

**AUTHOR'S SUMMARY OF THE DOCTORAL (PHD) DISSERTATION**

**NATIONAL UNIVERSITY OF PUBLIC SERVICE  
FACULTY OF MILITARY SCIENCE AND OFFICER TRAINING  
DOCTORAL SCHOOL OF MILITARY SCIENCES**

**Árpád Győző-Molnár, Fireman Lieutenant Colonel**

**Examination of the use of operational command and control organizations for disaster management during extreme weather events, with particular emphasis on the development of technical equipment for mobile command points**

**Supervisor:**

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**BUDAPEST, 2023.**

## **FORMULATING THE SCIENTIFIC PROBLEM**

In formulating the scientific problem, I drew heavily upon my professional experience, my theoretical knowledge and the research I conducted during my doctoral studies.

In the context of the research topic, I first examined the command and control models and opportunities used in the context of special legal orders and events not requiring the promulgation of a special legal order. A common feature of the management of the 2013 disasters mentioned in the introduction was that they affected a large area - more than one county - required the cooperation of several partner agencies and organisations, delayed the elimination of damages, and the elimination of damages was carried out under unified command.

A notable difference, however, was the proclamation of the state of emergency during the Danube flood protection as a special legal order laid down in the Fundamental Law of Hungary (hereinafter referred to as the “Fundamental Law”). Thus, in this case, the specific management rules laid down in the Fundamental Law and the Disaster Prevention Act could be applied, such as: the minister in charge of disaster prevention could appoint a ministerial commissioner - until the end of the emergency situation - to coordinate the prevention tasks and give orders to the chairman of the defence committee of the county or capital; or, in the case of municipalities, the person appointed by the head of the regional branch of the professional disaster management organization takes over the responsibility for local disaster management from the mayor. Since these components can only be used when a state of emergency has been declared, they could not be fully implemented in the other two cases mentioned above, despite the centralised management of the elimination of damages.

The regulation of the Hungarian special legal order - the declaration of a state of emergency with regard to the scientific problem - is a well-established and functioning practice, as the 2013 Danube flood protection proves.

Nevertheless, it is noticeable that in the period since 2012, in line with the predictions of climate change, there has been a noticeable increase in natural disasters not leading to the proclamation of a special legal order - but still causing extremely high damage and significant danger to the population - mainly due to extreme weather events, of which there have been numerous examples in Hungary in recent years.

On the basis of my research, it can be stated that in such cases, instead of a special legal order being proclaimed, it is the intervention agencies - primarily the disaster management

organization - that manage the interventions through operational work units or, in other words, operational groups set up within their own organisation. In this respect, I see a clear opportunity to improve and modernise the command and control system, as these events are usually not handled by the disaster management service alone with its existing forces, but with increased involvement of partner services.

As a second factor, I examine the management system and tasks of disaster management and defence administration during natural disasters, with a separate focus on the peacetime command structure and methods, and those applied during emergencies. The growing number of disaster management tasks poses new challenges, while successful and effective interventions require more and more resources. Of course, the domestic disaster management system is not only activated in the event of disasters or other dangers, but also carries out hundreds of fire-fighting operations and official inspections every day, in addition to continuous professional training and exercises.

At present, local and regional authorities are primarily responsible for dealing with damage events, if necessary, by adjusting working hours or ordering overtime, and sometimes by reinforcing staff seconded from other disaster management agencies. In addition, depending on the nature of the damage event, the normal periodic tasks provided for by law - in particular in the fields of public authority and industrial safety - must also be carried out, unless a special legal order is promulgated which may lay down different rules. Therefore, in such cases, it becomes increasingly important to call in possible reinforcements in addition to the staff and limited resources. During these operations, effective action is only possible if there is proper coordination of the defence. In this context, it is necessary to emphasise the defence and security management system, since, in the current legal context, this organisational system already has the powers and resources to manage several organisations and ensure the coordination of their activities in the field of defence. The coordinated management of several - fundamentally different - organisations is of particular importance for the scientific problem.

With regard to the third factor of the research topic, it is necessary to examine the vehicles and equipment involved in the operational management of defence activities used by the professional disaster management body, the so-called Mobile Command Points (hereinafter referred to as "MCPs"), and other systems supporting the mobility of operational groups, in particular the aspects of operating command groups in containers or tents.

