#03

TACTICA magazine

Special Action Service Bucharest

Faces of Romania. A Serviceman's portrait

Thermobaric ammunition

1 December 2013

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TACTICA Magazine is an online publication dedicated to those working in the Military, Law Enforcement and Emergency Services. TACTICA Magazine appears once every two months and is distributed on a subscription basis.

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Under the sign of the new

At the passing of the years, the number 3 of the magazine is under the sign of the new. It's our first New Year!

Then there are the topics covered in this issue, each bringing something new. The best example is the material dedicated to National Day, an event full of premieres: the biggest parade on December 1, marking 95 years since the Union of the Principate. For the first time, soldiers from France, Poland, Turkey and the United States of America took part in the parade. We could also see the replica of the Vlaicu II plane and the Dacia Duster military vehicle, equipped with a remote-controlled AGIL762 firing platform. Our "expensive" Dacia, in the Army version, was the star of the parade, Dacia Duster 1.5 dCi 110 HP 4x4, being the prototype resulting from a three-year collaboration between representatives of Dacia, Uzina Mecanică București, Electro Bit and specialists from within the Armaments Department of the Ministry of National Defense.

Another beginning was marked in Deveselu, with the start of the construction works at the Anti-Missile Facility within the Military Base near the village.

Although it is not a novelty, the thermobaric weapon brings a new element to the magazine through the video presentation, which gives you the opportunity to see the effect that this weapon has on its targets.

The magazine ends with a 2014 calendar in an electronic format that you can download and use on your computer, phone, tablet and other such devices.

I end with good wishes, a New Year full of achievements, professional and personal, joys, health and accomplishments on all levels.

Happy Holidays and Happy New Year!

Marcella Dragan

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Start of construction works at the Anti-Missile Facility within the Deveselu Military Base

On October 28, 2013, the ceremony marking the start of the main construction works at the Anti-Missile Facility that will operate in this Romanian military base took place within the Deveselu Military Base. One of the most important moments of the Romania-US bilateral collaboration, the event reconfirmed the commitment of Romania and the United States to participate in the NATO missile defense system. The start of construction works is a reference point in the implementation of Phase II of the European Phased Adaptive Approach (E.P.A.A.) is the U.S. European Ballistic Missile Defense System. The Deveselu base will become operational in 2015, which will allow the extension of protection on the allied territory in Europe against short and medium-range ballistic missile threats, which could come from the Middle East.

photo: Marcella Drăgan

The U.S. delegation was led by Dr. James Miller, Deputy Secretary of Defense for Defense Policy, in the United States Department of Defense. The North Atlantic Alliance was represented by Ambassador Alexander Vershbow, Deputy Secretary General, as well as Ambassador Sorin Ducaru, Assistant Secretary General for Emerging Security Risks. The American delegation also included Duane Butcher, in charge of a.i. of the United States in Bucharest, Frank Rose, Deputy Assistant Secretary of State for Defense and Space Policy, Jim Townsend, Deputy Assistant Secretary of Defense for European and NATO Policy, Elaine Bunn, Deputy Assistant Secretary of Defense for Nuclear Policy and Missile Defense, Lieutenant General Noel T. „Tom" Jones, Deputy Commander of the United States Air Force Europe, Vice Admiral James Syring, Director of the United States Missile Defense Agency (M.D.A.), Major General Randy Kee, Director of Policy, U.S. European Command Headquarters, and Rear Admiral Jack Scorby, Commander of the Naval Region Europe, Africa and Southwest Asia.

On September 17, 2009, the President of the United States announced the decision to develop the American missile defense system in Europe in a new, adaptive, step-by-step approach (E.P.A.A. / European Phased, Adaptive Approach to Ballistic Missile Defense), which would better protect the forces carried out in Europe and in the theaters of operations, both American and Allied, as well as the territory of the United States and their allies.

The Ballistic Missile Defense Review Report, published by the U.S. Department of Defense on February 1, 2010, outlines four phases:

- Phase I:

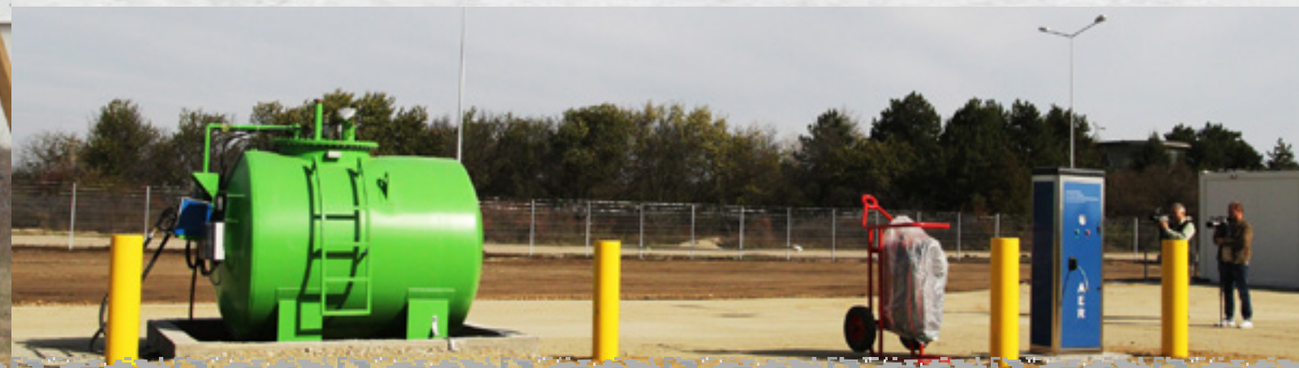
Protecting parts of Southeast Europe by deploying an advanced radar system (designed to detect missiles launched from the ascending phase of their trajectory) and SM3-IA interceptors located on ships. The first stage started on March 7, 2011, by sending the U.S.S. Monterey, equipped with the Aegis system, to the Mediterranean Sea, respectively by operating a radar in Turkey, at Kurecik.

- Phase II (time horizon 2015):

Extending the protection of NATO allies by operationalizing a new generation of ground interceptors (SM-3 interceptor missiles, Standard Missile 3 type Block I.B.), located in a ground base, respectively at Deveselu. The system that will be located in Deveselu is expected to reach operational capacity in the fourth quarter of 2015.

- Phase III (time horizon 2018):

Extending the coverage of the system to all NATO member states in Europe, by introducing a new version of the SM3 interceptor,



which is to be located in a ground base in northern Europe (Redzikowo, Poland).

- Phase IV (2020 time horizon)
- as planned by the U.S. Department of Defense in 2010:

It involved extending protection to possible intercontinental missile attacks, including through the further development of SM3 missiles and radar systems, with the deployment of a new class of interceptors (SM3-IIB) in Poland. In March 2013, the U.S. side announced the adjustment of the E.P.A.A., which involved abandoning this phase.

