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Physical Protection of Military Camps

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One of the most important components of preparing and conducting military (convencional) and peace support operations is the support of the operations, and it's effectiveness is highly affected by the distance of the supporting forces and equipments from the forces which are participating in the actual operation. In favor of the supporting forces, equipments and services' effective availability, we can create military objects and camps outside the garrison's area for the housing of the units providing the life – and working conditions for them. The defence level of a military camp depends on various factors, and that level can be different within the limits of the camp, and it has strong connections with the camp's physical defence and it's reinforcement.
My aim is to provide a short overview about the opportunities of the military camp's physical defences.
KEYWORDS: military camp, physical defence, zones of camp

A katonai táborok fizikai védelme

A háborús és nem háborús katonai műveletek előkészítésének és végrehajtásának egyik legfontosabb összetevője a műveletek támogatása, melynek hatékonyságát nagyban befolyásolja a támogató erők, eszközök távolsága a műveletben résztvevő erőktől. A támogató erők, eszközök, szolgáltatások hatékony elérhetőségének érdekében, a helyőrségen kívül a csapatok elhelyezésére, élet- és munkafeltételeinek biztosítására szolgáló katonai objektumokat, táborokat hozhatunk létre. Egy adott katonai tábor védelmi szintje több tényezőtől függ, a védelmi szint a táboron belül is eltérő lehet, melyhez szorosan kapcsolódik a tábor fizikai védelme, annak kiépítési szintje.
Célom egy rövid áttekintés nyújtása a katonai táborok területének fizikai védelmi lehetőségeiről.
KULCSSZAVAK: *katonai tábor, fizikai védelem, tábor zónái*

Introduction

The military camp's appearence stretches back to the very past. During the passing eras the designs, aims and implements, the quality of the camps because of the developing infrasturcture have changed a lot of course. Even today there are significant differences between diffenent nations' camps. Despite these, the past eras' and today's camp-founding principles are the same:[2]

- to provide the housing and storing of soldiers, armaments and technical equipments;
- to provide living conditions;
- to create the conditions to hold trainings and preparations;
- to provide the infrastructural background of daily routine, leading and controlling;

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[2] Kovács 2012, 71.

- to handle the camp's security, physical defence and repelling the attaks.

In favor of the military camps' optimal security a security system needs to be installed and operated, which defence capability depends on the required defence level in that area. A military camp's defence level depends on multiple factors, which you have to keep in mind during the planning phase:[3]

- the nature and duration of the operation, excercise;
- the intensity and quality of the dangers;
- the size, mission and organization of the units stationed there;
- host nation support;
- geographical factors;
- composition of the forces stationed in the camp (national, joint, host);
- other factors (political, health and pandemic, etc.).

Setting and equiping the camps are regulated by numerous – NATO, UN, national etc.– manuals, which have to be (should be) extended by the gained experiences.

With the end of the bipolar world, a new environment was born. Based on terrorism, assimetrical warfare and the non-controlled spreading of the WMD-s (proliferation) smaller in size, but more complex life-threatening elements have appeared. As conventional warfare took the back seat armies had to rethink the operations' way of support from all sides, such as the military camps' defence and equipment.

Principles

During the setting up phase (speaking of camps), the commanders on the spot have more responsibility as they have to measure the local security situation and determine, control the needed safety/defence capabilities.[4]

Tha aim of the camp's defence is to lower the probability of undesirable events during the support/rest periods, and if these undesirable events happen to occur, moderate the consequences (caused damage, injury, etc.), grant us opportunity to stabilize the security and order, go through the transition period just after the attack, reorganization, rebuilding.

One of the principles of building military camps is the creation of different areas, called „zones". There are generally three well seperated zones:[5]

(1) Buffer Zone

It is important to easily seperate the military camp from the nature, and from the buffer zone designated around it. This zone is the unbuilt area just around the camp, this is the primary protection zone. The extension of this well cleared area makes the approach harder for the enemy without being compromised, as well as the „smuggling" of undesirable equipments, materials within the camp, or just near it.

The size of this zone depends on the actual security level, and on the objective opportunites. The well selected depth of the zone will shelter us against the attacks carried

[3] Kovács 2013b, 8.
[4] Kovács 2012, 74.
[5] Padányi 2006, 204.

out with explosives, and also this is the most effective against them. The well set area carried out by security aspects will highly rise the defence capabilites of the camp itself.[6]

(2) The camp

This is the second zone, which primary security line is the outer ring of 360 degrees.