The accelerated activity of elimination of damages and the increased information requirements, both in terms of reporting obligations as well as data provision and information,

require that the persons responsible for the management of elimination of damages - the staff of the potentially established operational working organizations - start their activities with the help of modern MCP systems equipped with pre-configured computer workstations. This avoids delays in the core work related to the elimination of damages, delays in the establishment of the command centre and disruptions in the flow of information. These advanced systems, due to their mobility, can be of great help in starting the command activity as soon as possible. In my view, the use of the above-mentioned state-of-the-art equipment can take disaster management operations to a new level and make them more efficient. Examining these MCP systems and suggesting improvements that also take into account cost effectiveness and dislocation characteristics could further improve the effectiveness of the elimination of damages.

In summary, I believe that the scientific problem is the management of the natural disasters that occur, especially with regard to extreme weather events below the emergency level; because the management of these events is not always carried out in a modern and efficient way, using the available possibilities at the level of command and control. This is because either there is no legal framework allowing for a unified management of the intervention forces outside the period of the special legal order, or not all the possibilities and technical means available are used. My research also highlights the fact that disaster preparedness in Hungary is not the responsibility of one organisation alone, but is often carried out by the armed forces, law enforcement agencies, other state organisations, local governments, voluntary and charitable organisations and citizens acting separately. This can be attributed to the aforementioned problem of the command and control system - namely the lack of a unified command of the various organisations - which makes it difficult to achieve cooperation between the organisations involved in the elimination of damages, the flow of information between the organisations and the adequate information of the population about the events that have occurred. In my opinion, only a well-prepared and modern disaster management system is capable of meeting this challenge and fulfilling this task. In order to ensure more effective cooperation, the existing system of rules and regulations needs to be revised and supplemented to take account of the above.

In view of the above, my research examines whether it is possible to make the command and control of interventions more efficient by amending and supplementing existing legislation, sectoral regulations and internal procedures, as well as the structure of operational working organizations, whether it is possible to create a unified command system in the case of natural

disasters not reaching a special legal order, and whether it is possible to eliminate problems of competence.

I examine the experience of using the existing MCP systems and make suggestions on possible directions for improving the command centres, taking into account domestic possibilities and circumstances. The subject of my research concerns how the revised regulations can be integrated into the procedures of the disaster management organisation, which internal regulations may need to be amended or new ones issued. The results of the research can be a good addition to the curriculum of higher education in law enforcement, so I investigate whether they can be incorporated into education in the form of notes or textbooks.

## **HYPOTHESES**

After formulating the scientific problem, I proposed the following hypotheses:

1. I hypothesise that in the context of such natural disasters - especially extreme weather events - that do not require the promulgation of a special legal order, such as a state of emergency, development proposals can be formulated for the management of the elimination of damage.
2. I presume that the increased exposure to natural disasters will also increase the need for resources and equipment for protection, which can be handled by modernising the activities and organisation of the command groups working in the disaster management as well as protection and security management systems, and by using new equipment and technologies.
3. I presume that thanks to technological advances, new equipment - MCP vehicles and systems - has emerged in the professional disaster management organisation, which can be effectively used to improve the management of protection after natural disasters.
4. I hypothesise that the analysis and evaluation of the best professional practice can provide a good basis for identifying the main directions for further development of MCP systems for disaster management purposes, in accordance with domestic needs and circumstances.

## **RESEARCH OBJECTIVES**

I define my research objectives in four research areas, in line with the scientific problem and the formulation of my hypotheses:

1. I review, analyse and systematise the extreme weather events in Hungary, and in this context, I examine the publications of Hungarian researchers on extreme weather and climate change related disaster management in order to systematise the typical hazardous impacts that require increased disaster management efforts. At the same time, I examine the task system of the professional disaster management organisation in relation to natural disasters.
2. I analyse and systematise the operational working structures and the functioning of the Hungarian disaster management and defence and security organisation system, as well as the related legal and internal regulatory environment, in order to formulate proposals for the improvement of the organisation of the operational working organizations, which will increase the efficiency of the operational management and thus make the elimination of damages more effective.
3. I analyse and evaluate the systematic MCP schemes of disaster management, the aspects of their application in Hungary, the main requirements of their design and the experiences of their use, for which I review the relevant international and especially national publications.
4. I systematise national and international experiences with MCP vehicles and elaborate the possibilities for the development of MCP systems in Hungary, taking into account the boundaries of the professional disaster management organisation.