On March 15, 2013, U.S. Secretary of Defense Chuck Hagel announced the U.S. Administration's decision to adjust the E.P.A.A., given the situation in the Korean Peninsula, which included, among other things, the abandonment of Phase IV of the program (which involved mainly the introduction of a new type of interceptor missiles) and to restructure the program on the SM3-IIB interceptor (which should have been installed in Poland from 2022), by transferring the funds intended for it to other more efficient interceptor programs. At the same time, the U.S. side has decided to implement a series of additional missile protection measures in the U.S. This decision was motivated by the need to take into account the evolution of threats with possible ballistic missile attacks on U.S. territory by the Korean D.P.R., manifested between March and April 2013.

Prior to the public announcement, in the spirit of the bilateral Strategic Partnership and as a NATO ally, Romania was informed by the U.S.A. on the decision to modify the structure of the U.S. missile defense system. The decision did not affect in any way the operationalization of the shield in Romania, the type of interceptor that was abandoned (SM3-IIB) not being provided to be located at Deveselu Base.

* The U.S.A. bears Expenses for the implementation of the U.S.A. E.P.A.A. system. Romania will provide the location for interceptors. Article 11 of the 2011 agreement clearly establishes the financial responsibilities of the parties.

* The level of national security of Romania increases significantly through involvement in the project, the new approach will guarantee the full coverage of Romania in the event of ballistic missile strikes. Internationally, it is recognized that the threat of such weapons is a reality. Expert analyses refer to states or non-state organizations that may endanger allies' security if the necessary measures are not taken. According to art. 3, para. 4 of the Agreement, the U.S.A. is firmly committed to Romania's security and, as part of NATO's commitment in this regard, to defend Romania through its ballistic missile defense system against the growing threats posed by ballistic missile proliferation and potential ballistic missiles attack

* The interceptors to be installed do not have an explosive charge and are not carriers of dangerous charges (nuclear, biological or chemical). They are designed to destroy hostile missiles exclusively by impact force (kinetic force). To date, no harmful effects on personnel or the environment have been reported in the case of such facilities operating in the United States or other partner countries or on ships.

* The Romanian system is small in size and does not have the potential to change the strategic balance in Europe. Three batteries will be able to be installed on the Romanian territory, ie 24 SM-3 interceptor missiles.

* The E.P.A.A. missile defense system is strictly defensive, not directed against anyone. It defends against any attack, from anyone, with missiles with short or medium range or, in the final phase, intercontinental. The text of the Agreement explicitly states that the system will be used only for self-defense purposes, in accordance with the provisions of the UN Charter.

* From the information we have from American partners, the SM-3 program is considered one of the most successful programs of the Department of Defense.

* In the period 2001-2013, with the development of the integrated missile defense system, the U.S. Missile Defense Agency conducted 79 tests to evaluate the entire range of interceptors developed. Of these, 28 successful tests have taken place out of 34 carried out recently, dedicated to the evaluation of the SM-3 system, and resulting in the approval of the SM-3 Block I and Block IA missiles, currently in the composition of Aegis anti-missile systems located on ship.

* The anti-missile technology development program is still underway. From this perspective, the technical performance of interceptors is expected to increase in the future.

* The U.S. Missile Defense Agency has consistently published information on the effectiveness of the system, as well as the results of tests performed, including those with some malfunctions.

* The last three tests of some components of the American anti-missile system took place on September 10, September 18 and October 3, 2013, respectively, being successful.

* On September 10, 2013, an SM-3 Block IA interceptor (Standard Missile-3 Block IA) and a THAAD interceptor intercepted two medium-range ballistic missiles launched by U.S. forces during the test.

* On 18 September 2013, another test took place involving the Aegis BMD 4.0 Weapon System and two SM-3 Block I.B. (Standard Missile-3 Block I.B.) interceptors, which intercepted a short-range ballistic missile, separating short-range ballistic missile target, also launched by U.S. forces in the test.

* On October 3, 2013, an SM-3 Block I.B. interceptor intercepted a medium-range ballistic missile launched by U.S. forces during the test. The test involved the latest version of the second-generation Aegis BMD system, capable of intercepting more sophisticated and longer-range ballistic missiles.

S.A.S. Bucharest

Despite the busy schedule, the training of the fighters from the Special Action Service within the Capital Police is never left in the background. In this profession the daily training is the basis for the success of a mission.

text & photo: Marcella Drăgan

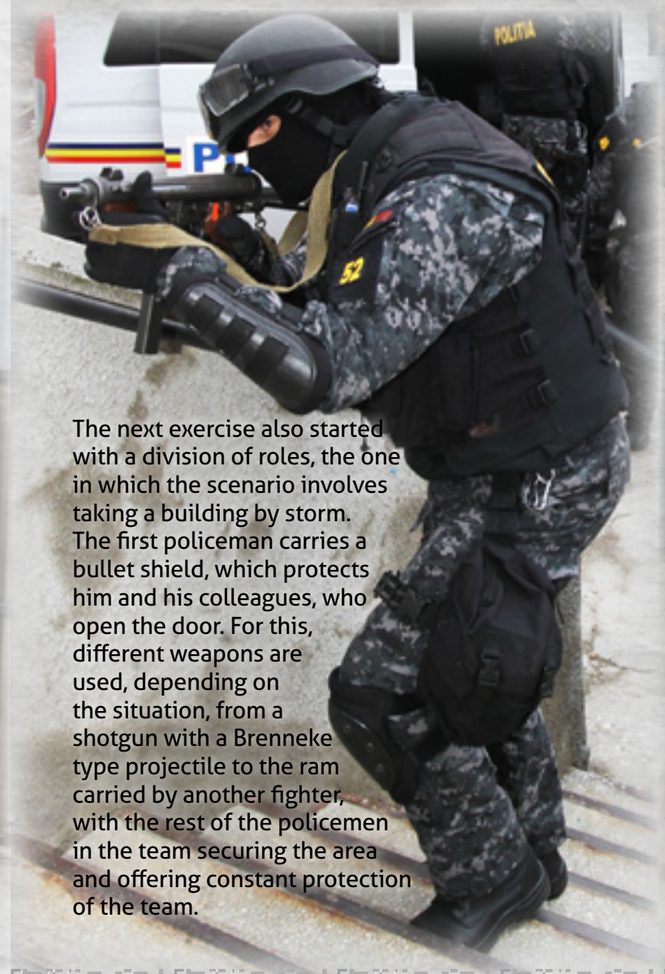
FROM THE INSIDE FROM THE INSIDE

Without any special conditions or preparation, the yard of the building in which the S.A.S. Bucharest has its headquarters, is a perfect setting for several scenarios that reproduce the most common situations encountered by the fighters.

The training has two parts, physical and tactical training, the first taking place in the gym. An important contribution to the training program is made by the fighters who in civilian life have done, and still do, high-performance sports and who have the role of coaches for colleagues when it comes to hand-to-

hand combat and self-defense procedures.

In this case, the tactical part of the training started with overpassing different obstacles, like a closed gate, as often during their missions, the policemen have to jump over high fences. The first fighter to get up the ladder is also the one that has to provide security and overwatch for his colleagues because the fighters cannot enter a yard without knowing what is there. That opens the way for the second policeman to jump over the fence and open the gate if possible to let the rest of the team in; all while having the first fighter secures the area. In order for this exercise to run smoothly during missions, it is repeated and discussed during training what role each team member plays, what each one should do in the event of something unforeseen, and what these situations might be.



