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Establishment problems of a NBC Training Ground

Abstract/Absztrakt

A hidegháború végével egy olyan világméretű konfliktus kialakulásának veszélye, mely során ABV fegyverek tömeges bevetésére kerülne sor jelentősen csökkent. A biztonságpolitikai szakértők a korábbi ABV fegyverkezési hullám hozományaként napjainkra új típusú veszélyforrásként jelölték meg az ABV fegyverek gyártásához szükséges anyagok, eszközök, szellemi termékek proliferációjából fakadó fenyegetést. Az ellenőrzés alól kikerült és kisebb felfegyverzett csoportok tárházát bővítő ABV eszközök szerepet kaphatnak kisebb helyi háborúkban. Ezzel párhuzamosan új veszélyforrásként jelent meg napjainkra a nemzetközi terrorizmus, illetve a jelenséggel összefonódó ABV terrorizmus, valamint az aszimmetrikus hadviselés. A fegyveres erők felkészítése során számításba kell venni továbbra is a fegyveres küzdelem egyik lehetséges színtereként az ABV környezetet. A katonákat úgy kell felkészíteni, hogy a harctevékenységet folytatni tudják ABV körülmények között is. Ennek egyik feltétele egy olyan jártasság kialakítása, amely a katonát képessé teszi először is túlélni az ABV hatásokat, illetve folytatni a tevékenységet.

By the end of the Cold War the possibility of eruption of a worldwide conflict using Weapons of Mass Destruction significantly decreased. According to the opinions of security policy experts the new threat is the proliferation of NBC component, facilities, and brain as a result of earlier NBC arms race. It comes that NBC weapons can be used by uncontrolled smaller armed groups. Connecting to the proliferation, the threats of global terrorism, NBC terrorism and asymmetric warfare are also exist. During the preparation of troops as a possible theater, NBC environment should be taken into consideration. Troops should be capable to maintain their operatiability in such environment also, in which, soldiers must be prepared to survive NBC effects and later maintain combat activities.

Kulcsszavak/Keywords: *ABV környezet, túlélni az ABV hatásokat, kiképzés, ABV gyakorló-pálya, nemzeti környezetvédelmi szabályok ~NBC environment, survive NBC effects, Military exercises, NBC exercise field, national environmental rules*

PREPARATION FOR NBC DEFENCE

Since the Cold War, the number of countries having NBC weapons has been increasing, despite of agreements dealing with limitations regarding that possession, production and use. The trend may be gradually goes on. The agents needed to prepare NBC weapons and radioactive materials can reach the countries in crisis areas, where they can be used by not only regular armies, but irregular armed groups also.[1] On the other hand some NATO countries have nuclear capabilities, but they have prepared doctrine related to their use.

Coming from international obligations of NATO, the troops of Hungarian Armed Forces may get into real NBC situation. Knowing this, the training of individuals is highlighted. Well-equipped and modern troops may easily become vulnerable when their preparation or their gears are insufficient.

NBC effects in NBC environment – radiation, toxication, biological infections etc. – and other factors coming from the use of NBC weapons (limited sight, movement, combat capability, etc) decrease the survivability of individual soldiers.



Figure 1:
MOPP¹ level 4.

According to the NATO STANAG 2150, every soldier is to be capable to recognize the identification criteria of NBC strikes and ROTA events.[2] They also have to be capable to make proper countermeasures, using individual overalls in order to survive. They have to know the process and rules of the partial and total decontamination, and their suitable decontamination equipment. A soldier is to maintain his combat capability in environment having NBC effects, but that needs every kind of facilities.

¹ MOPP= Mission Oriented Protective Posture

One of the most important elements of the training is the real or almost real condition. Its main bases are the terrain, or proper training ground. The training ground has to meet the training, and environmental requirements, and the legal conservation laws.

During the training, the use of environmental polluting materials is unavoidable, but based on careful planning in design of NBC training ground, and using non polluting simulants damages can be reduced. Detergent agents can occur environmental pollution after the crossing on contaminated areas, or on practice of decontamination activities with equipment also.

During the designing and establishing NBC training ground, the national environmental rules and NATO directives must be taken into consideration. Of course all kind of exercises effect the environment, thus exercise goals must be reached with minimal environmental pollution. Military exercises, trainings, usually carried out on special fields owned by the Hungarian Armed Forces. Most of these fields were built in accordance with earlier environmental and conservation laws, but some of them have been reconstructed, the renewal of others is gradual according to the legal actualities.