From the aspect of defence and security, the clear, large/deep, well-lit and well-seen areas should be prefered. The professionally engineered build-up of the camp, the use of more security equipments will rise de defence capabilites even more.

(3) Inner security Zone

For the high-value facilites placed within the camp, it is essential to create an inner zone which is well-reinforced. This area is deep in the camp, far away from the perimeter and dangers, defended by another line of security equipments and proceedings.

Area of the military camp

Designating the proper area for setting up a military depends on various elements. But choosing the best place for the camp has a positive effect both on the defence capabilites and on the forces' operational effectiveness. In the introduction, several factors had been mentioned, which determine the camp's level of defence.[7] Obviously we have to keep in mind those factors in the first place during the designation of the area of the future camp, but we have to watch for these factors as well:

- cover and concealment of the camp;
- avenues of approach;
- opportunity for setting up inner security zones;
- available (useable) materials, equipments quality and quantity on the spot;
- useable local infrastructure (buildings, gas, water, sewage, eletricity, híradó communication network, etc.);
- expenses of the construction and sustainment.

Accessibility

The defence capabilites can be raised, if we keep up the status quo between the obstructions used for slowing, stoping the enemy and the limits of our forces' manueverability during the planning of the the avenues of approach.

Using more entry-points grants the friendly forces greater mobility, and grants opportunity to select and seperate those, who enter, and leave the camp, but also let a higher chance for the undesireable material and personel to get inside unnoticed. If we reduce the number of the entries, it will significantly raise the entry time, and also has a negative effect on the forces' mobility, which may create dangerous situations.

The quick, unchecked approches can get harder, if we leave behind the building of perpendicular roads to the camp's „wall".

[6] Kovács 2016a, 82–83.
[7] Kovács 2013a, 37.

Whichever solution we choose for the avenues of approach, the most important is to maintain total control all the time over the approches, entries, exits and the surrounding area.[8]

The disturbing, dead spot-generating vegetation, and uneven ground should be terminated. If it is not possible, the long, dense vegetated areas has to rarefied.

More administrative defence measurements can help controlling the approaches towards the camp. Several traffic signs, speed breaker obstructions (such as „s" turns) help identifying those who want to enter illegally, grants opportunity for the security forces to survey the suspicious vehicles better, and to perform security measurements if needed.[9]

The most important elements of a camp in according to approaches and entries, are the checkpoints, which grant the security forces chance to control the traffic, conduct administration, hold off persons and materials without permission to enter. Checkpoints also good for the demonstration of military forces in the area.

Security mechanical equipments

The various counter-mobility mechanical equipments are inevitable parts of the camp's security. I would like to highlight those, which are used most of the time, as there are many different versions and types for them.

The reinforced concrete bypass elements' (T-wall, Jersey wall) cross section is trapeze-shaped, it looks like a letter-„T" upside down. The height can differ, starting from 0.8 meter to few meters.[10] Installing them next to each other, can be a good way to close, control, or to „herd" the traffic. Mandatory directions, or closed areas can be easily designated and signed. These elements can be used without proper founding and fixing, so it is possible to quickly redeploy them if the situation demands it. Fixed and founded versions are also available. That version raises the defence capability, but reduces the mobility.

For bypassing, and detouring the traffic, HESCO bastions can be used aswell.[11] These are being produced based on a MIL standard. The standard lets twelve different sizes to use, which can be applied as a modular obstacle system. The elements are welded, galvanized nets made of steel wires. The problem of connection is solved with vertical spiralic coils and fixing spikes. It's frame is a strong steel net, which can be opened and closed like an accordion. There is a thick polypropylene geotextile fixed onto the web, so it can be easily filled up with the local soil, rocks, sand, or whatever material that can be found on the spot. By pulling the spikes out, the filled material can be removed, so the HESCO can be used later again.

The steel and reinforced concrete anti-tank obstacles, such as the so called „dragon's teeth", similar to the lower T-walls, are being used to designate and seperate the closed areas from the traffic. Based on it's size and weight, they can be easily and quickly

[8] Kovács 2013a, 39.
[9] Kovács 2013a, 37.
[10] Kovács 2013a, 40.
[11] Kovács 2013a, 40.

installed, and very mobile. The different hindering obstacles, such as mobile and fixed spikes prevent the undesirable enter into the inner area of the camp.

