special flights during the covid pandemic, firefighting in Albania and a significant contribution during the fire in Hřensko in 2022, where it not only extinguished but also managed the complex process of organising the airspace during the firefighting by airborne means, which on some days numbered over twenty. Very often, helicopters of Police of Czech republic are deployed in search operations. These are usually searches for missing persons, less often for items (e. g. stolen cars). Helicopters are also used in monitoring areas, for example in 2005 during the technoparty CzechTek 2005.

In 1996, we also carried Pope John Paul II on board a helicopter to Poland and back.

What do you consider to be your greatest achievement in this capacity?

It is not possible to say unequivocally what my greatest achievement as Director of the Aviation Service is, because it is not my achievement, but that of the whole team, which consists of professional police officers, as well as civilian employees. I will list just a few of the partial achievements of the Squadron that we have accomplished. We have managed to ensure the overhaul of 3 damaged helicopters and the purchase of new equipment – 2 helicopters and the introduction of unmanned aerial vehicles, including the creation of 4 workplaces equipped with state-of-the-art equipment, the approval of a new Aviation Service concept until 2032, when the helicopters will be completely renewed with other types, the start of work on the creation of RescEU (that is, the European firefighting squadron) with the assumption of up to 6 helicopters, which will also be operated by the Aviation Service. Furthermore, the purchase of a new helicopter simulator, the ongoing cooperation for a new system for the provision of the Air Rescue Service, and finally the start of activities for the construction of a new Hangar D at Prague-Ruzyně Airport, which I have been trying to achieve throughout my time in office. But also other activities, such as flood rescue, fire fighting in Albania, the big fire in Hřensko, special flights within Covid, there are many concrete achievements during my directorship. We have also been awarded many times, for example with the Police Officer of the Year - Team award, we received the Golden Rescue Cross, which was presented to us by the President of the Czech Republic, our Chief Pilot was awarded a medal by the President of the Republic, etc. There are many positive results and I am proud to have been part of this great team.

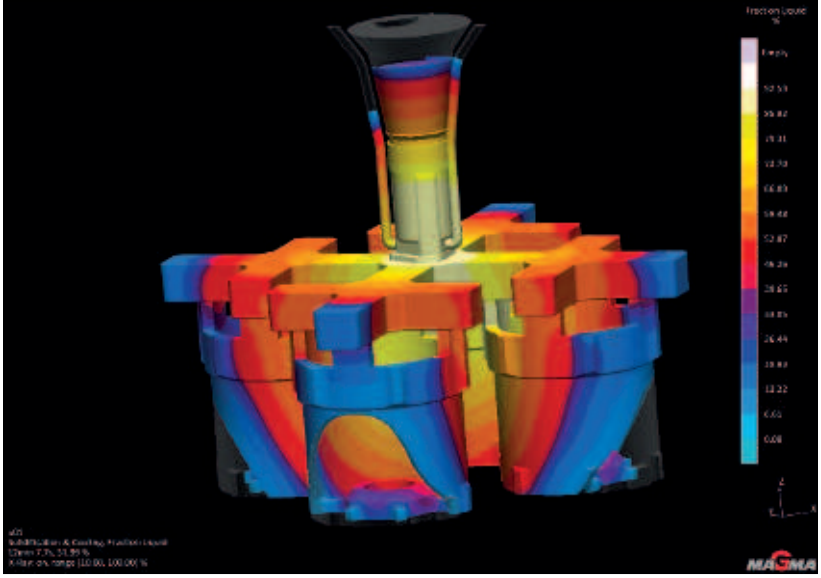
As of 31 December 2024, I will end my service with the Police of the Czech Republic and, of course, as Director of the Aviation Service of Police of Czech Republic due to retirement. Therefore, at the end of our conversation, I would like to sincerely thank the editorial

LS PČR was awarded the Golden Rescue Cross by the President of the Czech Republic in 2023

board of the Review for Defence and Security Industry, published by MS Line s. r. o., for their long-standing support and wish you all every success in your meritorious work.

Mr. Director, thank you for the interview.
Jaroslav Jonák

**NVG – night vision flights*
***VFR – visual flight*
****IFR – flights in poor meteorological conditions*
Photo: LS PČR



To predict and optimise casting quality, MESIT uses Magmasoft simulation software, which helps improve technological designs and increase the efficiency of production processes.

MESIT HAS TESTED A NEW TECHNOLOGY FOR PRECISION CASTING

In the consciousness of the professional public, the name MESIT is linked with the development and manufacturing of avionics and communication electronics. These activities also involve the manufacturing of precise mechanical parts, which is the speciality of company MESIT machinery (member of OMNIPOL Group). The quality of components for aviation and defence is subject to strict requirements, which is why the company has a history of focusing on research and development of new casting technologies. In 2022 it developed a unique robotic workstation for the solidification of aluminium castings, which has passed its first years of testing.

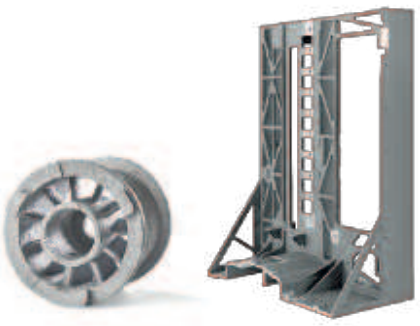
The commonly used method of gravity casting does not usually involve controlling the parameters of metal solidification. As a result, the castings have a coarse-grained structure which negatively affects the mechanical properties of the casting and leads to the formation of internal imperfections. Through repeated experimentation, MESIT has discovered that the solidification process can be influenced by submerging the product in a special bath with precisely defined parameters for a specific period of time and at a specific submersion rate. This method requires high accuracy, repeatability and flexibility, which can only be guaranteed by a robotic handling system.

Research and new trends in metal casting represent an advantage for customers

Results of testing from 2023 indicate a reduction in product non-conformance to less than 1%. That is a highly satisfactory result, particularly for customers from the most demanding branches of industry, such as aviation and defence. Controlling the solidification process minimises porosity, improves mechanical properties and also reduces the deformation of the product after casting. The technology is legally protected as a utility model.

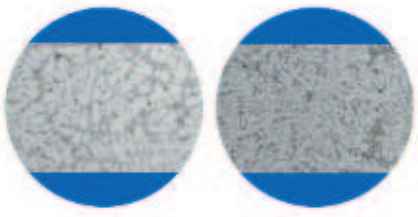
Precise castings including CNC machining and galvanisation. All under one roof.

MESIT machinery, a. s., is not only a reliable manufacturer of aluminium castings but also a provider of comprehensive engineering services: it performs precise CNC machining and high-quality surface finishing of metals.



The company prefers commissions of complex or thin-walled castings starting at 1 mm thickness

Comparison of X-ray images of castings using standard technology and the new technology



Coarse-grained structure when using standard technology and fine-grained structure thanks to the new technology

Photo: MESIT machinery, a. s.

POLICE FORCE MODERNIZES:
THIS TIME ABOUT SPECIALIZED VEHICLES

As part of the "Development Concept of the Czech Police until 2027," we introduced a modern water cannon in the 2/2024 issue of 'Review for Defence and Security Industry', presented by Deputy Police President Brigadier General Jaromír Bischof. However, the modernization affects virtually all types of vehicles, and the police also have many modern specialized vehicles in their fleet. This article will focus on some of them.

Škoda Kodiaq Vehicle – Equipped with a Police Ram

At the end of 2023, the Czech Police added 289 Škoda Kodiaq vehicles to its fleet, equipped with special features. The most notable addition is certainly the protective ram mounted on the vehicle, which allows for the execution of the PIT maneuver (Pursuit Intervention Technique). This technique involves a police car with the ram approaching the pursued vehicle and, at the right moment, striking it at the rear bumper near the wheel, causing the pursued vehicle to spin out, allowing the officers to stop it. Although it may seem dangerous at first glance, it is performed only by trained officers who have practiced the maneuver.

The vehicle is powered by a turbocharged gasoline engine with a displacement of 1984 ccm, delivering 180 kW of power, with all-wheel drive, automatic transmission, and an adaptive suspension system. The engine and brakes are based on the sports model Kodiaq RS, but the suspension is raised and specifically adapted for this special purpose. The 18-inch wheels have standard steel rims, which are more durable than alloy wheels. Currently, these vehicles are used in two variants. The first, with 241 units, is designated for frontline patrols of the public order police and includes features such as a gun locker and mounts for transporting ballistic vests. The second version, with 48 units, is for traffic police units, equipped with a worktable and storage spaces for the necessary devices and equipment. Both versions are outfitted with modern communication technology, enabling the safe and rapid transmission of all necessary information between the operations center and the patrol.