Under construction or reconstruction of NBC training ground both training and environmental requirements must be to the force. Proper kind of systems should be installed during the work, which capable to lead and to gather the forming dangerous waste- primarily - fluent pollutants they for him getting into environment without any environmental risk. Fortunately the proper technology exists and the personnel of the Hungarian Armed Forces are capable to design and install the abovementioned systems. The main goal of training carried out in fields, is the practice in real environment, and this supported by environment friendly NBC exercise field.

SOME CONSIDERATIONS OF TRAINING GROUND INSTALLATION

The main feature of using NBC training ground is the production of relatively huge amount of liquid polluting materials. Regarding the cost effectiveness that 1970s' complex principle should be followed in which all kind of NBC activities - or some units - can be facilitated by only one exercise field.

During the crossing contaminated areas the main training goal of exercise, is practicing decontamination of trucks and Armored Fighting Vehicles (AFV). In order to reach this achievement firing posts and shelters for AFVs should be prepared supporting the partial decontamination activities in combat breaks. The bed and the lower part of firing posts should be built of concrete with channels, assuring the flow of polluted liquids. The decontamination station for trucks, AFVs also needs channels and collection points for liquid materials.



Figure 2:
Decontamination (source: <http://www.honvedelem.hu>)

The structure of ground also should be taken into consideration. [4] The best, when the soil is compact and watertight, thus the sandy surface is insufficient for this purpose. In the loose soil the polluting liquid diffuses into the lower layer of it so, their effects remain longer in time. The best protective layer is the compact clay soil. The clay usually consists of high-level Ca, with relatively significant high acid adsorption capacity. Leakage factor of clay (10^{-7} - 10^{-9}) is much lower than the fine sand (10^{-2} - 10^{-3}) regarding the water. According to results of searches, it is proved that the soil is able to change its feature because of effects of certain liquids; it can be transformed from leaky to watertight. [3]

It is necessary to examine it primarily, what kind of pollutants, compounds may get to the concrete surfaces, and what kind of pH value in a medium.

To achieve the NBC defence practice skill, which was mentioned in the introduction, on the NBC exercise field may polluted by:

Decontaminants:

- TDE-202 PC decontaminating material, strong oxidant, creates toxic materials with acid.
- TDE-202 LC decontaminating material consisting of xilol and emulsifying agent.
- The RM 54 decontaminating material contains detergents, glycols and anticorrosion agents.

These abovementioned components are harmful and carry threat for environment as well. If we would like to avoid the use of decontamination liquids, the decontamination process can carry out with water, unfortunately in this case sewage is forming. The direction of wind is one of the main determining factors during the selection of place of NBC training ground, so in that direction must not be any settlement. Other factors such as distance from any lakes, rivers, dams, and drinking water sources also should be taken into consideration.

Three pillars of an acceptable NBC training ground is to meet the environmental and training requirements, as given below:

1. In order to simulate real NBC situations, it is necessary to find such agents, which have low toxicity, and they are not dangerous to the living organism, and it can use appropriately for training purposes.
2. The NBC training ground should be set with channels, and collection points for used decontaminating liquids till its emptying. Furthermore after the washing with water

the trucks, AFVs, and armored vehicle surfaces several directly not toxic, but the environment loading agent dip onto the soil.

3. The NBC training ground should be installed in an area having the needed distances from settlements. The other main point of selection is the meteorological conditions, because the usual direction of wind is able to decrease the effects of environmental pollutions. The training ground should establish on such a type soil, which can pollute in a very low level in the case that despite the factors listed in the two points some unexpected event happens.

The today's engineering is able to update those NBC training fields, which do not meet the recent environmental law. With this update these fields can be used during the NBC training, with those elements, which were, leave out earlier, but essential.

Commanders will give planned, organized directions relating to NBC Defence. No one was born with these capabilities, thus these need high-level knowledge and practice. [5]

We know about more and more countries that are capable to use nuclear or chemical weapon in a fight. Having industrial capacities more countries are able to produce chemical or biological weapons in weeks – disregarding, whether they want to use them, or not.

Commanders need to know the effects of NBC weapons on planned operations. A soldier of a modern army should be prepared to maintain operations in NBC affected areas, in order to achieve the goals of operations and survive that.

The NBC training and simulation of real NBC environment contribute to the fulfillment of successful combat or warfare.

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