The simple, man-operated opening and closing barriers at the gates cannot stop the vehicles, they are used for visual warnings: warn the driver to slow down, there will be an inspection, or has to stop for any other reason. If the gate is an icreased security point, it is a good idea to use stronger, more massive barriers.[12]

For the control of the pedastrians, or to hinder their movement – beside the ones written before – different barbed wires and fences can be used with good effect.

The rapid-deployment wire is a sharp, nailed, coil of wire which is tensile. It was designed to transport in a compact form, and can be deployed as an accordion being pulled apart. The tensile wire's size determines the diameter and streching capability. The diameter is usually beteween 50-110 cm, and it's lenght can be streched until 10-12 meters. By using fixing parts, the coils can be placed next to, or onto each other.

The fences belong to the 360 security. Speaking of defence capability, these can be used in a wide spectrum starting from visual warnings to hindering osbtacles against heavy vehicles. It depends on the technical realization and the budget available.[13]

They can be made of steel concrete, reinforced concrete, wood, plastic or stone fences(walls). The shape and look of these are based on the security standards, and on the human fantasy. The advantage of these fances is simple: beside the basic duty, they can be mounted with additional technical tools and equipments, which raise the defence capabilities even more. These tools can be security-electronical devices, tools used for concealment so visual reconnaissance might get more difficult or other devices, which are required for the local area.[14]

Guardposts and emplacements

Built up camps, which area are properly chosen, fulfill the requirements of the optimal security level, mounted with other devices, still have to have more critical elements: the guardposts, the observing posts, and the (firing) encampments.

These can be set up well covered, or demonstrative way, it depends on the aim of the installing. During the planning and building phase, commanders have to take a good care for these towers, guardposts around the outer ring, at the checkpoints, next to the roads leading towards the camp, and in the inner ring.

Against grenades and rockets, thick, wired webs can be used, and against rifles, inner covering/concealing elements are optimal within the towers, with good observation opportunity. For the better observation effectiveness, the observation posts should be raised, and used that way, so the soldier on duty can see further.

Depending on the current situation, and materials available, different types of observation and guardposts, emplacements can be installed, but all of them have a criteria

[12] Balogh 2013, 105.
[13] Kovács 2016b, 93.
[14] Balogh 2013, 106.

of appropriate defense against enemy fire from the front and from the flanks. Besides, the individuals using these elements have to have a good view towards outside, with opportunity to (return) fire.

Speaking of materials, they can be various, but the previously mentioned HESCO elements are frequently used. Concrete or wooden beams and stringers also can be used for the edifice, but has a negative effect of generating fragments after direct hit or explosion. The HESCO elements filled with well graded materials are able to negate this fregmentation effect.

Buildings

It is appropriate to install facilites planned for larger numbers within the inner security zone of a camp. If it is possible, larger security distances should be used between zones and other important camp facilites.

An already existing building can be reinforced post factum, it's defence capability can be raised, it all depends on the aim of future use. Using glasses in buildings where soldiers can be frequently found have to be minimized (fregmentation), otherwise special glass material and insulation is needed.[15]

The roof needs to be reinforced against incoming projectiles from above, or has to rebuild them. The easiest and most effective solution for this is doubling the roof. The outer part activates, or slows the projectile down, so the inner roof 1.5 m beneath it will repel the debris.

For further security effectiveness, the large areas should be partitioned with space divider elements, which could be one-layer thick, or could be multilayer dividers, not to mention the ones filled with well graded materials. Wooden, steel, plastic or fiber elements filled with sand is another option.

For maximizing the security, the military camp's zones should be divided into inner and outer zones, too. As far as possible, mechanical defences from different sort of levels should be used and mounted in these new areas. Against unexpected attacks, it is worth to construct inside easily approachable shelters on various points against explosions, fragments and projectiles using steep trajectoriy. If the security level demands, and we have the opportunity, constructing shelters providing high levels of defence needs to be considered.