Command and Staff Vehicle

Another specialized vehicle is the command and staff vehicle, which is highly unique in its equipment and purpose. This mobile command center, a Mercedes-Benz Arocs 2542 L NR with a special body built by URC Systems, s.r.o. according to police specifications, is designed for versatile use in both urban and off-road environments. It allows for on-site command of operations directly from the vehicle.

These vehicles can be used for a wide range of activities, such as monitoring sports events and demonstrations, search operations, or during floods. It is divided into two separate workstations with the capacity to accommodate up to twelve officers, providing full access to the Czech Police systems, with its own power source and backup. The body of the vehicle has a retractable right side, which allows for immediate expansion of the interior workspace. The vehicle can be entered via two separate doors (rear and side). Its comprehensive system not only includes technological means for connecting to police systems but also advanced radio communication capabilities, such as covering areas with insufficient mobile network coverage or radio signal used by officers. Additional equipment includes tools for search operations,

Škoda Kodiaq Vehicle – Equipped with a Police Ram

Škoda Kodiaq Vehicle – Equipped with a Police Ram

'Jupiter' mobile operations center vehicle

A specially modified Volkswagen Crafter

'Jupiter' mobile operations center vehicle


A specially modified Volkswagen Crafter

such as devices for locating individuals in inaccessible terrain, personal thermal imaging, and more. The vehicle also has its own protection system, complemented by a full-circle camera system, including roof-mounted cameras.

Riot Unit Deployment Vehicles

The police are also receiving new riot unit deployment vehicles, both under 3.5 tons and over 3.5 tons, primarily intended for personnel transport – police officers. These vehicles are built on two types of chassis. The smaller vehicles are based on the Volkswagen Transporter T6.1 2.0 TDI 150 kW 4motion, configured for the transport of 1+1+4 and 1+1+5 people, meaning the driver + vehicle commander + number of crew members. In the 1+1+4 version, one seat is replaced with a storage compartment in the rear of the vehicle. The larger vehicle is built on the Volkswagen Crafter 50 XDR 2.0 TDI 130 kW 4×4 chassis and is configured for 1+1+7 people. Due to its size, it can also transport the necessary equipment for the crew, including ballistic shields, battering rams, and ballistic helmets. Additionally, the Crafter is equipped with a wire mesh system to protect against thrown objects. The mesh protecting the windshield can be folded over the driver's cabin, providing better visibility during long transfers.

All vehicles are equipped with strategically placed individual seats to provide officers with ample space to travel in heavy gear and, most importantly, to allow them to exit the vehicle quickly during an intervention. These unique vehicles are primarily intended for operations associated with demonstrations, sporting events, search missions, mass concerts, or other events requiring the intervention of specialized riot units. The first 28 Crafter vehicles were delivered to the police last year.


A specially modified Volkswagen Crafter

Additionally, the Czech Police plan to acquire specially modified vehicles for bomb disposal experts, police dog handlers, and forensic technicians. But more on that in the next issue.

Prepared by: Jaroslav Jonák
Author: Brig. Gen. Jaromír Bischof
Photos: Czech Police

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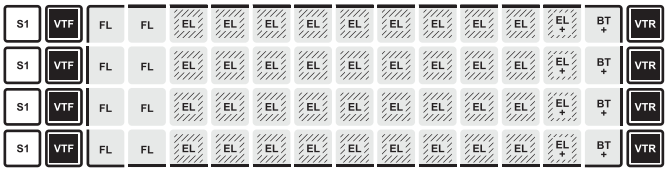
MSR OpenSpace

Diagram of the AD25 X4 OpenSpace shooting range



LEDIC MSR brings its own unique advanced solution of Modular Shooting Ranges based on a sophisticated and open system of connecting modules that can be transported using common means of transport. In this way, the most diverse possible range variants can be created to ensure a wide range of shooting training activities. Modular Shooting Ranges are intended for the army, police, other security forces and civil sector.

The concept of Modular Shooting Ranges as closed objects designed for different groups of users and their specific needs allows, by choosing the appropriate model, its ballistic resistance, the required shooting distance and the chosen level of equipment, to create a solution to meet the customer's individual training or commercial goals. All this while ensuring maximum safety, a hygienically sound and comfortable environment, continuous year-round operation and meeting high demands on noise protection measures.

The MSR OpenSpace concept ensures a shooting range space without any obstacles and thus enables the widest possible range of shooting and training activities without any restrictions. If necessary or desired by the customer, the interior space of the shooting range can be divided into separate areas operable shooting sections – each with a width of up to 10 m and essentially unlimited distance, different features and equipment. The concept also allows for the eventual relocation of the shooting range, its expansion or change of configuration. The requirements for the location of the shooting range are minimal.

The solution is designed to achieve minimal fixed operating costs, enable self-service, remote management and monitoring, and ensure a long service life. The solution is also open for additional upgrade with training and control technologies and functions.

When choosing a Modular Shooting Range, the main criteria are only the required types of training, the power of ammunition and weapons, the shooting distance, the capacity and mode of operation of the range, the choice of the target system and other elements of the range's equipment.

Modules

VTF	VTR	EL	EL+	FL	BT+	S1
Ventilation Front	Ventilation Rear	Extension Large	Extension Large Plus	Fire Line Large	Bullet Trap Plus	Sector

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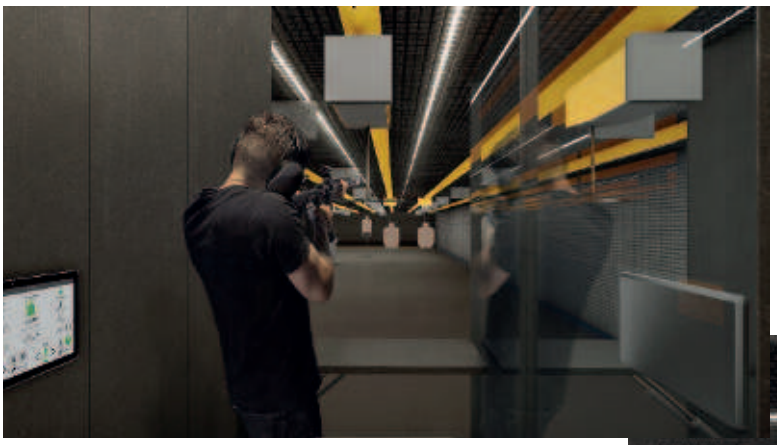

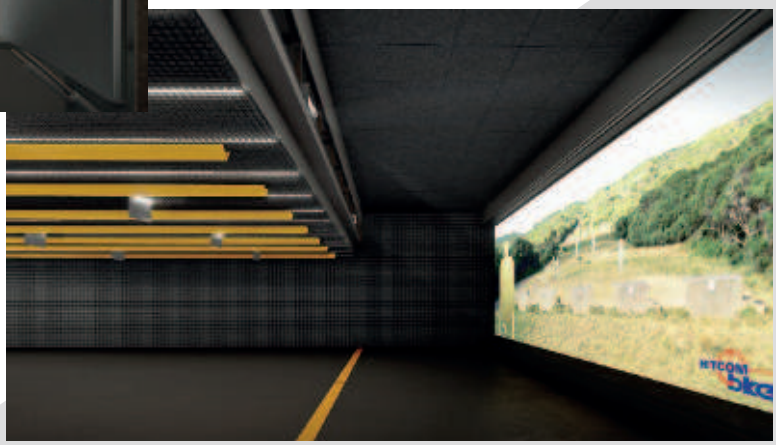

Defined parameters of shooting sections

sectors	floors	m	stands	balistics	E_0J	E_0J	standard	shots/ day	pillars
31	1	25	8	E	4 000	3 000	STA	10 000	NO

The MSR OpenSpace shooting range can be equipped with a target system from bke HITCOM GmbH, our partner in the field of target systems.

You can find more about the MSR OpenSpace concept at ***www.ledicmsr.cz*** *and in the promotional video on our YouTube channel here:* ***https://youtube/CvRJagc3Ef8***

Book your appointment for an individual presentation and test shooting at the Křeč Shooting Range, our company testing center, on the portal ***www.lscenter.cz****.*

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OPTOKON VISION: FUTURE EXPANSION PLANS

We are excited to unveil our OPTOKON Vision, a comprehensive showcase of our future expansion plans through impressive 3D renders. This visionary project highlights our commitment to growth and innovation, illustrating how we plan to expand our facilities to enhance capacity, storage, security, and the development of new products.

