

**'ZRÍNYI MIKLÓS'**  
**NATIONAL DEFENCE UNIVERSITY**  
**DOCTORAL BOARD**

Brigadier General László VARGA, MSc

**Employment of Hungarian Ground Based Air  
Defence Units and Requirements of the Alliance**

Resume of PhD Thesis

Budapest  
2010

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Supervisor: Dr. habil. László RUTTAI, CSc

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Nowadays the 12<sup>th</sup> Arrabona Surface-to-Air Missile Wing – the only stand-alone GBAD<sup>1</sup> unit of the Hungarian Air Force – comprises all Surface-to-Air Missile formations of the Hungarian Armed Forces. The mission of those is defined by coherent system of doctrines. All the doctrines reflect on the Doctrine for Joint Operations: „The whole system of air defence must be capable to conduct operations as part of the NATO Integrated Air Defence System.”

## **I ACADEMIC PROBLEM DEFINITION**

The formulated academic problem can be divided into three strongly interdependent parts.

1 Does the current status of the Ground Based Air Defence forces make possible their employment in operations in allied environment (as part of the multinational forces) in homeland, inside or outside of the territory of the Alliance? Do the forces have all capabilities (proficiency, training level achieved, structure and condition of their weapon and other systems) needed for employment in allied operations?

2 Is the current status of the Hungarian GBAD Forces enough for employment of a certain unit designated for a defined mission inside of or outside Alliance territory? If there are further tasks to be completed in addition to the current status, how those can be described? Are the descriptions general enough and can they be applied as a method for other intended missions?

3 The cornerstone of the contribution of Republic of Hungary to the collective security is the capability to be

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<sup>1</sup> GBAD – Ground Based Air Defence

employed and the employment in allied operations of the Armed Forces (including GBAD) or Component Forces of those. Based on the analysis of the environment – within the range of which the GBAD Forces of Hungarian Air Force have to operate – and challenges – those are to face to – it is possible and necessary to ensure capability for future development and to describe possible directions of development.

## II RESEARCH TARGETS

1 **To gain and conclude** the main statements of Hungarian military science concerning integration of the Armed Forces into NATO military structure (including integration of Hungarian GBAD Forces into NATINADS<sup>2</sup>). **To examine and analyse** requirements the Hungarian GBAD Forces have to meet when employed in allied environment.

2 **To assess** capabilities of Hungarian GBAD Forces, most important and relevant from point of the employment in allied environment results of their capability-development before and after joining NATO based on Forces Standards of the Allied Command Operations.

3 **To describe** the main steps of the preparation of a Hungarian unit (detachment) for an identified mission as a response for a force generation request initiated by allied headquarters; herewith **to give a method** for the preparation of other deployable GBAD units (for other missions) designated or intended to be designated in the future or even for units of other arms or joint formation.

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<sup>2</sup> NATINADS – NATO Integrated Air Defence System

4 **To summarise** the most attractive new challenges which may inflict dominant impact on the further capability development of the Hungarian GBAD Forces, **to testify** the necessity and **to outline** possible directions by analyzing capabilities (development in proficiency, in technical and training areas) resulted by the capability-building process and employability of forces possessing the capabilities.

### III HYPOTHESES

1 As a result of progression after changing political regime – especially after joining NATO – the status of the Hungarian GBAD Forces are able to meet the requirements of Forces Standards, needed for their employment in allied environment, as the consequence of their proficiency, training level, flexibility and modularity of their structure, status of their assets (first of all command and control systems).

2 The above mentioned above status of Hungarian GBAD Forces is only a compulsory but not a sufficient condition of their employment. A designated deployable unit can be employed for a multinational mission only after a special training (preparatory) process designed for this mission. The most important and inevitable steps of the preparation can be described and recommended as a general method (procedure) for (not only GBAD units but) other formations for other missions.