The next exercise also started with a division of roles, the one in which the scenario involves taking a building by storm. The first policeman carries a bullet shield, which protects him and his colleagues, who open the door. For this, different weapons are used, depending on the situation, from a shotgun with a Brenneke type projectile to the ram carried by another fighter, with the rest of the policemen in the team securing the area and offering constant protection of the team.

The last exercise in the tactical training was a scenario that lends itself to several situations; a stop in traffic, a street flagrant with body search, concluded with the suspect's detention.

Special Actions Service

S.A.S. is a flexible police structure, with complex competence, which acts as a complementary force in support of the other subunits of the Capital Police to carry out high-risk missions. In some cases, the Special Actions Service represents the Capital Police's first emergency police intervention force. S.A.S. acts only at the express disposal of the Capital Police management.

Responsibilities

The D.G.P.M.B Special Actions Service has mainly the following responsibilities:

- executes interventions in case of robberies or attacks committed by armed criminals and participates in catching dangerous or violent criminals;

- carries out actions for the release of abducted and sequestrated persons, for catching groups that collect protection fees, or act illegally as credit recoverers;

- participates in the completion of flagrante delicto actions;

- provides specialized support and guards or accompanies special transports;

- acts together with other structures within the General Directorate of Police of the Municipality of Bucharest for catching particularly dangerous criminals;

- supports with specialized personnel the other subunits of the General Police Directorate of the Municipality of Bucharest in the execution of raids and „lightning" police actions, in areas and environments with high criminal potential;

- temporarily ensures the guarding and protection of Romanian or foreign dignitaries on the occasion of working meetings, official visits or other international activities organized in the Capital;

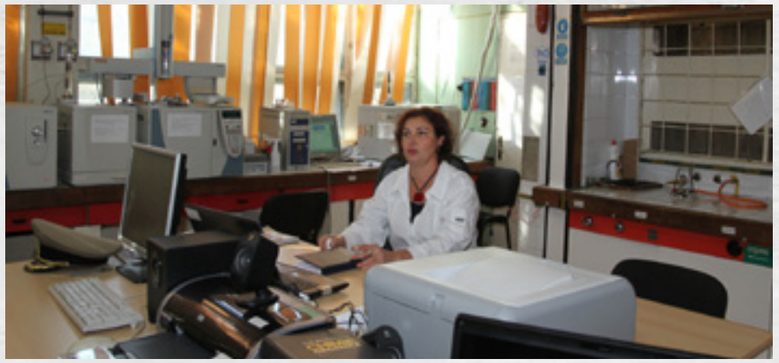
- performs special operations to rescue the victims, together with the other subunits of the Capital Police in case of catastrophes.

89th Anniversary of the Establishment of the CBRN Center for Scientific Research for Defense and Ecology

October 31, 2013 marked the 98th anniversary of the Minister of War, General Gh. Mărdărescu signing the birth certificate of the current Center, by transforming the 4th Gas Section of the 11th Higher Technical Directorate into the Gas Service, which also subordinated a Research Laboratory. This laboratory, after changes in structure and title, over the years, has become what is now called the „Scientific Research Center for CBRN Defense and Ecology". Since 1998, the Center has been part of the structure of the Research Agency for Military Technique and Technologies, subordinated to the Department of Armaments, said in the opening speech Col. Dr. Eng. Ioan Safta, head of CCSACBRNE.

On this occasion, a workshop was organized that included presentations about the thermobaric grenade strike for the AG-7 launcher (Alexandru Rogoz), the investigation by GC / MS, FTIR and SEM / EDX of the various rocket engine solid fuel compositions (Nicoleta Grigoriu) , realization of the experimental model of the filter ventilation installation for CBRN collective protection systems (Claudiu Lăzăroaie), explosive devices for penetrating objectives (Liviu Matache), chemical analysis and testing laboratory - laboratory designated by the Organization for the Prohibition of Chemical Weapons (Constantin Toader), bag for transporting explosive materials (Simona Badea), methodology for modeling behavior at dynamic stresses with high speeds of deformation of composite structures (Tudor Chereches), presentation by General Conf Grup (Emil Sârbu), rapid sample processing device for detection and identification toxic substances (Ovidiu Iorga), estimating the impact of ammunition asup environment (Răzvan Petre), technical decontamination trucks, land and personnel (Ion Savu), advanced processes for chemical and biological decontamination using nanostructured materials (Petrișor Iordache), obtaining new biomaterials with applicability in the production of ballistic protection equipment (Nicoleta Petrea).

In its 89 years of existence, the Center for Scientific Research for CBRN Defense and Ecology has been permanently established in a consultancy and expertise body of the Ministry of National Defense in the field of CBRN defense. The main areas of activity of the center consist of applied scientific research and technological development activities, activities in support of force categories, intervention activities at CBRN events and activities of providing services under accredited regime through its laboratories that are R.E.N.A.R. accredited. The results of the research have materialized over time in a series of equipment that have become part of the army, such as the N.B.C. protective suit with filter-ventilation, the protective suit for pyrotechnicians, the modernized level III A bulletproof vest, the ceramic plate modernized level IV ballistic protection, papillary trace detection cabinet (type A and A2), DET dosimeter range (individual DET 2 dosimeter, DET 2 P portable dosimeter, DET 2 S stationary dosimeter, DET 2 MC), D.R. radioactive decontamination solution 18, modernized alpha-beta radiometer RAB-M. Currently, research is being carried out in



order to diversify the fire unit of the AG-7 grenade launcher, an armament endowed by our army and other foreign armies. Another piece of equipment currently developed in the center is the device for rapid penetration into lenses, ensuring the access of special forces in various objectives by creating gaps in walls, doors, or breaking windows. The devices create relatively large cracks (800 x 600 mm) in walls up to 350 mm thick, in windows and doors, thus facilitating fast access for fighters. The Center performs, also in support of the categories of forces, the maintenance, verification and calibration of nuclear control equipment.

Another important activity of the center is the intervention at CBRN events. This is done through the Intervention Section at CBRN and Ecological Events, which consists of 3 mobile intervention teams, 3 intervention vehicles on DUSTER platforms and a special vehicle for sampling and identifying chemical, biological and radiological agents (S.I.B.C.R.A.).

Since 1994, the Center's Chemical Analysis and Testing Laboratory participates in interlaboratory tests organized by the Organization for the Prohibition of Chemical Weapons (OPCW) to identify chemical compounds of military interest. Participation in interlaboratory tests was a way to verify the laboratory's competence in identifying chemical compounds of military interest, and the very good results obtained made the laboratory certified by OPCW.

A small contribution to the Nobel Peace Prize

ÎIn 2013, the Nobel Peace Prize was won by the Organization for the Prohibition of Chemical Weapons (OPCW). Since 1994, the Laboratory of Chemical Analysis and Testing within the Center for Scientific Research for CBRN Defense and Ecology in identifying chemical compounds of military interest also participates in the interlaboratory tests organized by the OPCW. Participation in interlaboratory tests was a way to verify the laboratory's competence in identifying chemical compounds of military interest, and the very good results obtained made the laboratory certified by OPCW.