The 3D render provides a detailed visualization of our proposed building expansions, focusing on increasing our production capacity, improving storage solutions, and bolstering security measures. These new structures will support our operational growth, ensuring the highest standards of safety and efficiency. Additionally, OPTOKON Vision outlines our strategy for developing new products that will drive future advancements in the fiber optics industry.

The OPTOKON Vision reflects our strategic focus on growth and our dedication to maintaining a leading position in the fiber optics industry. We are committed to creating a world-class environment that supports our team, drives innovation, and delivers exceptional value to our customers.

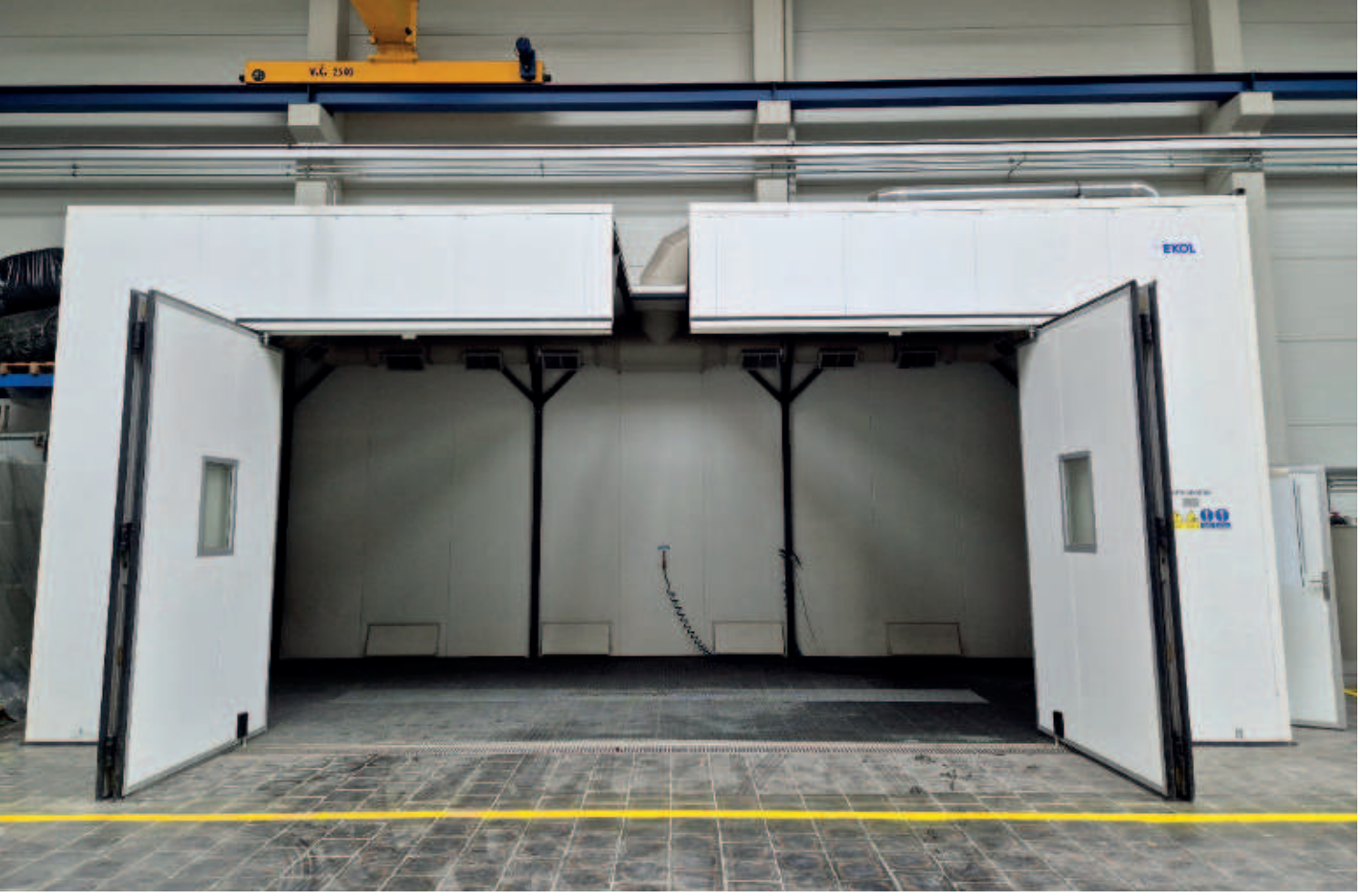
OPTOKON Hosts Technical SummIT Event

We are thrilled to share the highlights from our recent Technical SummIT event, which marked a significant milestone—OPTOKON's 33rd anniversary. Held with great enthusiasm and participation, the event was a remarkable gathering of industry professionals, partners, and technical experts.

The Technical SummIT featured numerous technical presentations and engaging exhibition stands, showcasing our latest innovations and solutions. Attendees had the opportunity to explore our cutting-edge technology and interact with our experts, fostering a dynamic exchange of ideas and insights. As part of the event, attendees were treated to a guided tour of the historic town of Telč, led by the Mayor of Telč himself. This tour provided a delightful glimpse into the rich history and culture of the town. We extend our sincere thanks to the Mayor for making this experience possible and adding a special touch to our celebration.

A significant highlight of the event was the solidification of our relations with SENKO and LEMO, further strengthening our industry partnerships. These alliances are a testament to our commitment to delivering robust and high-performance solutions. Additionally, we solemnly signed a Distributorship Agreement with the company MultiMedia Axess from Germany and Canada, marking a new chapter in our journey and paving the way for expanded collaborations and growth.

The celebration concluded with a splendid Gala dinner, bringing together industry professionals and partners for an evening of networking and celebration. The dinner provided a perfect setting to reflect on our achievements and discuss future opportunities, all while enjoying a delightful culinary experience.



MODERN PAINTING BY AGADOS

AGADOS, based in the Vysočina region in Velké Meziříčí, is a traditional Czech brand that has been manufacturing trailers since 1992. During more than thirty years of its existence, it has developed into one of the largest domestic trailer manufacturers and established itself as one of the European market leaders in the categories up to 750 kg and up to 3,500 kg. The company offers a wide range of braked and unbraked trailers in different sizes and variants, which differ not only in the materials used but also in the possibilities of use. Agados' product range includes simple trailers, motorcycle and car transporters, box trailers and professional trailers with lengths of up to 10 metres. Perfect craftsmanship and product quality are a matter of course for AGADOS, which is reflected in high customer satisfaction. The company sells approximately 20,000 trailers annually, more than half of which are sold outside the Czech Republic.

AGADOS Paint Shop

Not many people know that AGADOS offers not only top-quality trailers but also painting services. The paint shop is equipped with modern technology for wet painting and includes a comprehensive surface treatment, which ensures high quality and long life of the final finish. Located on-site, the paint shop ensures smooth operation and precise inspection of the painted items. The paint shop offers a total of 3 boxes, namely a 9,100×4,000 mm **phosphating box** that offers a degreasing and phosphating service, which is essential for surface preparation before further finishes. Phosphating ensures that the surface is perfectly clean and ready for the next steps of the process. This significantly increases the durability and life of the paintwork. In addition, the 14,000×4,300 mm **sandblasting box** carries out surface treatment prior to painting so that the material structure adheres better to the paint. Sandblasting is key to ensuring optimum adhesion of the paint to the surface, achieving excellent results in both aesthetics and durability. And finally, the **paint box** measuring 14,000×4,300 mm, the wet painting box provides a high level of protection and aesthetic appeal to the final product. Thanks to modern technology, it is possible to achieve even paint application and a perfect result.

agados

Wide range of applications

AGADOS can be used for a variety of purposes:

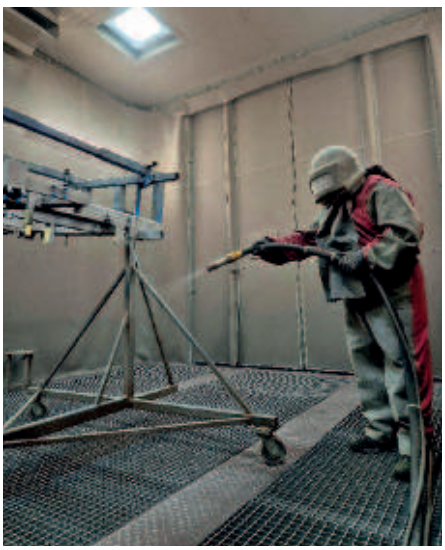
- **Military equipment:** The paint shop is able to handle even the most demanding specifications and ensure that products are durable and reliable in extreme conditions.
- **Automotive:** Painting of bodywork, spare parts and accessories. The high quality of the paintwork extends the life of automotive parts and improves their aesthetic appearance.
- **Construction machinery:** Protective and decorative coatings for construction machinery, cranes, excavators and other equipment. Painting provides protection against corrosion and mechanical wear, extending the life of the equipment.
- Painting of tractors, combines and other **agricultural equipment**. High-quality coatings provide protection against adverse weather conditions and intensive use in field conditions.
- **Industrial equipment:** This increases durability and reduces maintenance costs.
- **Furniture industry:** Decorative and protective coatings for metal and wooden furniture. Painting ensures the aesthetic appearance and longevity of furniture.
- **Metal structures:** Protection and aesthetic finishing of metal structures such as bridges, halls and others. Coatings provide corrosion protection and extend the life of structures.
- **Electrical appliances:** Surface treatment of electrical appliance covers and components. Quality painting improves the appearance and durability of electrical appliances.
- **Bicycle frames and parts:** Painting provides protection against corrosion and mechanical damage, while improving the aesthetic appearance of bicycles.