3 Based on the comparison of capabilities of Hungarian GBAD Forces and new challenges concerning the security of the Alliance (of the World), the possible alternate routes of the capability-building of Hungarian GBAD Forces can be defined. The necessary tasks can be

divided into two parts: short- and long-term ones. The short-term tasks serve allied designations and long-term tasks relate to participation in common advancement of NATINADS. This development is essential for the Republic of Hungary to give a sensible and respected by other nations contribution to the collective security of the Alliance (and the World); to face to future challenges against allied forces.

#### **IV METHODOLOGY**

The following methods were used during my research to achieve the above listed research targets.

Besides systematical collection and studying of extensive topic-related professional literature, special emphasis was put on the observation of every-day technics and on the adaptation of empirical information.

General supporting methods (examination cause and consequence relation, working out from the simple towards to the difficult and vice versa, generalisation, summarisation, conclusion) were used to fulfil goals.

In addition to the above I had the opportunity to take part on different conferences where I could discuss my presentation conclusions with other experts of this area.

Arising from my duty engagement I was participant of and involved in the capability development (exercises, courses, assessments and evaluations) of Hungarian GBAD Forces. The experience gained denoted useful empirical information and significant knowledge base to my research.

Results of my research and some aspects of my Thesis were published in national periodicals in Hungarian and in English.

Several consultation events with respected representatives of armed forces of other allied nations were held. It was a worthwhile contribution to the adaptation of lessons learned by other allied nations.

## **V STRUCTURE OF THE STUDY**

In the Introduction (part) of the study besides outlining the academic problem, research targets, methodology and hypotheses, a general overview of Hungarian GBAD transition process of the before and after joining NATO is given.

The First chapter is dedicated to the examination and summary of topic-related basic findings, epistemological fundamentals in respect of national and allied publications and to the description of main Alliance requirements GBAD troops have to meet.

Academic basis and practical steps of the integration of Hungarian GBAD units into NATINADS are also explained in the fields of proficiency and compatibility in technical, structural and procedural areas.

In the Second chapter the most important and presumably necessary (proved by the experience of the Hungarian GBAD) steps of preparation of a declared unit for a real mission are given.

With the description of main steps of the preparation process, the necessity of such a preparation process is proved. At the same time this process can be similar for the units intended to be deployed or employed in homeland (even for units of other arms).

In the Third chapter the new challenges the Hungarian GBAD Forces (units, detachments, command elements) are facing now and are going to face in the

future are summarised. Based on those that seemed necessary capability-building ways and possible further steps are explained.

Conclusions stated in the end of each chapter and final conclusions form the fundament of the values added.

The Thesis ends with final conclusions on verification hypotheses, on fulfilment research targets. Recommendations concerning further researches and utilisation of the Thesis are given.

Exploiting topic and writing Thesis the summary and analysis of the epistemological fundamentals of Hungarian GBAD integration into NATINADS are done. The most important requirements, stated in Forces Standards and those the Hungarian GBAD units have to face in multinational (allied) environment are examined and detailed.

The most important results of the capability-building process of the Hungarian GBAD Forces before and after joining NATO and relevant from point of view employment of those in allied mission are assessed and evaluated in the light of the requirements of the Forces Standards.

The most important steps of the preparation of a provisional detachment (created as the answer of the nation for an allied request) are described. As a consequence of this a method (a procedure) is formulated for creation and preparation of such a GBAD unit or even a joint formation, designated (or to be designated in the future) by the nation as deployable or non-deployable (in-place) force.

Analysing capabilities (proficiency of personnel, equipment and training level) available after capability-creating process, possible deployment of such a unit, the challenges the designated Hungarian GBAD detachments



are going to face in the near future, are characterised and because of the impact of those on the future capability-development process the possible directions of their further advancement are indicated.

## **VI FINAL CONCLUSIONS**

The essential condition of the employment of Hungarian GBAD detachments in homeland, inside or outside of the territory of the Alliance, in multinational (allied) environment is the integration of those into NATINADS. The needful for that knowledge in the Hungarian GDAB is available. The available resources delimit only the number of units designateable at the same time.