„Our satisfaction was complete and unexpected when, a few days ago, on the occasion of receiving the Nobel Prize by this organization, the head of the OPCW laboratory congratulated us for our work within the organization and that we should be proud of our membership in the organization." said Col. Dr. Eng. Ioan Safta, head of CCSACBRNE

To: Ioan.Safta@nbce.ro(+)

From: Hugh.Gregg@opcw.org(+)

Date: 11 Oct 2013, 01:43:24 PM

Subject: A special thank you to our partners

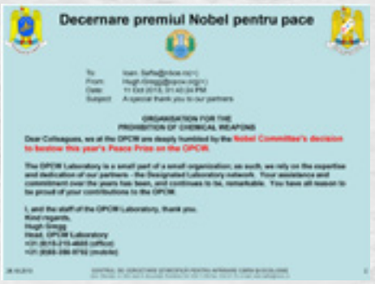
ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS

Dear Colleagues, we at the OPCW are deeply humbled by the Nobel Committee's decision to bestow this year's Peace Prize on the OPCW.

The OPCW Laboratory is a small part of a small organization; as such, we rely on the expertise and dedication of our partners - the Designated Laboratory network. Your assistance and commitment over the years has been, and continues to be, remarkable. You have all reason to be proud of your contributions to the OPCW.

I, and the staff of the OPCW Laboratory, thank you.

Kind regards,
Hugh Gregg,
Head, OPCW Laboratory
+31 (0)15-215-4605 (office)



December 1st, 2013

text & photo: Marcella Drăgan

Announced as one of the biggest parades dedicated to the National Day, the event that marked 95 years since the Union brought some novelties.

The parade device consisted of parade blocks, organized by detachments, with troops and equipment of the Ministry of National Defense, the Ministry of Internal Affairs, as well as the Romanian Intelligence Service and the Protection and Guard Service. The Military Tradition Association, a member of the European Union of Historical-Military Associations, also participated.

The commander of the parade was Brigadier General Tomiță-Cătălin Tomescu, the deputy head of the Instruction and Doctrine Department of the General Staff, the structure that organizes, every year, the military parade.

For the first time, soldiers from the armies of France, Poland, Turkey and the United States of America took part. The French detachment consisted of soldiers from the 1st Artillery Regiment of the 7th Armored Brigade, deployed in the Belfort region. A detachment from the Honor Guard Battalion represented the Polish armed forces, a special unit in Warsaw, intended to provide specialized assistance during military ceremonies on the national territory. The detachment of the Turkish armed forces was represented by the soldiers of the 66th Mechanized Infantry Brigade „Peace Force". Headquartered in Istanbul, the unit is part of NATO's rapid reaction forces. Finally, soldiers from the 2nd Research and Light Infantry Battalion were represented the United States based in Camp Lejeune,

North Carolina. This year, the American military took part in the multinational exercises that are taking place in our country.

Another surprise was the replica of the Vlaicu II plane, which paraded in a towed taxi, being flanked by four technicians from the Air Force Application School, dressed in period uniforms. The plane's 1: 1 scale replica was made by a team of engineers from Romaero, respecting exactly the project of Aurel Vlaicu from 100 years ago.

For the first time, the Army presented the Dacia Duster military vehicle, equipped with a remote-controlled AGIL762 firing platform, a product designed, developed and realized by the Digital Bit company in collaboration with the Bucharest Mechanical Plant. This is a 100% Romanian product consisting of a 7.62 m caliber machine gun, capable of performing multiple missions.

It was also possible to see SAUR 2, the multifunctional platform

currently in the industrial prototype phase, produced by Uzina Automecanica Moreni. SAUR 2 provides the following capabilities: protection of the infantry group against shrapnel, bullets from infantry light weapons, as well as against the effects of CBRN; rapid deployment of subunits from one district to another, with increased mobility, both on the road and off-road, in the field and on the water; the moving radio link in the radio networks organized for travel; operation both day and night, regardless of the season or terrain; the possibility of

observing the battlefield by each soldier in the infantry group.

Although it is not a premiere, this year, along with the more than 200 technical means that passed under the Arc de Triomphe, 35 aircraft flew over the Arch Square. First, an IAR-330 M helicopter passed with the national flag, followed by a flight formation consisting of 3 IAR-330 Puma helicopters. Also flew over flight formations consisting of 3 IAK-52 aircraft, a C-130 HERCULES transport aircraft,

CEREMONY CEREMONY CEREMONY

3 C-27J SPARTAN transport aircraft, 3 IAR-99 SOUL aircraft, 3 MiG-21 combat aircraft, of 3 Eurocopter-135 helicopters and three MI-17 helicopters and a Piper PA-42 Chayenne III medical transport aircraft.

Faces of Romania. A serviceman's portrait

text & photo: Marcella Drăgan

The image of the saluting serviceman while marching under Bucharest's Arch of Triumph, on the celebrations of Romanian National Day, has become one of the best photographs I've taken. His eyes filled with emotion and the significance of the solemnity of the moment he was attending stuck with me long after I took the photo, and aroused my curiosity: what is in the soul of a serviceman participating in such an event, and especially who is the man hidden behind the thin layer of camouflage paint.

After some research, I managed to find who that person was and get some inside in his life and motivations.

Major D – for security reasons, I will just call him that – is an officer since 1992, when he was promoted to lieutenant, but he began his military career seven years earlier at the Military College „Stefan cel Mare". He then followed „Nicolae Balcescu" Land Forces Academy from Sibiu, and Command and Staff Faculty from Carol I National Defence University from Bucharest.

„I chose this path by curiosity. And more because the rebellious ways of a 14-years-old boy who loved guns and arches and would have wished for his weapon to be real.

INTERVIEW INTERVIEW INTERVIEW

Later I realized that this is not just a job, but a way of life. Personally, I think that you can't service unless you truly believe in what you do, if you don't give yourself 100%, and if you can't make your family understand your sacrifice. You are a military 24 hours a day, 7 days a week, 12 months a year. You cannot take a leave of absence from your duty to your country.

A choice that comes with good and bad, although the latter is easily forgotten when compared with the satisfactions that are fast to come when you put your heart and soul in what you do. It can be the rewarding feeling of doing your duty and returning home, you and your comrades, without a scratch, at the end a deployment in an operation theater. Or the warmth that fills your heart when you see a 3-4 years' boy applauding you at the December 1st Military Parade, with his little, frozen hands, with a huge smile on his cheeks red from the cold, refusing to leave until the last military from the parade passes, ignoring the pleas of their grandparents to go home".

And speaking of family, the major stresses the important part the loved ones play in the success of his career. „If they understand what we do, they will help us, they will stand by us, with all their heart. We adapt, we support each other in all we do, and so we overcome all the difficult moments. It's important that we see the good part of all situations, that we are optimists and see the full part of the glass. When deployed, we are trying to think about the joy of the reunion with our family and not at the long months that we are apart, and that makes the time pass faster."