## **RESEARCH METHODS**

In order to achieve these research objectives, I used the following research methods:

1. Primarily, domestic legislation, legal organisational instruments and internal regulations are examined. This is complemented by an analysis of international guidelines, best practice, publications and research findings.
2. Participation in scientific events and working groups on relevant topics, processing, analysing and evaluating experiences.

3. Processing, analysing and reviewing key defence learnings from recent extreme weather events.
4. Inspection of vehicles and equipment to be used as MCPs by the professional disaster management body.
5. Analysis of the founding documents, structure and activities of the operational working groups of disaster management and defence administration.
6. Participation in training, events and conferences to demonstrate new techniques and technologies, and to analyse, evaluate and test the adaptability of experiences.
7. Examination and analysis of already prepared and used educational and support materials and collection of good examples.
8. Gathering the experience of staff with management responsibilities in responding to natural disasters.
9. Participation in training and actual disaster situations, especially where command methods related to natural disasters have been used.

## **BRIEF DESCRIPTION OF EACH CHAPTER OF THE STUDY CARRIED OUT**

In the first chapter, my main research objective was to review, analyse and systematise the extreme weather events in Hungary, and in this context I examined the publications of Hungarian researchers on extreme weather events and climate change-related disaster management, in order to systematically identify the typical hazardous impacts that require increased use of disaster management, and to examine the tasks of the professional disaster management organisation in relation to natural disasters.

In the second chapter, my main research objective was to analyse and systematise the operational working organizations and their functioning, as well as the regulatory environment of domestic disaster management and the defence and security organisational system, which perform disaster management tasks in the event of extraordinary events not requiring the promulgation of a special legal order. The main objective of this study is to evaluate the current tasks of the operational working organizations and to formulate recommendations for improving the organisation of the operational working organizations in order to increase the

efficiency of operations management and thus to make the elimination of damages more effective.

In the third chapter, my main research objective was to analyse and evaluate the MCP systems of disaster management, the domestic aspects of their application, the main requirements for their design and the experiences of their use. Furthermore, I systematised the national and international experiences with MCP vehicles and elaborated the possibilities for the development of MCP systems in Hungary, taking into account the boundaries of the professional disaster management organisation.

## **SUMMARISED CONCLUSIONS**

In the course of my research, I have come to the following summarised conclusions:

Based on available scientific research and data, it is expected that the effects of climate change will continue to have a *significant impact* on Hungary.

The sources and forecast scenarios used for the studies carried out predict an increase in the number and frequency of flash floods, storm damage, damaging winds, extreme winter weather and vegetation fires due to drought.

There is clear evidence of a steady increase in the number of disaster management interventions due to extreme weather events over the past 10 years, in line with international trends.

In the event of extreme natural disasters, the disaster management organisation is prepared to intervene as the organisation responsible for the primary elimination of damage.

The number of events occurred has increased not only in terms of quantity, but also in terms of complexity, with other agencies typically involved or contributing to the elimination of damage. The effectiveness of such complex interventions can be enhanced by the use of operational working organizations.

According to my investigations, the organizations responsible for eliminating the damage caused by extreme weather events are well prepared. The functioning of their operational working organizations is regulated by law and internal regulations - as regards the defence and security administration - and by internal regulations with regard to the professional disaster management organisation. These organisations are prepared to apply the provisions of



these regulations, for which the training and education of the staff involved in the operation of these groups is ongoing.

The activities of the operational working groups of disaster management are regulated by the measures of the Ministry of Interior's National Directorate General for Disaster Management (Hungarian abbreviation: BM OKF) and/or the directorates for disaster management at the county level. The internal regulations provide a framework for the operation, allowing sufficient flexibility to determine the appropriate composition of the groups for different types of events.

There are significant similarities in the structure and activities of the operational working organizations examined in chapter two. In view of this, it is not necessary to maintain the two operational working organizations in parallel unless there is a justification for doing so when handling the event.

Based on my investigations, the operational staff lacks an individual or organisational element solely responsible for reconnaissance tasks, for analysing complex reconnaissance data from multiple directions and channels, and for managing the reconnaissance assets at its disposal. In view of this, it is recommended that such a post be created in the operational groups in order to increase the efficiency of the groups' work.

It can be clearly stated that the MCP systems for disaster management have undergone a significant qualitative and quantitative development in the last 10 years; a total of 27 MCPs or vehicles capable of performing MCP tasks have been installed since 2014, which means that the coverage with MCPs is at a *countrywide* level.