The knowledge for the employment of units is available and sustainable. The desirable detachments are able to apply this knowledge, based on which the designated Hungarian GBAD units can be employed together with similar formations of other nations in NATINADS.

The ability of Hungarian GBAD Forces to be integrated into NATINADS in general is only the necessary but not the sufficient condition of the ability of a designated unit to be employed. The readiness to be employed can be achieved via a mission-oriented capability-building (capability-creation) process.

The most relevant steps of a capability-building process are the mission statement, capability-description, preparation and evaluation. These steps are similar for units either intended to be employed in homeland or abroad. The steps interact and give a permanent feedback in favor of systematic refining capabilities, actions

needed, preparation and allocated resources. Accordingly the sequence of steps can be recommended as a method (a procedure) for capability-building of GBAD Forces. The method can also be applied for non-GBAD units designated for other missions.

Opposing the Hungarian GBAD units' capabilities to the requirements of Forces Standards and change of the air threat the main course of the advancement of the Hungarian GBAD Forces can be outlined. Due to experience gained in the process of the preparation of the first designated for allied mission deployable unit the proficiency of personnel needed for that or even for possession of future technologies is on hand.

In the short run the creation and maintenance of conditions for employment of designated units are unavoidable. It is the key for maintenance and evolution of the proficiency of personnel as well. In the long run the advancement and evolution of the Hungarian GBAD capabilities is the indicator and depends on how the nation intends to share allied efforts in the advancement of the NATINADS.

## **VII VALUES ADDED**

1 **Conclusions** of the evolution of Hungarian GBAD Forces. **Summary** of efforts and results of Hungarian GBAD Forces in order to be integrated into NATINADS. **Demonstration** of the ability of Hungarian GBAD Forces to create and deploy formations capable to be employed together with similar units of other allied nations via comparison of above mentioned results and requirements of Forces Standards.

2 **Description** of the mission-oriented preparation process of a deployable Hungarian GBAD detachment designated for allied mission, specification of the most important steps of the process and **exposition** of main step contents of taking postulates of Forces Standards into consideration. **Elaboration** of an in practice evaluated method (procedure) recommended for capability-building of GBAD units intended to be employed in allied environment.

3 **Verification** of the necessity of further evolution of Hungarian GBAD troops conceived as part of Hungarian contribution to the advancement of NATINADS and to the collective security, **presentation** of the presumable ways of the advancement of these forces.

## VIII RECOMMENDATIONS

**For possible further research** studies the exploration of questions regarding preparation of other GBAD units for other missions can be proposed. Corresponding to the listed elsewhere ambition of Hungarian Armed Forces – according to that the air defence of the designated land forces must be achieved employing needed Hungarian GBAD modules – the research target mutatis mutandis can be nominated as the study on the preparation of such a modul. Likewise before stated the employment of the Hungarian GBAD in homeland in crisis response or Article 5 operations not excluding other topics deserving further elaboration may give valuable new pieces of required knowledge.

Certain parts of the Thesis may be **recommended** first of all for military Higher Education with a view to obtain by cadets necessary up-to-date information on the

questions that may be the central issue of their early years military career. Probably the soldiers working on similar tasks and missions in the units may find certain parts of the Thesis useful.

## **IX UTILISATION**

Meeting the Thesis I believe GBAD officers and leading NCOs get a fear feedback about their enormous efforts exposed last years. They may be convicted of the fact that the pieces of knowledge collected owing to their efforts and activity at all last years were systematised. Thereby this knowledge can be utilised in training and advanced studies of officers and NCOs in leading positions.

Applying proposed method other GBAD or other arm representatives may build their presumably necessary capabilities on the practice-proved way, learning from predecessors and avoiding the faults comitted by those going frontwards.