Special AGAHELP program

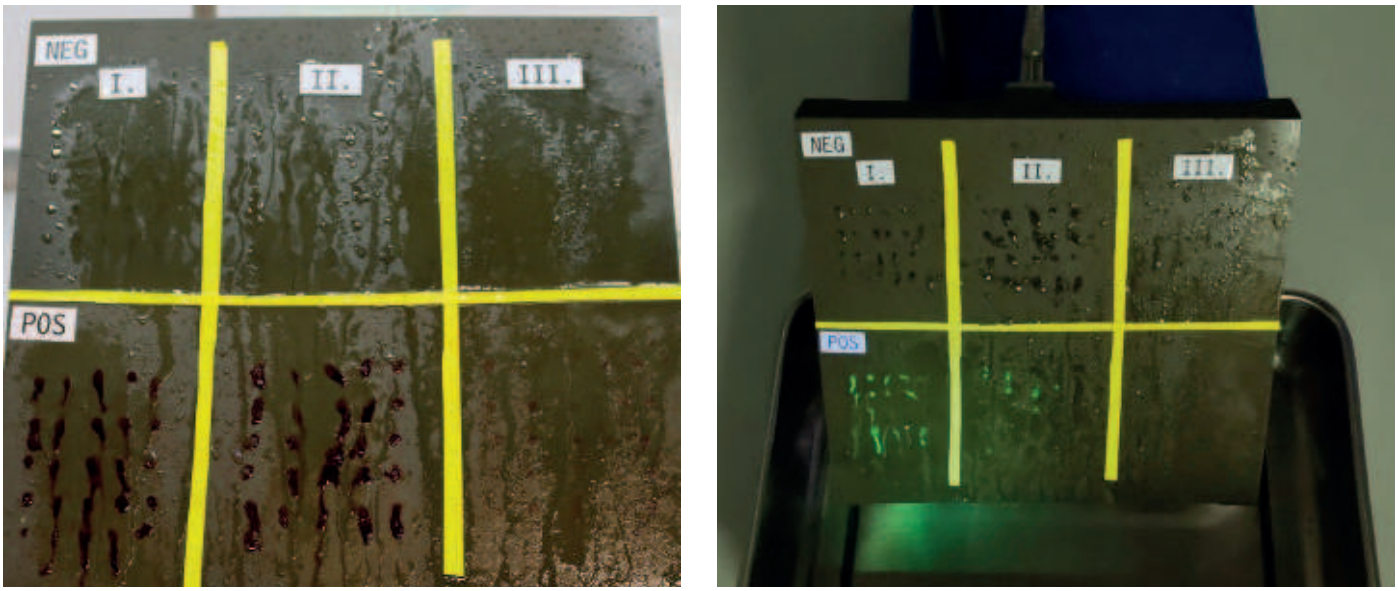
The AGADOS paint shop is used mainly for the military program, where special AGAHELP trailers are painted. These include mobile field kitchens, amphibious off-road trailers, equipment for illuminating the handling area in field conditions, a water treatment plants and a drinking water tanks, which can be used not only during natural disasters. From 2023, the paint shop is also used to paint the chassis under the mobile diesel generators and now, from 2024, to paint the refrigerating and freezing trailers.

AGADOS is constantly innovating and expanding its services to offer customers the best products and services. For more information, please visit **www.agados.cz**.

Author and photo: Kateřina Ostrá



Vojenský výzkumný ústav, s. p.



Verification of the IDEVYC mechanism with visualization by color reaction (left) or by fluorescent marker (right).

THE MILITARY RESEARCH INSTITUTE

AND ITS CURRENT ROLE IN THE ARMAMENTS OF THE ARMY OF THE CZECH REPUBLIC AND IN THE EDF

The Military Research Institute (VVÚ) is a state-owned enterprise established by the Ministry of Defence of the Czech Republic in 2012. It is a research organisation and the National Authority in approximately 20 sub-disciplines with respect to the alliance standardisation. Its main mission is research, experimental development, expert support, special services and the implementation of projects, including strategic deliveries for military and security applications. The technical competences of the Institute are focused on military and security aspects of protection in chemical, biological and radiation protection, special electronics and camouflage, and material engineering with the systems and technologies of ballistic and explosion protection of military equipment.

A significant part of the Institute´s services and activities portfolio includes the Centre of Testing which is an accredited testing laboratory No. 1449.

The Institute´s product portfolio is coordinated by the corporate strategy and includes research, development and the product implementation with the Army of the Czech Republic as the end user.

Current projects in the field of applied research

Attention in research is currently focused on new methods of decontamination. The **DEPLAZ** project studies new technologies that solve the issues related to decontamination and disinfection of highly sensitive equipment. The device uses the non-thermal plasma technology that enables the decomposition of high toxic chemicals, including CWAs, with high efficiency.

Another project solved by the Institute is the decontamination mixtures quality indicator – **IDEVYC**. The purpose of the device is to indicate the decontamination efficiency during training and to provide the trainees with a quick assessment of whether the decontamination process has been properly performed.

A significant project for the needs of the Army of the Czech Republic is the Verification of 3D print technology for the preparation of spare parts of ground military equipment – **3D PRINT**. The project is currently in the phase of the verification of structural and mechanical properties of the produced parts and the comparison with the properties of original parts manufactured by standard engineering technologies.

Current projects in the field of experimental development

For the needs of the Chemical Corps specialists, the following projects are solved: the

LOV V sampling and transport vehicle for the SIBCRA team, the development of the transport container of the **AL-4CH analytical chemical laboratory**, the development of the transport container of the **ALARAD 25 radiometric and radiochemical laboratory**. The development of a new joint-service military **protective mask model 25** is near completion. The new set of the OM-25 gas mask will thus replace the OM-90 mask currently in use which has been in the Czech army service since 1998 and is already morally and technically obsolete.

In 2023, the development of DAPH detector (the DENPL-V project) for high sensitivity detection of nerve agents was successfully completed. The detector has been introduced into the equipment of the Army of the Czech Republic and makes it possible to replace the GSA-12 detector of Russian origin. The detector was exhibited at the International Defence and Security Technologies Fair IDET 2023 and won the Golden IDET award.

Other projects are focused on the material research and the development of means for passive ballistic protection of critical infrastructure and vehicles intended for the needs of state security services. The following projects are supported by the TREND programme of the Technological Agency of the Czech Republic: The **PROVAK** project – means for ballistic protection enhancement of vehicles and critical infrastructure, the **OBALY** (PACKAGING MATERIALS) project – Advanced packaging materials for tank and artillery ammunition, and the **EXCEEDER** project – Development of explosion protection of vehicles implemented by means of additive manufacturing. This project focuses on the research and development of explosion protection components of integrated rescue system vehicles, military and emergency vehicles. The main outputs of the project are the elements of deformation structured members (floors and seats) intended to absorb mechanical impact energy. These two elements are designed for additive manufacturing.

Current project of the European Defence Fund

The Institute is a member of the international consortium of researchers in two projects – **NANOSHIELD and COMMANDS**. The goal of the NANOSHIELD project is to develop membranes based on nanofibers that will be activated for filtration of harmful chemicals, biological pathogens and protection against radiation (mobile phones, etc.) and nuclear radiation (alpha, beta). The Institute performs testing of the materials developed for the protection against chemical and radioactive agents.

The Institute participates in the COMMANDS project by an innovated system of active protection in relation to the advanced active protection system which was developed for the Army of the Czech Republic on the PANDUR 8×8 vehicle platform.

