

**MIKLÓS ZRÍNYI NATIONAL DEFENSE UNIVERSITY**

Captain Engineer Zoltán Kovács

**THE POSSIBLE STRUCTURE OF BARRIER SYSTEM OF  
HUNGARIAN DEFENSE FORCES ACCORDING TO NATO  
PRINCIPLES AND RELATED INTERNATIONAL AGREEMENTS**

PhD thesis

AUTHOR'S REVIEWER

Leader of research:

(Colonel Eng. Ret. Dr. László Bodrogi)  
University Professor

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### **Formulation of the scientific problem**

At the very early of mankind's evolution appeared the need by individuals and communities to protect themselves against frequent natural disasters and attack of other people or communities. People always made effort to take advantage of the natural protection, but often there were no chance to do so, and they were forced to artificially create conditions to hinder the enemy and protect of their own.

With the appearance of ownership and due to the evolution and changes in social order the small collisions were succeeded by bigger military campaigns and wars where artificial obstacles, as we know today: barriers, played a greater part in defeat the enemy than ever and became an integral part of every armed fight.

Similarly to other weapons, development of barriers were unbroken and very soon they could not only hinder the enemy, but became capable to directly destroy them.

Mankind made serious efforts to produce more and more effective killing weapons, but the time came when people have realized the danger to themselves, and have not wished to create and guarantee security with excessive destruction furthermore.

As they became too dangerous, people tried to restrict the usage of weapons of mass destruction and weapons causing excessive injuries, and tried to solve conflicts on a diplomatic way, without involving any weapons.

Based on the facts and experiences mentioned, i.e.: reasons of conflicts and wars in the past, their outcome and consequences, we can declare that there is a risk in future of an armed conflict between different alliances, states or groups. All this makes it necessary to systemize and analyze our knowledge and experiences, and get or work out new, effective principles and methods. We have to permanently research and review the theory and practice of military science, armed fights, and its engineer support as a part of armed activity, and then we have to use and establish our results, scientific proposals and experiences during working out process of new principles and methods.

The timeliness of the topic of my PhD thesis is supported by numerous factors but I only mention the followings:

After joining NATO, *new expectations and requirements raised in relation with possible tasks and employment of Hungarian Defense Forces*, which make it essential to review our current principles and if necessary, to modify them.

During our research we have to set down the new basis of engineer support and counter-mobility tasks that we reach the ability to cooperate with other allied countries, but maintain our special national features.

Another important fact I mention, that the *government of the Republic of Hungary ratified and made those international agreements entered into force, which deal with the restrictions of weapons that may cause excessive injuries, and the total ban of antipersonnel landmines*. According to the regulations, we withdrew antipersonnel landmines from service, but scientists and military experts still did not find a perfect solution as an alternative method to the mines neither in theoretically nor in practice.

Increase the need to review countermobility area that *the quantity and quality of organized units and equipment can be involved into countermobility tasks had been significantly changed during reshape and reform of Hungarian Defense Forces*. *New engineer units and combination of modern equipment that fit new structure and new tasks still has not worked out yet*.

It is obvious, that the place and role of our country in the region has been changed due to NATO membership, and we can also declare that it is not probable that a regional and a continental war may break out in the near future in our area. However, some tasks of the military forces, like participation in crisis management, in disaster relief operations, in antiterrorism missions and in other tasks like North Atlantic Treaty non article 5 operations came to the front, we shall not forget that according to legal laws and regulations the basic task and intended purpose of Hungarian Defense Forces remained to protect the territory and airspace of our homeland and if necessary, with armed troops.

According to these tasks we have to make our research work, revision and modification, so they help fulfill the main task of the armed forces in the future.

In addition to the facts and reasons mentioned above, I was inspired in my work, that *engineer regulations and most of the countermobility principles in service today are obsolete, and their explanation, reshaping and modernization is strongly recommended and necessary*.

## **Research purposes**

According to the facts mentioned above I determined the following main research purposes. *Formulate requirements and work out proposals* are based on scientifically supported conclusions to:

- countermobility capabilities of Hungarian Defense Forces, form special organizations and establish special equipment for these tasks and their usage in an armed conflict, with keep on eye of the future tasks of military forces, the economical and financial sources available and the planned forces' structure;
- create a barrier system that based on NATO principles and regulations of related international agreements, and their effective usage and integration into the defense system.

*Additional purposes of my research* were:

- to examine the important new requirements can be raised against barriers and barrier system;
- to investigate, collect and systemize different barriers used frequently nowadays by other countries and new principles, methods and equipment of laying or creating barriers;
- to examine future development trends of barriers and on the basis of my results to make proposals of principles and possibilities using barriers;
- on the basis of my research results to promote modern countermobility basic principles that appropriate to current principles of warfare, to contribute to the working out process of new doctrines, regulations, and to make proposals to the national adoption of allied standardized methods.

## **Research methods**

To fulfill my research purposes *I used the following methods during my research work:*

- I studied national and international special literature, issued publications, essays in relation with the topic, as like as results and recommendations of other special researches;
- I studied and analyzed provisions of law and resolutions related to topic;
- I summarized the common and opposing facts of discovered documents, and I drew my own conclusions based on my findings;
- I gathered information and knowledge about countermobility capabilities, tasks and activities of other countries' forces;
- I participated in different international, national and local conferences, symposiums and lectures of which themes were in connection with my research area;
- I systemized my knowledge and experiences I have raised during my military carrier;
- I consulted military experts and scientific researchers on my topic, and compared my results with their ideas;
- I searched World Wide Web for special material and publications related to my topic.