## **X RESEARCH RELATED PUBLICATIONS**

Items for periodicals:

1 A légvédelmi rakétadandár strukturális kompatibilitásának néhány kérdése (*Few Organisational Issues of the Air Defence Artillery to Be Compatible*) Hadtudomány ISSN 1215-4121 2003/1 pp 53-58

2 A légvédelmi rakétadandár integrációs tevékenységének kezdetei (*Initial Activities of the Air Defence Artillery to Be Integrated*) Nemzetvédelmi Egyetemi Közlemények ISSN 1417-7323 2003/3 pp 65-70

3 Nyelvképzés a légvédelmi rakétadandárnál (*Language Training in the Air Defence Artillery*) Humán Szemle ISSN 1219-929X 2003/1 pp 120-125

4 A 2K12 (KUB, SA-6) légvédelmi rakétarendszer hadrendben tartásának feltételei (*Conditions of Keeping in Service of the SA-6 Air Defence Weapon System*) Nemzetvédelmi Egyetemi Közlemények ISSN 1417-7323 2007/3 pp 99-109

5 Modernizáció és éleslövészet In.: A Légierőnél várható fegyverrendszer váltás szükségessége, hatása az üzemeltetésre (*Modernisation and Live Firing In.: Necessity and Impact on the Operations of the Expected Change of the Weapon Systems in the Air Force*) Katonai Logisztika ISSN 1588-4228 2002/4 pp 205-209

6 A hadtudomány művelőinek néhány gondolata a diszciplínáról (*Few Ideas of the Representatives of the Military Science on the Subject*) Hadtudományi Szemle ISSN 2060-0437 2009/1 pp 1-8

7 Környezetbiztonság, katasztrófa-elhárítás, stratégiák (*Environment Safety, Disaster Relief, Strategies*) Új Honvédségi Szemle ISSN 1216-7436 2007/11 pp 32-42

8 A K-1P légvédelmi rakéta tűzirányító rendszer (*Fire Control System K-1P*) Nemzetvédelmi Egyetemi Közlemények ISSN 1417-7323 2007/3 pp 44-58

9 A Mistral-saga folytatódik (*The Mistral Saga Is Going On*) Hadmérnök ISSN 1788-1919 2009/1 pp 120-128

10 A légvédelmi rakétadandár Észak-atlanti Szerződés Szervezete integrált légvédelmi rendszerébe való beillesztésének lehetőségei (*Possibility of the Air Defence Artillery to Be Merged into NATO Integrated Air Defence System*) Zrínyi Miklós Nemzetvédelmi Egyetem, Budapest 2002 Egyetemi Központi Könyvtár Kézirattár pp 1-57

11 New Capabilities of the Hungarian Ground Based Air Defense Forces (*A magyar légvédelmi rakéta erők új képességei*) Academic and Applied Research in Military Science ISSN 1788-0017 Volume 7 Issue 4 pp 633-645

12 A légvédelmi rakéta erők alkalmazásának időszerű kérdései (*Present-Day Issues of the Ground Based Air Defence*) Repüléstudományi Közlemények 2008/Különszám ISSN 1789-770X ([http://www.szrfk.hu/rtk/Különszámok/2008\\_cikkek/Varga\\_Laszlo.pdf](http://www.szrfk.hu/rtk/Kulonszamok/2008_cikkek/Varga_Laszlo.pdf) 14 September 2009) pp 1-11

13 A biztonság és a légvédelmi rakétások (*Security and the Ground Based Air Defence*) Nemzet és Biztonság ISSN 1789-5286 2009/4 pp 44-56

14 A légvédelmi rakéta és tüzér fegyvernem története (*History of the Hungarian Ground Based Air Defence*) Honvédelmi Minisztérium Zrínyi Kommunikációs Szolgáltató Kht. Budapest 2005 (<http://www.oszk.hu/mnbwww/K/1118/S.HTML#9230>) pp 1-23

## Presentations at conferences:

1 A földi telepítésű légvédelem alkalmazási lehetőségei a terrorizmus elleni küzdelemben (*Possible Missions of the Ground Based Air Defence in Fighting Terrorism*) In.: A nemzetközi terrorizmus elleni harc időszerű társadalmi, katonai és rendvédelmi kérdései konferencia (*Conference on the Present-Day Social, Military and Law Enforcement Issues in Fighting Terrorism*) Zrínyi Miklós Nemzetvédelmi Egyetem, 6 November 2007, Budapest