The most important contracts the Institute has fulfilled for the Army of the Czech Republic recently

A significant contract fulfilled by the Institute for the needs of the Army of the Czech Republic is the provision of a technical assistance in solving the issues related to the **temporary protection and storage of ground equipment and material**. Then, they are **coating systems for the protection of ground military equipment**, where the Testing Laboratory of Climatic and Corrosive Resistance verifies the parameters in accordance with the Czech Defence Standards ČOS 801001, ČOS 801007, ČOS 801006 and ČOS 801008.

The development, manufacture, delivery and support for the service life cycle of 40 pairs (i.e. 80 pcs of vehicles) of the **SLOV-CBRN and LOV-CBRN II** light armoured vehicles for chemical specialists of the Army of the Czech Republic (strategic contract). The last pair of vehicles was handed over to the Army of the Czech Republic on 25th July 2023. A number of Czech defence industry companies significantly participated in the contract (e.g. Praga-Export, MEDTEC-VOP, LTR and the like) as well as the Military Technical Institute, state-owned enterprise. It was the largest ever cooperation among the state-owned enterprises established by the Ministry of Defence of the Czech Republic.

The awarded exhibit "High Sensitivity Detector of Nerve Agents" and the Golden IDET award in the hands of the project manager Dipl. Eng. Kamila Vymazalová, at the 17th International Defence and Security Technologies Fair IDET 2023

The Military Research Institute, state-owned enterprise, successfully completed the implementation of another strategic contract **STARKOM** in 2024. A total of 8 vehicles of STARKOM communication jammers equipped with the state-of-the-art and sophisticated technologies were handed over to the Army of the Czech Republic. A number of Czech defence industry companies[1] were also significantly involved in this contract. The STARKOM communication jammer was exhibited at the 17th International Defence and Security Technologies Fair IDET 2023 and the Institute, together with the Army of the Czech Republic, won the Golden IDET award.

Author: Libor Švec
Photo: VVÚ, s. p.

[1] Apart from the Military Research Institute, state-owned enterprise, as the general contractor, a series of other companies like URC Systems, spol. s r. o., TATRA TRUCKS a. s., TATRA DEFENCE VEHICLE a. s., MOLPIR GROUP CZ, a. s., SEFOR Solutions, s. r. o., RAMET a. s., QUITTNER & SCHIMEK s. r. o. significantly participated in its manufacture as the sub-contractors of material components

WITH THE DIRECTOR OF VTÚ s. p. ABOUT THE CURRENT MAIN TASKS

The Military Technical Institute is a state enterprise established by the Ministry of Defence of the Czech Republic on 1 September 2012. It has consistently demonstrated very good professional interdependence of defence research, development and innovation with the production sector, both in strategic projects within the framework of international cooperation and in other technical projects for the benefit of the Ministry of Defence or other entities. We asked the Director of VTÚ s. p. Dipl. Eng. Jiří Kašpárek.

Mr. Director, the Military Technical Institute undergoes certain organizational and personnel changes quite regularly. You are a long-time employee of the Institute and you became its Director in February 2023. Can you briefly summarise the organisational and personnel changes implemented at the Technical Institute?

The year 2023 was a year of changes that we gradually implemented in order to positively influence the management of our state enterprise. All the changes were aimed at optimising overheads and adapting the structure of the company to the portfolio of products and services required by the MoD from the state enterprise to ensure the modernization of the Czech army and to meet its commitments to international organisations such as NATO and the EU.

From my point of view, it's a never-ending process. Our primary effort has been to "slim down" the headquarters of the state enterprise and to strengthen the ability of the spin-off plants to meet the needs of our customers. Clearly, the environment in which we operate is changing dynamically and we need to be able to respond to these changes. The positive effects of these measures are already evident in our annual report to VTÚ, s.p. and we expect their greatest impact to be felt in the years ahead.

You are a key state enterprise of the Ministry of Defence in the field of ground technology. What are currently among the core tasks of VTÚ, s. p.?

The field of ground technology is just one of the areas we provide for the benefit of the Ministry of Defence. The Military Technical Institute, s.p. plays an exceptional role in the defence security environment and through its activities maintains and further develops the strategic know-how of the Czech Republic in the development of, among others, weapons, ammunition, unmanned reconnaissance vehicles, aircraft on-board equipment, radio and airport technical security equipment, simulators, communication systems and related testing, verification and certification.

I personally consider the most important projects to be the SHORAD anti-aircraft system, which we are implementing with our foreign partners, medical modules, fire control system and workshop vehicles for the new CAESAR gun. However, due attention is also paid to other projects that are no less important for the development of the Czech Army's capabilities and for ensuring the defence and security of the Czech Republic.

How do you assess the professional capabilities of your three branch plants? Can you mention some of their key tasks?

I am convinced that all three branch plants are capable of fulfilling their professional focus. They have qualified and experienced personnel, which we consider to be our most valuable asset as a company. On the other hand, it is important to mention that in recent years it has not been easy to find qualified personnel with the right expertise on the labour market.

I consider our participation in the modernization projects of the Czech Armed Forces to be significant, such as the delivery of the air defence system, the delivery of workshop vehicles, and I would also like to mention the

project for the revision of 120 mm mortar rounds.

You have a number of test facilities. What tasks are they currently dealing with? Can these test facilities also be used by entities of the defence and security industry? Can you give examples?

The test facilities are open to customers across the defence and security industry, both from the Czech Republic and abroad. Our main customers include almost all armaments companies, including our sister state-owned enterprises. If I were to give specific examples, these include CSG, STV and COLT CZ holdings, among others.

The range of customers from the state administration is reportedly expanding, e.g. SSHR, Customs Administration, or the Prison Service. What can you say about this area?

The main activity of our company is oriented in accordance with the charter of incorporation, where the main customer is the founder, for whom we execute about 80 % of orders. We at VTU, s. p. try to offer our services outside the Ministry of Defence as much as possible. For example, we currently have a contract with the Czech National Library for the delivery of a special container, which is a unique mobile workplace designed for the rescue of library collections in war conditions or during natural disasters.

In 2018, a framework agreement was signed between the Ministry of Defence and VTÚ, the subject of which was the development of the operational and tactical command and control system of the Ground Forces of the Czech Armed Forces. How did you accomplish this task?

What you mentioned is another important area that we pay increased attention to at VTÚ, and where we strive to be a reliable partner for the Ministry of Defence. This task is long-term and will continue in the coming years. From my point of view, we have been able to successfully deliver as agreed with the customer.

The cooperation between VTÚ, s. p. and Úř OSK SOJ is traditional and necessary not only in the Ministry of Defence, but also towards the defence and security industry. How is this cooperation set up? Can you give some examples?

Yes, this is a cooperation that is absolutely necessary for deliveries to the MoD. Generally speaking, we try to communicate with the employees of the SOJ OSK and if there are any "friction points", we immediately solve them. From my point of view, this cooperation is more than good and works reliably.

Mr Director, it is clear from the portfolio of your institute that VTÚ has to fulfil many tasks arising mainly from the needs of the Ministry of Defence. Can you mention at least a few important tasks carried out under your management?

When I took office, I took over many projects already in the implementation phase. This is due to the fact that these are multi-year projects that started in the past under the previous management. The projects that started under my tenure include the two AN-25 aerial carrier kits, the MADR KIS project, the mortar round revision task, and the aforementioned workshop vehicles for the new CAESAR gun and medical modules.

We are on the threshold of the 2nd decade of the 1930s. Do you have at least a rough idea of what will be the core tasks of VTU, s. p. by 2030?

Since VTÚ, s. p. plays a key role in the functioning of the Czech army and ensuring the defence and security of the Czech Republic, it is necessary for the management of the state enterprise to proceed strategically, and therefore we have an idea of the key projects in the longer term. Some of the projects are already in the works and we expect that the conclusion of contracts will take place in the coming months. To be specific, in the month of July, a framework contract was signed for the supply of modern logistics equipment. In the same month, for example, a contract was signed for the revision of mortar rounds, which is for the years 2024–2027.

In conclusion, Mr. Director, I wish you every success in your work and at the same time I would like to ask if the professional public and we journalists will have the opportunity to see the exhibition of VTÚ, s.p. at the FFF 2024 in October at the Prague Exhibition Centre?

Thank you for your wish and for your question. I am pleased to confirm that we are planning our active participation at Future Forces Forum 2024, where there will be an opportunity to see our display of products and services that we develop within VTÚ, s. p. and in cooperation with our partners. The FFF provides us with the opportunity to present our unique capabilities to the target audience and to conduct a large number of business meetings in a relatively short time. Therefore, I would like to take this opportunity to invite everyone to our exhibition. We look forward to meeting you and are happy to be able to present our projects and results to a wide audience.