The MCP vehicles are operated under the authority and professional supervision of the industrial safety department of the disaster management agency. However, there is no anomaly on the operator's side and the deployment of MCPs in natural disasters is guaranteed.

Currently, there are two main types of MCPs in the Hungarian disaster management system, namely those installed in vehicles and those using tents.

In the period covered by my paper, the number of extreme weather events has increased not only in terms of quantity but also in terms of complexity, with other agencies typically involved or contributing to the elimination of damage. Such complex interventions have required the creation of operational organizations or groups with a larger number of staff. This requirement is not met by the current MCP vehicles, mainly due to their limited working area.

Due to the cost of mechanical and technical upgrades, it is recommended that preference be given to the design of disaster management solutions with interchangeable superstructures, with a preference for the design using containers.

Existing MCP vehicles are particularly well-suited for local damage elimination tasks to ensure the functioning of both the disaster management operational working organizations and the local level of the defence and security administration.

## **NEW SCIENTIFIC RESULTS**

Based on my research, the hypotheses and the research objectives of this dissertation, I propose the adoption of the following new scientific findings:

1. I analysed the activities of the professional disaster management organisation in relation to the damage caused by extreme weather events, examining and grouping the tasks involved in the phases of preparation and prevention, damage elimination, recovery and reconstruction. I have found that the use of operational groups can increase the effectiveness of interventions during the phases of elimination of damage, recovery and reconstruction.
2. I examined the operational working organizations for disaster management and for protection and security, identified the shortcomings in the organisation of the operational working organizations and formulated concrete proposals for improvement. I developed the minimum requirements for the establishment and recruitment of a specialised reconnaissance function within the working organizations.
3. I analysed and evaluated the MCP systems for disaster management, as well as the domestic aspects of their application, the main requirements for their design and the experience of their use, in order to develop best practices and standard procedures for the existing equipment.
4. I examined the possibilities for the development of MCP systems for disaster management in Hungary, taking into account the current boundaries of the professional disaster management organisation, and proposed development directions that were considered feasible.

## **RECOMMENDATIONS OF THE DISSERTATION**

In my dissertation, I provide a comprehensive overview of the impact of climate change on the frequency of future extreme weather events as well as on disaster preparedness, recovery and reconstruction activities. I explain in detail the protection-related tasks of the operational working organizations of disaster management and the organisation of the defence and security administration. I have demonstrated that the efficiency of the implementation of disaster management operations can be increased by involving the operational working groups where necessary. In the context of extreme events, this is a significant support to those involved in the elimination of damage, as it provides unified command and ensures effective cooperation and coordination with the partner agencies involved, thus creating a unified command and control system that leads to overall effective and efficient management.

Through my research, I have shown that the effectiveness of the operational working organizations can be further increased by making more effective use of the equipment already available, and by integrating and raising awareness of its use. For this purpose, I have proposed to improve the organisation of the operational working organizations for disaster management by creating a reconnaissance post.

Furthermore, I have studied the activities of MCPs, which will allow the development of a standard practice for MCP systems in the case of extreme weather events. I have also looked at ways of improving MCPs that can be implemented cost-effectively and within a short timeframe in the context of the disaster management organisation.

In particular, I recommend that those responsible for protecting against extreme weather events and for operational group work, as well as those involved in legislative and scientific research, familiarise themselves with the results. Moreover, I recommend it to the staff of disaster management and other partner agencies, to the participants in the defence administration, to the lecturers of the Institute of Disaster Management at the National University of Public Service and the Disaster Management Educational Centre, as well as to the students of disaster management courses, because the results of the research carried out provide useful and practical assistance in the implementation of organisational tasks of defence and damage elimination, as well as other tasks that may arise in practice.

## **PRACTICAL USEFULNESS OF RESEARCH RESULTS**

1. Based on this research, the management groups and operational working organizations used during natural disasters can be modernised. By establishing specialised reconnaissance sections/working units within operational groups and the associated training system, the future flow and processing of information within operational working organizations can be accelerated. The use of modernised operational working organizations can significantly increase the efficiency of interventions.
2. Standard operating procedures and methodological guidelines for the management of natural disasters not reaching the stage of promulgation of a special legal order may be developed for the operational working organizations of disaster management, protection and security.
3. The use of modern technical equipment - in particular MCPs - can optimise the implementation of disaster response operations in the event of natural disasters by significantly reducing the time needed to set up and equip the operational groups.
4. An outstanding achievement and best practice to be followed is the systematisation of MCPs that serve multiple purposes. This allows operators to learn how to use the vehicle and its equipment even during peacetime operations.
5. The research results of my dissertation can serve as a useful supplement to the curriculum of higher education in law enforcement and can therefore be incorporated into the curriculum in the form of notes or textbooks (chapters).