Inner security zones

According to the Hungarian definition of critical infrastructures,[16] the camps' cruical elements can be stated as:

Those facilities, systems, services in the camp, whiches significant damage, malfunction or destruction followed by serious consequences for the safety of the forces, conducting of operations, nature and the effective leading.

[15] Kovács 2013c, 118–119.
[16] CLXVI. tv. 2012, 1.

For the camps' cruical elements defined above, the creation of inner security zones is inevitable. These elements can be command posts, casualty collection points, communication stations, electric-, water-, gas support systems, and other utility systems main elements, facilities, security posts, shelters, etc.[17]

To defend these elements, special reinforcing facilities needs to be constructed, whiches fulfill the required security level, and secure the defended element to continue operating, even in special situations.

We can secure the special reinforced buildings' security capabilities by:

- their chosen place according to the ground:
  - on surface;
  - mid-surface;
  - underground;
- using building structures with appropriate load carrier ability;
- using security and mechanical equipment;
- using security systems (such as safety valves, sluice-systems, air-filter systems);
- vibration dampers, radiation and electromagnetic pulse proof safety systems;
- separating entrances and utility systems;
- providing reserve systems.

The same security level is required for the camp's cruical elements' continuous operation. For example, the camp's power supply needs to be doubled by a reserve system. Also, uninterruptible power supplies are mandatory elements too. For a command post, it is important to separate it's utility systems from the camp's systems (electricity, water, gas) so it can operate even in case of camp-wide malfunction.

To save these cruical elements and systems, the inner security zones need to be guarded within the camp too. The defence capability can be raised by enclosing the area, installing entry points or checkpoints, constructing inner guard towers and observation posts, and the use of cover and concealment against direct visibility from outside.

Summary

It can be seen that building a military camp requires an extensive cooperation between different professions, and the person who coordinates and responsible for all of this is the commander of the forces using the base.

This writing is only scratching a theoretical part of the defence of military camps. We should know it is not enough to be familiar with different specializations (risk calculation, military specializations, security, law, administration, etc.), we have to know these branches' connections, and their places in the complex system of defence.

It must be highlighted, that even the best planned, built, and defended security system alone cannot work with serious effectivenes. It needs the operators and other users, whose optional training is inevitable for the military objects' proper operating.

[17] Kovács 2013a, 45.

REFERENCES

2012. évi CLXVI. törvény a létfontosságú rendszerek és létesítmények azonosításáról, kijelöléséről és védelméről.

Balogh Zsuzsanna 2013. *Objektumok robbantásos cselekmények elleni védelmének lehetőségei*. Doktori (PhD) értekezés, Budapest, Nemzeti Közszolgálati Egyetem Katonai Műszaki Doktori Iskola.

Kovács Tibor 2012. A katonai táborok biztonsági rendszereinek kialakítása, különös tekintettel a robbantásos merényletek megelőzésére, azok hatásai csökkentésére, *Műszaki Katonai Közlöny* XXII (3): 70–83.

Kovács Tibor 2013a. A katonai táborok biztonsági rendszereinek kialakítása, különös tekintettel a robbantásos merényletek megelőzésére, azok hatásai csökkentésére, *Műszaki Katonai Közlöny* XXIII (1): 36–50.

Kovács Tibor 2013b. *Példák a katonai táborok biztonsági rendszereinek kialakítására, különös tekintettel a robbantásos merényletek megelőzésére, azok hatásai csökkentésére.* TÁMOP-4.2.1.B-11/2/KMR Robbantásos építményvédelem, kiemelt kutatási terület, NKE.

Kovács Zoltán 2013c. Katonai objektumok IED elleni védelmének lehetséges technikai megoldásai. *Műszaki Katonai Közlöny* XXIII (2): 114-121.

Kovács Zoltán 2016a. Physical perimeter security of military facilities. *Bolyai Szemle* XXV (1): 79–89.

Kovács Zoltán 2016b. Barriers for physical protection of military facilities against vehicle born improvised explosive devices. *Vojenské Reflexie* XI (1): 86–99.

Padányi József 2006. A katonai műveletek terrorvédelme. *Nemzetvédelmi Egyetemi Közlemények* (3): 200–205.

Szabó Sándor; Kovács Zoltán 2014. Improvizált robbanóeszközök hatásai ellen történő védelem „DEFENCELL" készlettel. *Műszaki Katonai Közlöny* XXIV (3): 41–53.