Author: Dipl. Eng. Petr Novotný
Photo: VTÚ s. p.

News in MIL and VG connector assembly

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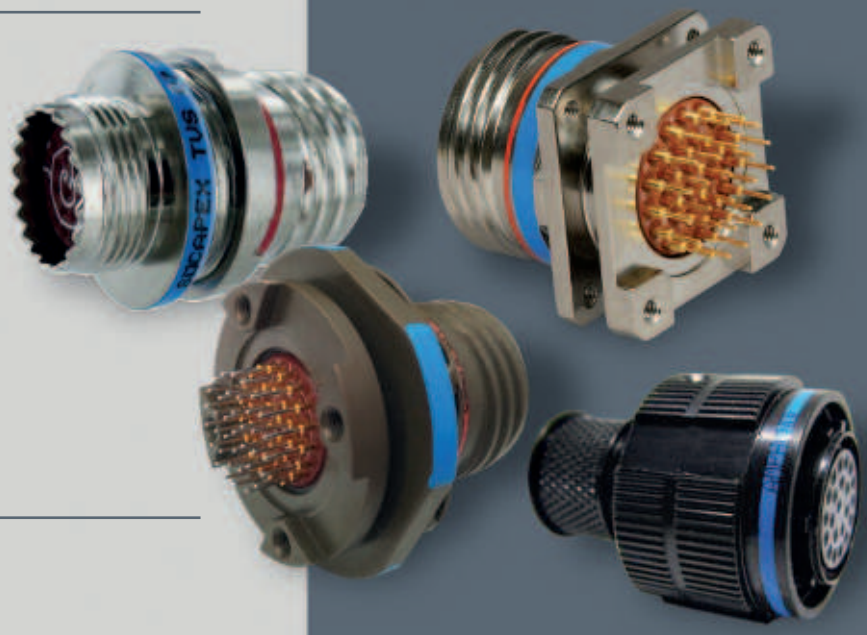

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RESCUE TRAILER IS A PARTNER OF FUTURE FORCES – THE COMPANY INTRODUCES NEW MODIFICATIONS

"Thanks to our excellent relationship with the organizers of the Future Forces exhibition, which is traditionally technically secured by our sister company, we will once again have an extensive exhibition where we will showcase new modifications of our tactical trailers," says Jakub Tomeš, Managing Director of the company.

It was at this exhibition in 2022 that the Rescue Trailer was officially introduced for the first time in its Extreme Folding Transport modification, which, thanks to its folding design, significantly eases transportation and storage of the trailer. Two years later, the company is introducing several new modifications, intended for both military use and emergency services. The anti-drone base, in particular, has gained the greatest attention. The conflict in Ukraine has highlighted not only the immense potential of drones but also the need for effective measures to detect, counter, and neutralize them. For technological equipment, the company has partnered with established specialists, enabling them to implement new technologies and respond to current needs. The anti-drone base, or more precisely trailer, is built on a solid, enclosed platform with ballistic protection, rather than the original folding design. In addition to technology and power sources, it is equipped with a 21-meter telescopic mast. With a combination of solar panels, methanol fuel cells, and an electric generator, it is fully autonomous, allowing deployment even in high-risk areas.

This year's fair will also feature the Rescue Trailer in the Forward operating base configuration for first responders, which can be specifically equipped for first aid, patient triage, or decontamination. The development of this modification once again involves trusted partners from the Czech Republic. This approach is the cornerstone of the company's manufacturing policy – the trailers must be easily producible from common materials, with supplies sourced from partners in the Czech Republic or the EU. Development and testing are always conducted in collaboration with relevant authorities to ensure the trailers meet current needs and are tailored to the users.

Another interesting project the company is working on involves trailer modifications for bomb disposal experts and divers, which are being developed based on the requirements of the Ukrainian army. "It's still in the study phase, but they are interested, so we are working on it," adds Jan Tomeš, the company's second co-founder and chief designer.

We will know the feedback on the new modifications by the end of October, when we will bring you more details on their design and equipment. The company is also planning further test drives and stress tests in the fall, so you can look forward to our report.

"We invite you to visit the Future Forces fair and see for yourself the potential of our innovative logistics solutions focused on light logistics. Our trailers can be towed by pickups, vans, or trucks. They offer faster response times than container trucks, better mobility, and, above all, lower costs. Additionally, you can fit equipment and technology in our trailers that won't fit in the existing vehicle fleet, and with certification, you can safely operate them on regular roads," conclude the Tomeš brothers, who will be presenting Rescue Trailer at the fair.

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and find out more about our tactical trailers

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MOBILE REPAIR RESOURCES, MATERIAL SUPPLIES, AND INFORMATION SUPPORT IN OPERATIONAL LOGISTICS

Operational logistics plays a crucial role in maintaining the combat readiness of military units. A vital aspect of this area is the execution of maintenance and repairs in field conditions, which is closely related to operational material supplies, including the provision of spare parts and consumables. This article focuses on the issues of mobile repair resources, operational material supplies, logistical information support, and the ability of current users to effectively use these information systems.

Mobile Repair Resources

In mid-July 2024, a contract was signed between the Czech Ministry of Defence and the Military Technical Institute, for the supply of mobile repair resources. Field repairs include locating non-operational equipment, diagnosing the extent of damage, and deciding whether to repair the equipment on-site or transport it for more extensive repairs. Many armies have established rules for carrying out repairs of equipment using both internal capabilities and services of civilian companies. Simple repairs are typically handled internally, while more complex repairs are entrusted to external specialists. Recent war conflicts have highlighted the need to carry out repairs at a safe distance from the front lines, out of the reach of enemy forces.

Field equipment repairs often require the ability to respond quickly to changing battlefield conditions. Mobile repair resources must be designed to offer maximum flexibility, protection, and speed in conducting repairs. This includes not only technical equipment but also highly qualified personnel capable of working under challenging conditions.

Operational Material Supplies

Effective maintenance and repairs of equipment require the availability of operational material supplies. These supplies must be distributed at the tactical level, among individual military organisational elements (such as battalions), and at higher levels, such as brigades and divisions. Central warehouses and selected organisational elements of the Armed Forces of the Czech Republic serve as storage sites for strategic supplies. The maintenance and repair system must be designed to include spare parts and consumables stored directly within the equipment, at organisational elements (repair platoons or companies), and at higher repair levels (battalions and repair bases). This ensures the availability of necessary material in various situations and conditions.

Operational material supplies are the cornerstone of successful logistical support for

military operations. Proper allocation and management of these supplies enable military units to maintain a high level of readiness and the ability to respond swiftly to unforeseen events on the battlefield.

Information Support

Today's logistics operations cannot be effectively managed without information support. The Logistics Information System (LIS) used by the Czech Ministry of Defence and the Armed Forces of the Czech Republic supports the dynamic creation, replenishment, and management of mobile supplies. Among other features, the system enables:

- Standardisation and cataloguing of material, integration with spare parts catalogues.
- Use of support tools for material handling.
- Overview of current stock levels across various organisational elements.
- Ability to allocate mobile supplies and manage strategic stockpiles.

An important function of the LIS is also the ability to establish rules for material storage, automatic replenishment, and interchangeability of key materials, which is crucial for dealing with equipment repairs. The LIS provides a comprehensive overview of stock levels and enables quick and efficient distribution of materials where they are most needed.

The LIS provides both a general and specific overview of the current status of operational supplies within the relevant organisational elements. This includes not only stationary facilities, such as warehouses, but also field organisational elements. The system also supports the creation of both real and virtual organisational elements, enabling efficient tactical and operational movement of material.

The Logistics Information System was developed in collaboration with foreign military logistics experts with extensive practical experience. However, it is essential that the current users, even after organisational changes, can fully use the system's potential. Effective use of the LIS involves not only technical knowledge but also consistent application of standardisation and the ability to manage operational material supplies.

The Logistics Information System is a key tool for ensuring the continuity and efficiency of logistics operations. Its implementation and proper use allow all organisational elements to maintain a high level of readiness and operational capability, which is essential for the successful conduct of military operations in today's dynamic environment.

* * *

Mobile repair resources and operational material supplies are crucial for maintaining the combat readiness of military units. The information support provided by the LIS enables efficient management of these activities. Users must be able to fully exploit the available information technologies and systems, which requires continuous education and application of acquired knowledge in practical use.