And the major has had his share of hard times in his deployments, like the one in the Democratic Republic of the Congo or the three ones in Afghanistan. „I try not to remember and I think that if I was able to forget, it means the things weren't that bad after all."

And if the major is not speaking about the hard times, he definitely has his good moments that he cherishes and remembers with great pleasure. The most beautiful moment in his military career was the promotion to lieutenant, a moment that he always keeps dear.

Makings the most beautiful moment's list is also the Military Parade from December 1st, the Romanian National Day, like the one from 2011, when I took the picture. About that day, I wanted to talk to major D, to ask him what it feels like to pass under the Arch of Triumph, and what memories a soldier keeps in his heart and mind.

„I remember the smiles of the kids waving the flags, the applauses of the people as we pass them, but mostly I remember the fierce concentration to give the best I can so I honor the thousands of people that bear the cold to see us. In the exact moment of passing under the Arch, I felt on my shoulders the weight of the entire history of the place. But I was so proud. Proud that I can be part of the long line of soldiers gloriously passing under the Arch."

A moment truly unique for which the servicemen and women prepare for two weeks in advance, with long days of training and rehearsals. But all the hard work and the pain of training sometimes in freezing temperatures fade away when faced with the glory and satisfaction of taking part in the Military Parade.

Asked to end with a message for the Romanians, the major responds with the simpli-city born from a life in the service of the country and the uniform: „May we be healthy! And to those who serve, to keep on respecting our traditions, our profession, and our uniform!"

TECHNOLOGY TECHNOLOGY TECHNOLOGY

Thermobaric ammunition

for the 3x40 millimeters grenade launcher

The thermobaric ammunition for the 3x40 millimeters grenade launcher was successfully tested at the "Getica" National Training Center in Cincu by specialists from the Scientific Research Center for CBRN Defence and Ecology (SRCCBRNDE) of the Research Agency for Military Technique and Technologies of the Ministry of National Defense. The experimental model has been tested on three targets, two car bodies and lightweight construction to see what the effects are. "We want this equipment to be developed and approved, then transferred to an economic agent, preferably from the defense industry, to take over and industrialize the product," said Cezar Stroie, head of the Compartment of Public Relations within the Department of Armaments.

The thermobaric ammunition for the 3x40 mm caliber grenade launcher is now in an experimental phase, with only 28 pieces being made. Until now, the scientists from SRCCBRNDE have been working on finding the right composition for the thermobaric charge, developing the components and testing the effectiveness of the hit in static conditions.

Project Director Engineer Alexandru Rogoz, said, speaking about this type of ammunition: "Starting with the last two decades of the last century, notions such as fuel air explosive (FAE) or thermobaric ammunition have been frequently circulated in the specialty literature but also in the accounts of the conflicts in Vietnam, Afghanistan, Chechnya or the Persian Gulf. Given that the destructive effect of these two new weapons categories is the surplus generated by a shock wave, although by different mechanisms, we consider the term "thermobaric weapon" to be the most comprehensive."

What should we know?

According to Mr. Rogoz, "taking into account the experience of the SRCCBRNDE, who since 1983 has been able to control the detonation phenomenon of combustible and air mixtures in a free atmosphere, and in the early 1990s, through its three working research prototypes (the jumping mine, the 100 Kgf aviation bomb and the 99 mm caliber portable thermobaric grenade launcher) had placed Romania among the top four countries in the world in terms of achievements in this field", we can say the following:

- Ammunition with a fuel-air explosion involves a combustible substance, typically liquid and from the hydrocarbon class, and two conventional explosive charges. When the first explosive charge is detonated, the fuel is scattered into the atmosphere in the form of a cloud of aerosols or vapors. The operation of the second explosive charge, after a determined

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time, causes the initiation of the detonation of the fuel and air mixture cloud, which behaves like an explosive.

- Thermobaric ammunition involves a combustible substance and a single explosive charge for dissemination. In this case, when spraying the combustible substance, the mixture with air is inflamed and burns, due to the action of a large number of initiation centers, represented by small incandescent metallic particles. This generates a large amount of energy in a very short time, which produces a shock wave and overpressure.
- Non-selective comparisons between classical and thermobaric ammunition are incorrect: the destructive effect is achieved in the first case, mainly by sketches, and in the other by the shock wave (overpressure). Thermobaric ammunition can be very effective in situations where classical ammunition is virtually harmless and vice versa.

It is true that

- there is currently no means of protection against the action of thermobaric munitions;
- due to the high shock wave area, the thermobaric ammunition (predominantly high capacity) requires less accurate target conditions;
- when fighting in the cities, the thermobaric ammunition is superior to the classical ammunition of similar size, for two reasons. First, when operating in closed spaces the overpressure is increased through successive reflections from the walls and ground. Second, the fuel-air cloud acts „around the corner";
- if you own the technology necessary to create it, the thermobaric weapon is usually cheap and relatively simple to make.

Certain FAE and thermobaric ammunition owners are currently states like USA, Russia, Canada, Israel, China, India, Bulgaria, and Serbia. Depending on the doctrine, the offensive or defensive weaponry predominates.

The USA owns and had used, in Vietnam and in the two conflicts in the Gulf and Afghanistan, aviation bombs (CBU-55B, BLU -82, "daisy cutter" BLU 118 B), air-to-ground and air-to-air missiles with a FAE warhead, and a corridor creation system through CAT-FAE minefields.

Russia has a full range of FAE and thermobaric ammunition and has used it first in Afghanistan and then in Chechnya: the ODAB-500 aviation bomb; portable launcher of thermobaric grenades 93 mm caliber RPO-A "Schmel" (ammunition in a non-recoverable container PAFS type); multiple missile systems (12 strokes) 300 mm caliber "Smerch" (range - 70 km; mass - 800 kg; FAE load - 100 kg; cloud diameter - 25 m); launcher of reactive missiles 220 mm caliber "Uragan"; TBG-7V thermobaric ammunition for AG-7 grenade launcher.

China holds a thermobaric grenade launcher 80 mm caliber PF-97, with a single use.

Bulgaria produces a thermobaric ammunition for AG-7 grenade launcher.