## DOCTORAL CANDIDATE'S LIST OF PUBLICATIONS ON THE TOPIC

### Book chapter in Hungarian

GYŐZŐ-MOLNÁR Á.: A katasztrófavédelmi operatív törzsek feladatai tömeges kitelepítés, illetve kimenekítés végrehajtása során „Katasztrófák, kockázatok, önkéntesek” tanulmánykötet Szekszárd, 2020. pp. 157-162. (ISBN 978-615-008-297-1)

*[Tasks of disaster management operational groups during mass displacement and evacuation, “Disasters, Risks, Volunteers” study volume]*

<https://tolna.katasztrofavedelem.hu/application/uploads/documents/2020-05/71152.pdf>

GYŐZŐ-MOLNÁR Á.: Mobil vezetési pontok a magyar katasztrófavédelemben In: Földi, László (szerk.) Szemelvények a katonai műszaki tudományok eredményeiből III. Budapest, Magyarország: Ludovika Egyetemi Kiadó 2022. pp. 121-128. (ISBN 978-963-531-703-5)

*[Mobile command points in the Hungarian disaster management, In: Földi, László (ed.) Selections from the results of military science]*

[https://tudasportal.uni-nke.hu/xmlui/bitstream/handle/20.500.12944/18471/07\\_Gyozo-Molnar\\_Arpad\\_121-128.pdf?sequence=1](https://tudasportal.uni-nke.hu/xmlui/bitstream/handle/20.500.12944/18471/07_Gyozo-Molnar_Arpad_121-128.pdf?sequence=1)

### Journal articles

Articles in other foreign language scientific journals

GYŐZŐ-MOLNÁR Á.: Operation of disaster management operational staff during the elimination of extraordinary weather events. Védelem Tudomány VII. 1. (2022) pp. 1-10.

<https://www.vedelemtudomany.hu/articles/VII/1/07-gyozo.pdf>

In Hungarian A-B category journals, as defined by the Hungarian Academy of Sciences (MTA)

GYŐZŐ-MOLNÁR Á.: Vezetési módszerek gyakorlati alkalmazása a tömeges viharkárok felszámolása során. Hadmérnök XIII. 3. (2018) pp. 477-485.

*[Practical application of command methods in the elimination of mass storm damage.]*

[http://hadmernok.hu/183\\_37\\_gyozo.php](http://hadmernok.hu/183_37_gyozo.php)

GYŐZŐ-MOLNÁR Á.-NÉGYESI I.: Katasztrófavédelmi sugárfelderítő egység mobil vezetési pontként történő alkalmazása. Hadtudományi Szemle XII. 3. (2019) pp. 129-138.

*[Application of a disaster management radiation reconnaissance unit as a mobile command point.]*

<https://folyoirat.ludovika.hu/index.php/hsz/article/view/202>

In Hungarian C-D category journals, as defined by the Hungarian Academy of Sciences (MTA)  
GYŐZŐ-MOLNÁR Á.: Kritikus infrastruktúravédelmi bevetési egységek a katasztrófavédelem alkalmazásában Műszaki Katonai Közlöny Online XXXI. 4. pp. (2021.)

*[Critical infrastructure protection intervention units for disaster management]*

79–90. <https://folyoirat.ludovika.hu/index.php/mkk/article/view/5528/4848>

Articles in other Hungarian scientific journals

GYŐZŐ-MOLNÁR Á.: Mentőosztag gyakorlat végrehajtása Orosháza-Kiscsákón, 2017. február 8-án. Védelem Tudomány II. 2. (2017) pp. 76-87.

*[Rescue team exercise in Orosháza-Kiscsákó]*

<http://www.vedelemtudomany.hu/articles/06-gyozo-molnar.pdf>

GYŐZŐ-MOLNÁR Á.: A védelmi igazgatás helyi szintjének működése, egy törzsvezetési gyakorlat tapasztalatai tükrében. Védelem Tudomány III. 4. (2018) pp. 140-158.