This article provides an overview of current challenges and potential solutions in the area of mobile repair resources and operational material supplies. Effective use of information support is undoubtedly crucial for the successful execution of maintenance and repairs in field conditions.

Text: Jaroslav Řeha & collective
Photo: ChatGPT Zdeněk Březovský, Bohuslav Hrubý, AURA archive

SUSTAINABLE MATERIALS HELPED US TO WIN A TENDER

Koutný has successfully won an international competition for Dutch customs officers. The key factor in this competition was the use of sustainable materials such as recycled polyester, RWS (Responsible Wool Standard) wool and organic cotton. Thanks to this tender and our sustainable approach, our company is now much closer to implementing ESG, setting decarbonisation goals and achieving circularity.

For almost 30 years, our traditional family company Koutný has been making uniforms for the emergency services, armed forces and administrative organisations of European and non-European countries. We pride ourselves on the high quality of our products and used materials as well as our flexibility of delivery and personal approach. In order to facilitate collaboration with other entities, we have joined the CLUTEX cluster. As a result, we have become one of the most reliable suppliers of formal and field uniforms, special-purpose combat clothing, overalls, waistcoats, suits, jackets, trousers and many other products. All orders are realised with the greatest possible care in batches both large and small. We hold the ISO 9001:2009 and AQAP 2110 quality certificates and are currently preparing for certification under ISO 14001:2015. In 2023, our company installed photovoltaic panels on all its buildings.

We make formal and field uniforms that are crease-resistant yet comfortable to the touch, made of high quality materials from Italy, France and Spain.

The list of our customers includes Police of the Czech Republic, Forest Service of the Czech Republic, Fire Brigades of the Czech Republic, Prison Service of the Czech Republic, Customs Administration of the Czech Republic, the Czech Army, Dutch Army, Austrian Army, the Prague Castle Guard, Customs Administration of the Netherlands, Prague Airport, Czech Airlines etc. We also produce classic menswear. We sell men's ready-to-wear and made-to-measure suits through our own stores in the Czech Republic. Under the Koutný GREEN brand, we also sell environmentally friendly suits containing recycled polyester.

GRENADES FOR THE ARMED FORCES NEW HAND GRENADES CZECH PRODUCTION

As a traditional Czech manufacturer of ammunition and pyrotechnics, ZEVETA AMMUNITION a. s. is constantly developing new products and innovating existing ones. It has currently completed development work on the modernization of hand grenades, including the development of a new igniter so that the user receives a modern means of tactical use that meets all current trends in the field of hand grenades.

Emphasis is placed especially on ZEVETA's ability to produce all parts of a hand grenade, including the initiation chain, self-help and under its own direction, thus providing the Czech Republic with the opportunity to bring back to life the independent and original production of hand grenades after a long time. Mastering the production of all parts of the hand grenade by ZEVETA without the need for subcontracting from abroad means that it is a purely Czech product produced by a traditional Czech manufacturer with more than 86 years of tradition and experience in the production of ammunition, including hand grenades. ZEVETA is once again able to offer a competitive hand grenade, which will also compete with foreign manufacturers in terms of its price.

Structurally, the new igniter consists of a lever-type throw fuse, which is secured by a transport safety pin. The igniter has a time function with a standard delay interval of 3 to 5 seconds, which can be set at the factory at the customer's request, thus preparing a customized igniter. The removal of the switch and impact mode greatly simplified the entire igniter and thus the use of the hand grenade. Hand grenades are intended to be thrown from the user's hand and are therefore designed in such a way that manipulation with them meets the normal handling and safety standards for this type of ammunition, i. e. security against unwanted initiation during handling and at the moment of readiness for use.

The new hand grenade is marked as HG-22/3.5 and will be produced in several basic variants:

- **The HGF-22/3.5 fragmentation hand grenade** is a hand-thrown infantry grenade intended for use during offensive operations against soft targets. HGF is an assault grenade with a plastic outer shell with ridges for better grip. The body of the grenade is filled with an explosive charge that is surrounded by steel balls. When the grenade explodes, it creates an overpressure and a shock wave, which are combined with the effect of small steel balls acting as shrapnel.

- **The HGO-22/3.5 assault hand grenade** is a hand-thrown infantry grenade intended for use during assault operations in built-up areas. HGO is an assault grenade with a plastic outer shell with ridges for better grip. The body of the grenade is filled with an explosive charge. The grenade creates overpressure and a shock wave.

- **The HGT-22/3.5 thermobaric hand grenade** is a hand-thrown infantry grenade with an increased pressure and heat effect, intended for use during offensive operations in built-up areas. During development, the effect of the thermobaric grenade filling was tested and tested against standard TNT, which is commonly used for the production of hand grenades, and the result is a composition with an effect of 170–180 % of the equivalent amount of TNT, i. e. almost twice as much as TNT.

The portfolio of hand grenades is also supplemented with reduced, training and practice versions so that the user is provided with a complete program for training and using these devices.

THE DIFFICULT MISSION OF THE FOURTH DUTCH AT THE HEAD OF THE NORTH ATLANTIC ALLIANCE

Norwegian, Jens Stoltenberg, who headed NATO for ten years, will be replaced by former Prime Minister of the Netherlands, Mark Rutte. He will be the fourth Dutch to hold the highest alliance post. It is certainly an interesting, but perhaps not entirely surprising phenomenon.

Strongly fragmented Dutch politics, where it is not easy to form a coalition, to find intersections and compromises between political parties, also requires tedious political negotiations. A politician who can do it is also destined to manage such a giant organization, which the Alliance undoubtedly is. And Rutte was the Prime Minister for fourteen years.

Balancing the conflicting interests of the members, solving a whole series of major and minor crises and, at the same time, finding common political denominators to preserve transatlantic unity requires considerable political skill. It cannot be overlooked that the Netherlands is a big supporter of transatlantic policy and cooperation with the United States. It is more reserved towards the idea of European defence autonomy, which is strongly promoted by French President, Emmanuel Macron.

But Rutte will not get a hundred days of defending when he starts in his Brussels office. The seasoned politician faces a number of tough challenges. First of all, they have to take into account the potential return of Donald Trump to the White House, which could be a difficult test for the Alliance.

Trump shows a certain mistrust of NATO, as it does not completely fit into his America First concept. He showed his antipathy towards the Alliance already in his first term of office, and now information is leaking from his expert background about his intentions to weaken American commitments to European allies because their fulfilment is too costly for the United States. The possible future US president also has a different view of the solution to the War in Ukraine. The idea of freezing the conflict on the current front line and starting peace negotiations with Russia, along with considerations that it may get Donbas and Crimea, will be hard to please most of the European allies. According to Philip Dickinson, an expert at the Atlantic Council, Rutte is a very skilful negotiator who knows how to communicate with Trump.

Russia's War against Ukraine and its effect on the functioning of the alliance will undoubtedly dominate his first term. It will influence the further direction of NATO, which must cope with the fundamental transformation of the security environment in Europe. It is also impossible to avoid the burning issue of further increasing the defence spending of the allied countries at a time when many of them have to deal with serious domestic economic problems. There is more and more talk about the fact that the declared two percent of GDP may not be enough, but even more "guns instead of butter" can cause significant social tensions.

The new Secretary General will have to manage the alliance at a time when there are serious political shifts and upheavals in several European countries, the weakening of traditional political parties and forces, the strengthening of nationalists and the extreme right, as shown by the elections to the European Parliament in June 2024. Finding common ground with new political leaders emerging from national elections in European countries can be difficult. It is thus possible that Rutte will have the most difficult mission of all post-Cold War general secretaries.

Author: Miloš Balabán, the Chairman of the Prague Security Conference
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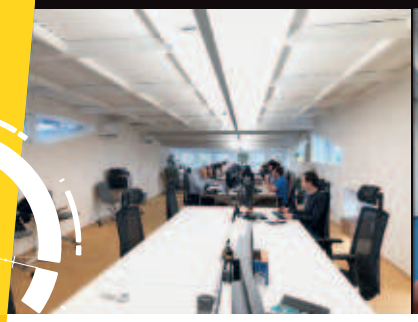

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ERA WILL COOPERATE WITH DIEHL DEFENCE ON PASSIVE SURVEILLANCE SYSTEMS AND MULTI-SENSOR TRACKING CAPABILITIES FOR GBAD

ERA has signed a Memorandum of Understanding (MoU) with the German company Diehl Defence on cooperation in the field of passive surveillance systems and multi-sensor tracking capabilities for Diehl's ground-based air defence systems (GBAD) as part of the ILA Airshow in Berlin, Germany, on 6 June 2024.