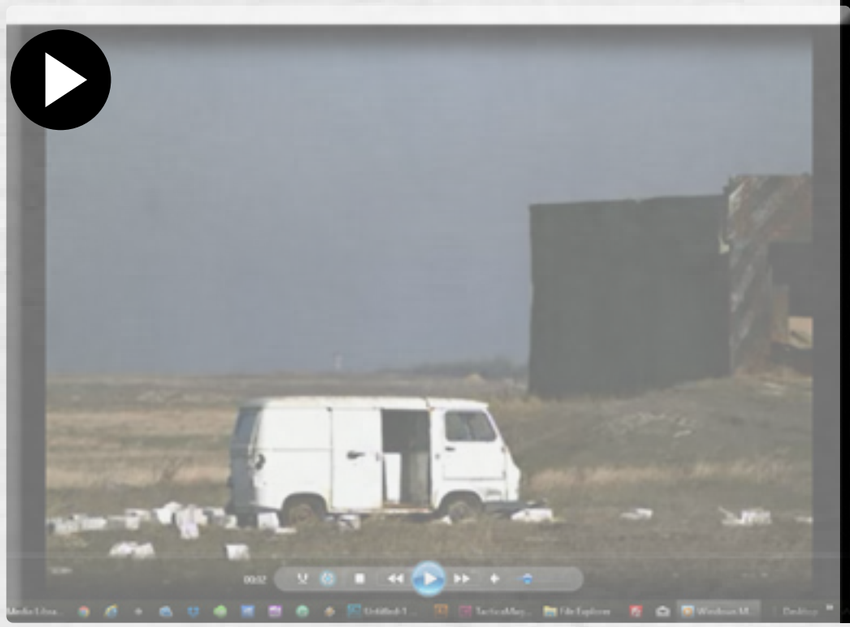
Serbia has offered for sale in the 1990s a 32-liter capacity fuel-to-air jet mines "UDAR-FAE".

Canada holds the FALCON system for FAE demining.

Where are we?

For 20 years, many of whom without sufficient funding, a team from the SRCCBRNDE, based on a SSID program for the endowments of the forces, developed, in different stages of assimilation, the following thermobaric ammunition:

- FAE mine "MISECA" (Product C21) - industrial prototype homologated with Dragomiresti UPS
- portable thermobaric grenade launcher 99 mm caliber "LAPGECA-99" - a certified research prototype
- portable thermobaric grenade launcher 95 mm caliber "LAPGECA-95" (similar to Russian RPO-A) - an experimental model
- 100 kgf aviation bomb "BAECA-100" - experimental model approved for combat
- thermobaric grenade 105 mm caliber for AG-7 grenade launcher - industrial prototype approved with S.C. "Carfil" Brasov.



Where there is no room for error

Joint training, Romanian-American, on EOD topics

Everyone who has been to the theater of operations says that no mission is like another. This is also because our soldiers are constantly acting with the „Sword of Damocles" over their heads. This sword in Afghanistan is called I.E.D. - improvised explosive device.

Text: Locotenent Emanuel Dodoiu, Maior Adrian Gîtman
photo: Adrian Gîtman

Romanian E.O.D. (Explosive Ordnance Disposal) teams are constantly present at missions involving specialized support in the emergence of possible improvised explosive devices (D.E.I.), the biggest threat to the military deployed in the theater of operations in Afghanistan. On this occasion, the procedures are verified, all the training in the country is concretized and experience is gained in the use of intervention equipment and neutralization of improvised explosive devices. The theater of operations is a challenging environment, and this is the test of fire for any member of an E.O.D. team.

The missions of the 151st Infantry Battalion in Afghanistan benefit from the support of several certified soldiers in this specialization. Starting from the staff officer, Lieutenant Emanuel Dodoiu, and up to the subunit commanded by Captain Adrian Enache, all E.O.D. specialists perform their tasks specific to a theater of operations. The danger that exists at every step in Afghanistan is the so-called improvised explosive device.

The insurgents have over time developed various tactics and procedures for the use of these devices, with the aim of causing material damage and loss of life to both the international coalition forces and the Afghan security forces. The only weapons we have against this danger are the uninterrupted vigilance of all military personnel on missions and the E.O.D. subunit. Identifying explosive devices is a task common to all forces. The last step - neutralizing and destroying hazardous components - is up to E.O.D. operators. All soldiers are aware of the same thing: we are face to face with an enemy who does not make a difference and does not forgive.

Until this date, every E.O.D. intervention of the „Black Wolves" was crowned with success, finally being announced the long-awaited all clear. Each mission is specific in its own way, because all the factors of an incident change. The greatest dangers are those devices that are secured during planting or trapping. They present the greatest risk for the E.O.D. operator, but the carefully followed procedure ensures the steps leading to the immediate neutralization and destruction of the explosive system.

We all fight improvised explosive devices in the theater of operations. The soldiers are the sensors. Taking into account everyone's training, personal experiences and, often, instinct, we all pay attention to the environment in which we carry out our mission. Traveling through

EOD crew on a mission on the A1 highway in Afghanistan

Afghan lands is done with the metal detector in front and keeping in mind the successful examples of those who before us have successfully passed the „I.E.D. test".

In addition to their own strengths as instructors, the E.O.D. teams of the 151st Infantry Battalion have also acquired the mentorship of the Afghan military and police. Whether we have provided them with practical examples of research into areas suspected of the presence of improvised explosive devices, or whether we have prepared them to use devices and equipment for detecting exposure substances, E.O.D. members do their duty by all means at their disposal. Throughout the area of responsibility of the 151st Infantry Battalion, since the beginning of the mission, E.O.D. specialists provide assistance to the Afghan security forces operating in our area: use of metal detectors, detection and intervention equipment, E.O.D. intervention vehicle, analysis of specialty of explosive devices, lessons learned. All these activities allow the freedom of movement of forces in the area of operations, without being restricted by the „ I.E.D. phenomenon".

The preparation and the ability to understand the typology of these devices, together with the endowment with high-performance intervention equipment allowed us to act together with the American partners successfully at each call of the subunits that report the possible improvised explosive device.

Plutonier-Adjutant Florin Negoescu explains to Afghan police how to discover a DEI

Dacia Duster Army in drive test at Mihai Bravu

text: Maior Dan Crișan
photo: Adrian Iuzic
Revista Forțelor Terestre

Without, at this date, being a fighting machine from the army endowment, Dacia Duster 1.5 dCi 110 HP 4 × 4, in the Army version, is the prototype resulting from a three-year collaboration of the companies involved: Dacia, Uzina Mecanică București, Electro Bit and specialists from the Armaments Department of the Ministry of National Defense.

If on December 1, the Romanian S.U.V. included in the parade device, surprised the civilian and military participants in the parade by the „visibility test" given by its passage under the Arc de Triomphe, on December 17, in the Test Range „Mihai Bravu" of the Bucharest Mechanical Plant, the off-road vehicle gave, both, the „route test" and the „fire test" in front of the civilian and military journalists.

The idea of the Dacia Duster Army project started, in fact, from the local car manufacturer which, in its market strategies, identified among the possible customers, the institutions from the national defense system. Obviously, starting from the basic configuration of the Dacia Duster Laureate vehicles, on the production line, the engineers proposed their technical customization according to the special destination that the beneficiaries wanted. Among those who entered into the collaboration relationship were the specialists of the Department of Armaments, by signing a protocol in which a set of military standards was exposed without which the Duster could not be called ‚Army'.