*[Local level functioning of the defence administration, in light of the experience of a command and control exercise]*

<http://vedelemtudomany.hu/articles/08-gyozo-molnar.pdf>

GYŐZŐ-MOLNÁR Á.-MUHORAY Á.: A katasztrófavédelem belvízkárok elleni feladatai Védelem Tudomány IV. 2. (2019) pp. 130-142.

*[Tasks of disaster management against inland water damage]*

<http://www.vedelemtudomany.hu/articles/08-gyozomolnar-muhoray.pdf>

### **Published in Hungarian professional conference publication**

Presentation in own language

GYŐZŐ-MOLNÁR Á.: A katasztrófavédelmi operatív törzsek helye és szerepe a különleges jogrend kihirdetését el nem érő események kezelése során, II. Tolna Megyei Polgári Védelmi Munkaműhely konferencia, Szekszárd, 2019. pp. 58-64. (ISBN: 978-615-00-4954-0)

*[Place and role of operational disaster management groups in the management of events not reaching the promulgation of a special legal order, II. Civil Protection Workshop Conference of Tolna County.]*

<https://tolna.katasztrofavedelem.hu/application/uploads/documents/2020-03/70431.pdf>

GYŐZŐ-MOLNÁR Á.: Mobil vezetési pontok szerepe a katasztrófavédelemben In: Bodnár, László; Heizler, György (szerk.) KONFERENCIAKIADVÁNY, Nemzetközi Tudományos Konferencia a Katasztrófák Csökkentésének Világnapja alkalmából Budapest, Magyarország: Rádiós Segélyhívó és Infokommunikációs Országos Egyesület (2022) 436 p. p. 154

*[The role of mobile command points in disaster management, In: Bodnár, László; Heizler, György (ed.), CONFERENCE PUBLICATION, International Scientific Conference on the occasion of the International Day for Disaster Reduction in Budapest, Hungary: Hungarian National Association of Radio Distress-Signalling and Infocommunications]*

<https://vedelem.hu/letoltes/document/544-isbn-978-615-01-6985-9-konferenciakotet.pdf>

## **OTHER SCIENTIFIC ACTIVITIES**

2008. Zrínyi Miklós National Defence University, Scientific Student Associations' Conference, special prize for the paper "A polgári védelmi kötelezettségen alapuló szervezetek" (Organisations based on civil protection obligations).

2017. Collection and processing of scientific literature related to the research topic.

2019. Research report prepared and accepted for complex examination.

2020. Member of the Hungarian Association of Military Science, Department of Disaster Management and Civil Protection.

## **DOCTORAL CANDIDATE'S PROFESSIONAL AND SCIENTIFIC CURRICULUM VITAE**

Árpád Győző-Molnár, born on 1 September 1985 in Szentes, Hungary. He graduated from the Zrínyi Miklós National Defence University in 2009 with an MSc degree in Defence Administration, specialising in disaster management. In the same year, he began his professional career as a detective at District X of the Budapest Metropolitan Police (Hungarian abbreviation: BRFK).

In 2011, he was transferred to the Békés County Directorate for Disaster Management, where he held the positions of Chief Prevention Officer, then Chief Organisation Officer and finally County Duty Officer.

From 15 September 2014, he was first commissioned and then appointed as a Civil Protection Supervisor at the Orosháza Branch of the Disaster Management Office.

In 2015, he completed the Law Enforcement Management training course at the Ministry of the Interior's Directorate General for Education, Training and Scientific Organisation. From the same year, he has been the deputy chairman for disaster management at the Local Defence Committee of Mezőkovácsháza.

In 2017, the mayor of Kardoskút honoured him for his contribution to the community.

In the academic year of 2019/2020, he was a visiting teacher at the Mikes Kelemen Catholic High School and Vocational School, Primary School and Kindergarten in Battonya.

In 2017, he was admitted to the Doctoral School of Military Sciences at the National University of Public Service, in the field of Disaster Management. His supervisor: Professor Emeritus Dr. János Bleszity CSc retired Fireman Lieutenant General. His scientific research was based on the management and improvement of damage elimination during extreme weather events, drawing heavily on his own professional experience. He has passed the complex examination and obtained the required credits and publication points. He has no passive semesters.

Married, father of two daughters, Éva and Sára.

Budapest, 31 August 2023

**Árpád Győző-Molnár, Fireman Lieutenant Colonel**