### **Description of scientific examination**

**In chapter one** I examined the difference between the definitions of obstacles and barriers, the main requirements can be raised nowadays against barriers and facts exercise influence on countermobility tasks. I also examined the role of countermobility tasks in the system of engineer support tasks, and outlined a special classification of engineer barriers and I set down a few basic principles of countermobility.

**In chapter two** I surveyed the historical rise and evolution of barriers, I introduced and value the different types of barriers used frequently today and also the modern laying methods and equipment systems.

**In chapter three** I surveyed the rise of international agreements related to antipersonnel landmines, I analyzed the regulations of the agreements and their consequences. Supported by examples I introduced the influence of landmines on combat activities and verify their effectiveness during armed battles. I outlined the main alternative solutions and methods to replace antipersonnel landmines.

**In chapter four** I presented NATO principles related to planning the barrier system and detailed tasks of creating barriers. I also examined the possibilities to adapt these principles and methods and I pointed to their importance. I summarized the facts that could be important for untroubled international cooperation during military missions. I analyzed the current organization and technical chances of engineer troops of Hungarian Defense Forces to fulfill countermobility tasks, and I compared the capabilities with modern warfare principles.

**In chapter five** I summarized the conclusions of my research work and my scientific results. In this chapter I made proposals to utilize my results and also to the areas need further research work.

### **Summarized conclusions**

I established that in military literature and rules in force today the basic principles of countermobility and the problematic of creating or laying barriers are not properly worked out. During my research I demonstrated that engineer support and its tasks defined by NATO are very similar to engineer support and its content defined earlier by our country. Based on my results my conviction is to hinder enemy movements and activity during armed fights is a very important part of engineer support that allows us to make more favorable conditions for the successful fight.

I established that usage of technical and technological developments of last decades by today makes it possible to effectively employ engineer barriers against the full scale of enemy's military arsenal. By examination of methods laying minefields and changes of tactics I drew a conclusion that in the future laying a military minefield will be not only an engineer task but other arms and military forces can be involved, too.

Based on analyses I gathered, I drew a conclusion that we lost an important part of our defense system by the renounce of using antipersonnel landmines in the barrier system, and it makes the all defense system more vulnerable. During experiments to restore defensive capabilities and replace antipersonnel landmines scientists did not find a perfect solution still today. Some of the alternative solutions requires strong technical and financial background, and in some cases makes necessary to increase operating personnel. I pointed to the fact that most

of the alternatives are not available for Hungarian Defense Forces due to the restrictions I mentioned above.

I established that fulfilling countermobility tasks with current organizations and equipment of Hungarian Defense Forces is strongly restricted and I made proposals to form special minelayer (sapper) subunits and to procure and establish new technical equipment and also to future usage of engineer barriers are in service today.

### **Scientific results of research**

After summarizing the results of my research work, *I esteem the followings as new scientific results:*

1. Examining definitions are made earlier and align them with modern requirements and today's war fighting principles *I made a proposal to the definition of non-explosive engineer barrier.*
2. Examining regulations of ratified international agreements and their consequences and also the NATO principles related with creating a barrier system, *I made proposals to adapt or modify definitions, principles, standardized methods and their use in our armed forces.*
3. Reveal the current situation, the general characteristic of countermobility assets and capabilities of Hungarian Defense Forces and their possible future role in an armed conflict *I verified the need for development, established the areas and demands that need modernization.*
4. *I made a proposal to form special countermobility units with special equipment and capabilities* and I pointed to the real requirements we can claim and suitable for Hungarian Defense Forces.

*I esteem as further results of my research work that:*

1. I pointed to the changes of factors of planning and executing countermobility tasks and modification of requirements can be raised against engineer barriers.
2. I made a proposal to dissociate and give separate definitions of obstacles and engineer barriers.

3. I summarized in a system and evaluated the mostly applied types of modern engineer barriers and their laying equipment and methods.

### **Employment of research results, proposals**

As a result of my research work *I recommend for Hungarian Defense Forces to use my PhD thesis in the areas of:*

1. Because my thesis summarizes engineer support and countermobility principles and tasks, *it may be used as a background material in military training and education both for engineers and combined arms personnel.*
2. The principles are in thesis *may be used as a background information to work out new military doctrines, military regulations and educational material for students.*
3. Thesis also may be used as a background material for reshape, reform and modernize the structure of engineer troops of Hungarian Defense Forces, that allows to fulfill all engineer support tasks of all kinds of military missions.

To help working out the new principles of engineer support and countermobility tasks those based on NATO principles, and to accomplish military tasks successfully, I recommend:

1. Procuring of modern engineer material, technical equipment and tools need for home defense, to form and train special units executing countermobility tasks and to supply these units with modern assets.
2. To draw up and always update a special database that contains all the civilian resources and their division that may be involved into countermobility tasks, and also contains all other factors should taken into consideration during planning process of barriers.

I think the ideas in my thesis may be used as a background material for other researches. In my opinion, more detailed and extended research is necessary on the following fields:

1. Basic principles and possible tasks of engineer support and countermobility in war operations is a very important research area and it needs further detailed examination.



2. I think countermobility tasks and usage of different types of engineer barriers in non-article 5 operations (Military Operation Other Than War) is also an important research area, which requires detailed examination.
3. I deem it advisable to research the training methods and possibilities of cooperation between engineer troops and troops of other arms and services during planning, preparing and executing engineer support or countermobility tasks.
4. I deem it a stressed research area to examine the usage of different documents, orders and reports during countermobility tasks.
5. I think further detailed examination and analysis necessary concerning the planning procedures and execution methods of countermobility tasks in other armies of the alliance.

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(Capt. Eng. Zoltán Kovács)  
First assistant professor  
Miklós Zrínyi Defense University