Colonel Dr. Alexandru Caravan from the Department of Armaments, stated that along with the structure he represents, came the specialists of the Research Agency for Military Technique and Technologies and of the Joint Logistics Command. „Initially it was a test drive that Dacia proposed in 2010 to the partners in the security system, MApN, M.A.I., SPP, but only our specialists considered it necessary to initiate a test-evaluation plan of the car, that at this time was just entering production, to identify, on the one hand, the technical performance and, on the other hand, its restrictions for military applicability. At the end of 2012, we prepared a test report in which we set out the limitations from an operational point of view. At the end of October 2013, we were surprised that the specialists from Dacia present us the version you see exposed here, without turret, with some of the problems solved, ie 12-24V socket, external power supply, roll cage that allows the car to overturn without affecting the passenger compartment, the front winch, the rear hook, the blackout lighting system through which the vehicle directs its lights towards the ground, remaining slightly visible from the outside, protective shields for vehicle subassemblies, etc. In the future, Dacia wants to expand

the capabilities of the vehicle, to bring it closer to the requirements that the military has for such a product: there would be a need to increase the load, increase engine power, increase the possibilities of crossing obstacles, slopes, etc. Our next topic is to study how far we can push the total weight in order to be able to add protective putties, armor. Next, we have a signed protocol to test the new version."

Dacia Duster Army is equipped with a remote-controlled platform, composed of the armament system, sighting equipment, observation mode. The platform is made by the engineers of the Bucharest Mechanical Plant, who adapted an equipment from the endowment of the mine dredger on the tank chassis used by the Land Forces.

Only the maneuvering cartridges, the 7.62mm machine gun, were used in the Mihai Bravu range, being handled from inside the machine by an operator through a joystick connected to an integrated computer with a touchscreen display. The general manager of the Bucharest Mechanical Plant, Gheorghe Ioana, presented his company's contribution, known as the „tank factory", in the military equipment of the Dacia Duster vehicle, Army variant: „The teleoperable platform is one of the five versions of the equipment. This version is a low weight aluminum one, which allowed us to mount it on Dacia type vehicles. I'm not hiding from you that we're still trying to adapt it to equip it with the 12.7mm and 14.5mm armament. We have a request from Romtehnica to adapt a teleoperable platform for horse armament. 20 mm."

The electro-optical part of the remote control platform belongs to the Digital Bit company led by the director Bogdan Bărbulescu: „The system has both combat and observation capabilities, being composed of a day observation room, a thermal camera and, optionally, can attach a laser telemetry system that allows you to find the distance from the lens to the vehicle. It is a design of our company in which we use embedded applications that allow us to do any type of upgrade and further development, by the simple modification of the software and not of the hardware. What we have produced can be used by the Romanian Army, but we will also promote this product for export. In the equipment we have integrated the Battlefield Management System module; so we have included the command and control part, so that the targets are engaged both by analyzing the information received by electro-optical equipment and by analyzing the information received from

advanced observers (advanced). The information is entered on the digital map, and will then be used by the machine gun shooter. On the same computer we have, on the one hand, the screen for the combat equipment and, on the other hand, the digital map with the information about friends (own forces) and enemies."

In Romania, the Renault company that owns the local manufacturer Dacia, has at Titu a technical center called Renault Technologie Roumanie (R.T.R.), a structure responsible for vehicle development, consisting of engineers who respond to customer requests through products configured according to their specifications. One of the actors involved in the realization and promotion in the military environment of Dacia Duster, the Army variant, is also Viorel Sălan, general manager of Tests and Services - R.T.R.: „The car was made after we picked up from the market the desired equipment. All we did was present an adapted car. After the test was done, we answered the questionnaire given to us by the army representatives, telling them that the vehicle does not have the required equipment, but that it can allow them by mounting them by our team. In fact, the Romanian and French operatives are working on a project through which additional protection putties can be adapted on the Duster".

Undoubtedly, Dacia Duster Army is a result of the collaboration between the military and civilians. Through imagination, ambition, technical capacity, and partnership, a product initially intended for exclusive use in the civilian space can also serve in the military. Among the missions that can be accomplished with such a vehicle would be those of patrolling, ensuring perimeter security, research, etc.

Roar in the mountains

After a lot of training and long waits, the subunits of the 17th Mountain troops Battalion „Dragoș Vodă" received the green light to perform tactical exercises with combat firing with artillery and heavy infantry weapons, between November 13-14.

text & photo: Locotenent Cezar Sopon
Fortele Terestre

Early in the morning, boarding the trucks, the journey to the most pleasant place for the mountain troops, to the heart of the mountains, begins. In our case we are talking about the Rotunda firing range, located in the Suhard Mountains. After two hours of crossing inaccessible forest roads, you can see, among the curtains of fog and clouds, the forested peaks of the area. After another hour, the mountain troops reach the firing positions and start the preparations eagerly.

The firing positions are occupied, the guard is installed, but, for the time being, the meteorological conditions are not on our side, the dense fog reduces to zero the visibility of the objectives district.

With our nerves stretched to the limit, we wait a few hours and the wait is rewarded, the weather giving us a window. Finally, the weapons recital begins, the silence of the mountains is disturbed by the loud sound of grenade launchers quickly dispelling the fog and the targets fall one after another.

Sergeant Hrib Vasile, platoon commander A.G. 9 (Grenade Thrower) is satisfied; this is also transmitted to subordinates from the 82 mm caliber mortar. They also did their part by destroying the target field and causing a thick cloud of smoke to rise over it.

In the area of the firing position of the 120mm mortars' section, there is great agitation. Distances are measured, initial elements are calculated, weapons, ammunition, and sighting devices are checked once more. Immediately the firm command of the sergeant Mihai Tomegea, the commander of Section 1 Shooting, is heard. Sergeant Fănică Pascari, the

REPORTAGE REPORTAGE REPORTAGE

commander of first line „First ready!" „F.I.R.E" is commanded, the shot leaves and the section commander starts his timer. The almost 30 seconds of travel time seem like an eternity. Finally, the bursting takes place very close to the target, demonstrating the accuracy of how the initial firing elements were determined. The adjustment is made and the objective is framed with a minimum consumption of bombs

and in a very short time, as in the case of the following fire missions. It seems that this time too the gunners did their job very well.

The time has come for the platoon of mountain troops who half a year ago were carrying out missions in the mountains of Kandahar province, Afghanistan, to develop the offensive, this time in front of a mountain, they say, more welcoming. The action begins and the sound of gunfire dominates the entire area. After an hour of machine-gun fire, the hunters conquer the mountain and repel the enemy.

With the satisfaction of fulfilling all the objectives proposed for this day, the 17th Mountain Troops Battalion „Dragoș Vodă" soldiers who have once again shown professionalism and dedication are preparing to return to the barracks.