Ondřej Chlost, ERA CEO and the Chairman of ERA Board of Directors, Helmut Rauch, CEO of Diehl Defence, Jakub Thomas, Commercial Director of ERA, and Torsten Cook, Senior Vice President Business Unit Ground-Based Air Defence of Diehl Defence, signed the MoU document on the occasion of the ILA Airshow, during a ceremony at the Diehl Defence stand. ERA personnel are also co-staffing the Diehl Defence display of GBAD systems in the Defence Park on the event premises.

The MoU foresees the intentions of both companies to complement the Diehl Defence GBAD systems, primarily IRIS-T SLM, with ERA's world-leading Passive ESM Tracker (PET). Access to another ERA product, ERIS Multi-Sensor Tracker (MST), will allow for real-time data fusion of data for active and passive systems. GBAD is one of PET's battle proven cases (two additional being Air Surveillance and Electromagnetic Warfare). Thanks to supremacy in real-time detection, tracking and identification of airborne targets (fast movers, UAVs) in the airborne domain, a passive sensor plays a vital role in complementing active sensors in GBAD, otherwise vulnerable against electronic (EW) countermeasures.

According to the MoU, both companies will assist each other in marketing efforts with multi-sensor-capable and passive-sensor-enabled GBAD systems. The availability of ERA components in the modular IRIS-T SLM architecture will provide customers with additional options for their individual configurations, providing Diehl Defence with a wider market potential. This will be of particular interest to nations, which participate in the European Sky Shield Initiative (ESSI).

ERA WILL SUPPLY VERA-NG SYSTEM TO THE ARMED FORCES OF MOLDOVA UNDER THE EU INITIATIVE EUROPEAN PEACE FACILITY

The Czech company ERA and the Estonian Centre for Defence Investments (ECDI) have facilitated a crucial project under the European Peace Facility (EPF) initiative for the Moldavian Ministry of Defence. The supply of one of the VERA-NG passive surveillance systems by ERA aims at bolstering the defence capabilities of the Republic of Moldova, with a focus on enhancing its Air Defence and Air Surveillance capabilities.

The original Czech and unique worldwide system PET VERA-NG (in NATO terminology Passive ESM Tracker) is supposed to serve as a cornerstone for the planned comprehensive defence of the state of Moldova. It is designed to integrate seamlessly with other defence solutions and this integration will significantly elevate the country's ability to monitor and protect its airspace.

VERA-NG is the only battle proven passive surveillance system capable of solving different use cases at the same time: Air Surveillance, Ground Based Air Defence and Electronic Warfare. It is designed for detection, localization, tracking and identification of air, ground, and naval targets, based on pulse as well as continuous wave signal analysis. The system emits zero electromagnetic energy making it 'invisible' to adversaries, effectively seeing without being seen.

"All European Union projects aimed at Moldova support the development of their defence capabilities and increase cooperation between us. As the implementer of this project, we are pleased that we can contribute our experience and knowledge in procuring air surveillance and communication systems, armoured vehicles, and various combat vehicles," said Magnus-Valdemar Saar, Director of ECDI.

This project represents a significant milestone in the ongoing efforts of the European Union to support countries in strengthening their defence capabilities. "By leveraging cutting-edge technologies and strategic partnerships, we are contributing to a safer and more secure world," stated Ondřej Chlost, ERA CEO.

MBDA AND UK MOD RENEW COMPLEX WEAPONS PARTNERSHIP

MBDA and the UK Ministry of Defence have renewed their strategic partnership on complex weapons for a further decade, with a renewed Portfolio Management Agreement (PMA). Known as PMA2 and worth at least £6.5 billion, the agreement will deliver battle winning complex weapons to the UK Armed Forces faster, at lower cost and with greater agility. PMA2 will also support British jobs, skills and industrial investment.

Eric Beranger, CEO of MBDA, said: "PMA2 underlines the excellent work done by our colleagues to innovatively support the UK, acting as both a key sovereign national champion and as a conduit for international co-operation across our group and worldwide."

Chris Allam, Managing Director of MBDA UK, said: "Renewing the MOD-MBDA partnership for a further decade underscores our role as a critical national asset supporting UK Defence. PMA2 will build upon the many successes of the past decade while delivering enhanced value, speed and agility for the UK Armed Forces and enabling better collaboration with our allies across Europe."

The new agreement confirms MBDA as the MOD's preferred supplier of complex weapons. Its framework will drive a further £2 billion in benefits and efficiencies while enhancing current capabilities. The new agreement also is anticipated to deliver new systems such as the Future Cruise and Anti-Ship Weapon (FC/ASW), Land Precision Strike and continue the evolution of Meteor.

The PMA2 incorporates a decade of learning into the running of the complex weapons portfolio. It includes a number of measures to enhance performance including, improved commercial agreements, acceleration of procurement processes and enabling 'always-on' manufacturing. It will hold industry at a high state of readiness to respond to the demands of Defence.

The original PMA secured a strong and innovative British industrial base. While providing the UK with the freedom of action to respond to conflicts on its own terms, the original PMA also produced confirmed savings of £2.6 billion. With the UK seen as a strong partner, the original PMA also supported international collaborations and saw UK exports grow by 6.5 times.

Today more than 5,500 people work at MBDA UK sites in the North-West, East and the South-West of England. Nearly doubling the workforce since 2010. MBDA's work also supports thousands of further jobs in the eco-system of its UK's supply chain. The value of the PMA model has enabled MBDA to invest over £550 million in the UK, including a new manufacturing site in Bolton. PMA2 will see a further £500 million of MBDA investment in British manufacturing and technologies.

About MBDA

MBDA is a unique multi-national European group, a world-leader in the field of complex weapon systems, playing a key role in keeping nations safe. Created in the spirit of international co-operation, MBDA and its 14,000+ employees work together to support the national sovereignty of France, Germany, Italy, Spain and the UK, and their allies worldwide. As an accelerator for innovation, MBDA is the only European group capable of designing and manufacturing complex weapons to meet the full range of current and future operational requirements of the three armed forces (land, sea and air). Airbus (37.5 %), BAE Systems (37.5 %) and Leonardo (25 %) jointly own MBDA.

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Armoured vehicle MARS 4x4 produced by SVOS Přelouč

MARS (**M**ulti-role **AR**mored **S**ystem) is the latest generation of armoured vehicles from the SVOS. SVOS Přelouč presented this latest model of armoured vehicle in 2022 at the Eurosatory international exhibition in a world premiere conceptually as a completely new combat vehicle.

At **SVOS**, they have been working on the development of the MARS 4x4 for several years and have incorporated many innovative features into its design. These include, for example, a chassis solution of the construction, which enables the ground clearance adjustment not only of the whole vehicle while driving without the need to stop, but also the individual adjusting of the height of vehicle each chassis wheel separately for the needs of the accurate shooting tilt. The MARS 4x4 combat vehicle has more an optional steerable rear axle, which enables a low turning radius of 6 m. The chassis platform is equipped with the so-called "Crab" system, when the vehicle can drive diagonally by turning all four wheels. In addition to these specialized innovations, the MARS 4x4 has the excellent ballistic and anti-mine protection based on the company's long-term experience. The chassis is designed for different types of superstructures and, regardless of them, will ensure high cross-country ability and operational reliability. MARS vehicles can also be configured in different levels of ballistic protection.

The modular concept of the **MARS 4x4** vehicle enables the creation of superstructures for many versions. One of them is a version with a fully armoured large-volume cab and a large-volume rear vehicle compartment for placing all the necessary equipment and materials, including a set of four rocket launchers. The Swedish company SAAB Dynamics opted this version when integrating the new triple launcher of the RBS-70NG anti-aircraft system. The multi-launcher vehicle, denoted by the English abbreviation MFU (Mobile Fire Unit) has successfully completed functional tests in Sweden by sharp firing of anti-aircraft missiles at various selected targets both low on the ground (mock-up of a flying helicopter) and in the air (a drone with explosives and an air bag with explosives towed behind the plane).

The **MARS 4x4** vehicle is completely manufactured in SVOS Přelouč and fully uses main aggregates such as the engine or gearbox introduced into the alliance system with the appropriate NSN codes, while these units are introduced and proven on battlefield in other vehicle platforms used by various NATO armies.

Vehicles of the **MARS 4x4** series represent a highly modern platform that benefits from a long-term, more than 30-year experience of the SVOS company in the development, production and operation of armoured vehicles. It offers modular military vehicles with the possibility of integrating various superstructures according to customer requirements, as can be seen on the specific example of the integration of the MSHORAD anti-aircraft system.

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