Winter Boots

Letal

Manufacturer:	M.I.L.T.E.C.
Product/product range:	Black patrol zipper boots
Material:	Cowhide and polyester
Caramb:	tall
Lining:	E.V.A.
Insole:	POLIYOU ®
Sole:	Rubber
Sizes:	39 - 48
Other details:	Y.K.K. zipper, polyester laces
Company website:	www.letal.ro
Store address:	Bld. Uverturii 57-69, Bl. 10, ap. 2, Bucharest, sector 6
Phone:	0757.812.716

The information provided was provided by the manufacturer / seller

PRESENTATION PRESENTATION

Winter Boots

Magazinul Militar

Manufacturer:	VIPER VIPER	VIPER
Product / range of products:	military boots military boots	bocanci militari
Material:	hydrophobicized natural leather 2.0-2.2 mm thick	
Ankle:	Cordura leather ™ DuPont 1100 Denier	Cordura™ DuPont 1100 Denier
Lining:	breathable membrane Viper Tex	
Sole:	The sole is injected directly on the faces of the two-layer boot (the inner layer is made of polyurethane and has a low density, it is more elastic, thus absorbing shocks more easily; the outer sole is made of rubber with antistatic, antacid and non-slip properties); complies with H.R.O. (resistance up to 300 degrees C) and S.R.C. (slip resistance)	
Sizes:	35 - 47	
Other sizes	intermediate sizes (eg 42.5)	
Other details:	are slip resistant; have a patented revolutionary heel flexion system; they are extremely light, flexible, comfortable and quiet; they have an anti-shock system integrated in the heel and an anti-perforation metal insert	
Company	website: www.magazinulmilitar.ro	
Store address:	online store	
Phone:	0768.686.486	

The information provided was provided by the manufacturer / seller

Winter Boots

Magazin Outdoor

Manufacturer:	MFH	MFH
Product / range of products:	German military boots	German military boots
Material:	leather	leather
Caramb:	leather	leather
Insole:	leather	leather
Sole:	rubber	rubber
Sizes:	39 - 45	38 - 45
Mărimi:	39 - 45	38 - 45
Other details:	The sole is glued and sewn; inside they are provided with a layer of leather lining, for increased comfort	
Company	website: www.magazinoutdoor.ro	
Store address:	str. Dimitrie Brândza, no. 6, Bucharest	
Phone:	0757.734.849	

The information provided was provided by the manufacturer / seller

PRESENTATION PRESENTATION

Winter Boots

Medimpact

Manufacturer:	S.C. Medimpact S.A.	SC Medimpact S.A.	SC Medimpact S.A.
Product / range of products:	Military boots (model no. 3605)	Military boots (model no. 3624)	Military boots (model no. 3629)
Material:	hydrophobicized box		
Caramb:	tall, leather		
Lining:	mesina		
Insole:	bovine		
Sole:	rubber + polyurethane double density	polyurethane double density	polyurethane
Sizes:	39 - 48	38 - 48	38 - 48
Other details:	The military boots made in I.J. manufacturing system have a two-component sole structure, a polyurethane / rubber combination that gives the product comfort, safety and durability.		
Company website:	www.medimpact.ro		
Store address:	Str. I. C. Brătianu no. 24, Mediaș, Jud. Sibiu		
Phone:	0369.421.050; 0725,750,332; 0733.917.456		

The information provided was provided by the manufacturer / seller

Winter Boots

Military Concept Store

Manufacturer:	S.C. Military Concept Store S.R.L.
Product / range of products:	Start Equipment
Material:	Natural cowhide 2.0-2.2 mm
Ankle:	natural cowhide 2.0-2.2 mm
Lining:	breathable, heat-sealed membrane
Insole:	insole
Sole:	double density polyurethane directly injected on the faces
Sizes:	36-47
Other sizes to order:	35
Company website:	www.bocanci-armata.ro
Store address:	str. Pupitrului no. 28, sector 3, Bucharest
Phone:	0742.105.555

The information provided was provided by the manufacturer / seller

Winter Boots

Military Shop

Manufacturer: HAIX	HAIX
Product / range of products:	Haix Airpower P6 High Military Boots
Material:	Goretex
Caramb:	Vibram
Lining:	Goretex
Insole:	EVA
Sole:	Vibram
Sizes:	40 - 46
Other details:	HAIX® AF SYSTEM - Ankle Flexibility System offers special support in the ankle region, a much easier lace closure, similar to the quick wearing of a boot that is pulled on the foot. HAIX® CLIMATE SYSTEM - Each step produces an effect that pushes moist air out of the boot and draws clean air in through the vents in the vent.
Company website:	www.military-shop.ro
Store address:	str. Ghirlandei no. 38, pp. D1, Sc. D, Ap. 32, sector 6, Bucharest
Phone:	031.437.08.82

The information provided was provided by the manufacturer / seller

PRESENTATION PRESENTATION

Winter Boots

Tactical Gear

Manufacturer:	TTG (Tech Tactical Gear)
Product / range of products:	Tactical boots TG-007
Material:	cowhide genuine leather, water-repellent, extra thick, water-resistant (waterproof)
Caramb:	
Lining:	perforated, abrasion resistant, antiperspirant, antifungal and antibacterial treated lining
Insole:	removable, antistatic, abrasion resistant, antiperspirant, antifungal and antibacterial
Sole:	made of double density polyurethane, resistant to bending and abrasion, antistatic, antacid, anti-oil, base, non-slip, with shock absorption system integrated in the heel
Sizes:	40 - 45
Other details:	The shockproof construction allows the absorption of shocks thus ensuring increased comfort while walking and running. The sole material and anti-slip profiles ensure a safe movement on slippery surfaces as well. The profile of the sole ensures increased resistance when descending on the rope (fast rope).
Company website:	www.tactical-gear.ro
Phone:	0723.764.000

The information provided was provided by the manufacturer / seller

Winter Boots

Viper

Manufacturer:	S.C. Viper Spirit SRL	SC Viper Spirit SRL	SC Viper Spirit S.R.L.
Product / product range:	Viper 1 - P / 2D Series / P / R Series	Viper 2 Black P / R Series / Viper 2 Woodland P / 2D Series / Viper 2 Black P / 2D Series Viper Elite	Viper Elite
Material:	Water-repellent natural leather 2.0-2.2 mm thick		
Caramb:	leather	Cordura ™ DuPont 1100 Denier	
Lining:	Viper Tex Breathable Membrane		Coolmax
Sole:	P / R Series - The sole is injected directly on the sides of the two-layer boot. The inner layer is made of polyurethane and has a low density, it is more elastic, thus absorbing shocks more easily. The outsole is made of rubber with antistatic, antacid and anti-slip properties. Complies with H.R.O. and S.R.C. rules. H.R.O. (resistance up to 300 degrees C). S.R.C. (slip resistance). P / 2D Series - The sole is injected directly on the sides of the boot in two layers of polyurethane. The inner layer has a low density, is more elastic, thus absorbing shocks more easily. The outsole is made of a denser polyurethane, with increased mechanical strength and abrasion resistance		TPU
Sizes:	35 - 47	35 - 47	36 - 47
Other details:	Galloped sole at the toe and heel, for mechanical protection. Triple seams in heavily stressed areas. Revolutionary heel flexion system, patented by Viper. Extremely light, flexible and comfortable. Anti-shock system integrated in the heel. Anti-perforation metal insert.		Possibility to use the side zipper for a quick shoe. The comfort has been improved by adding a flexion system in the stringing area which, together with the heel, the arched shape and the carefully studied shoe, make this ice comfortable even when driving.
Company website:	www.vipershop.ro		
Store address:	Road. Morarilor no. 1, building C1		
Phone:	021.255.59.52		

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