2 A légvédelmi rakéta erők alkalmazásának időszerű kérdései (*Present-Day Issues of the Employment of the Ground Based Air Defence*) Repüléstudományi konferencia 2008 – 70 éves a Légierő (*Conference on the Remembrance of the 70<sup>th</sup> Anniversary of the Hungarian Air Force*) Zrínyi Miklós Nemzetvédelmi Egyetem, 11 April 2008, Szolnok

3 A légvédelmi rakéta fegyvernem helyzete és időszerű kérdései (*Present-Day Status and Issues of the Ground Based Air Defence*) Légierő tudományos és szakmai konferencia (*Professional Conference of the Hungarian Air Force*) Összhaderőnemi Parancsnokság – Hadtörténeti Intézet és Múzeum, 22 May 2008, Budapest

## **XI MILITARY RESUME OF THE AUTHOR**

### ***PERSONAL DETAILS***

Name	<b>László VARGA</b>
Rank	Brigadier General
Date of Birth	16 February 1955
Place of Birth	Szombathely Hungary
Nationality	Hungarian

### ***ASSIGNMENTS***

<b>2001–2010</b>	Commander, 12 <sup>th</sup> Air Defence Brigade/ Surface-to-Air Missile Wing (Győr Hun- gary, Air Force)
<b>1997–2001</b>	Chief of Staff, 12 <sup>th</sup> Air Defence Regi- ment/Brigade (Győr Hungary, Air Force)
<b>1979–1997</b>	junior and leading positions in logistics, 7 <sup>th</sup> Air Defence Regiment (Keszthely Hungary, Army, since 1991 Air Force)

### ***EDUCATION***

<b>1973–1979</b>	'Sergey Mironovich Kirov' Air Defence Artillery Military College (former Soviet Union, Kiev Ukraine) MSc, radioelectronics (Honours)
<b>1969–1973</b>	'Nagy Lajos' Grammar School (Szombat- hely Hungary) Leaving Exam



### ***COURSES COMPLETED***

- 2003** Security Policy for General and Flag Officers (NATO Defence College, Rome Italy)
- 2001–2002** High Military Leadership – General Staff ('Zrínyi Miklós' National Defence University, Budapest Hungary)  
Certificate 'Primus Inter Pares'
- 1999** Staff Officer Course (6<sup>th</sup> Surface-to-Air Missile Wing GERAf, Lenggries Germany)
- 1995** Employment safety of weapons systems ('Zrínyi Miklós' Military Academy, Budapest Hungary)
- 1994** Military Logistic Management ('Zrínyi Miklós' Military Academy, Budapest Hungary)
- 1990** Military Logistics ('Zrínyi Miklós' Military Academy, Budapest Hungary)
- 1986–1987** Ground Based Air Defence Operations ('A. M. Vasilevsky' Air Defence Military Academy of the Land Forces, former Soviet Union, Kiev Ukraine)
- 1981** Surface-to-Air Missile System Employment ('A. M. Vasilevsky' Air Defence Military Academy, former Soviet Union, Kiev Ukraine)

### ***POSTGRADUATE EDUCATION***

- 2006–2009** 'Zrínyi Miklós' National Defence University, Budapest Hungary, PhD Studies

### ***LANGUAGES***

- Hungarian (native)
- English (advanced, STANAG 6001 SLP 3333)
- Russian (advanced)

### ***AWARDS AND DECORATIONS***

- Awarded by The Minister of Defence  
9
- Awarded by The Minister of Environment and Water  
1
- Awarded by The President of Republic of Hungary  
1

### ***YEARS OF PROMOTIONS***

**2002** Brigadier General  
**2001** Colonel  
**1991** Lieutenant Colonel  
**1987** Major  
**1983** Captain  
**1979** First Lieutenant

### ***MEMBERSHIP OF SCIENTIFIC BODIES***

**2004–** Hungarian Military Science Society (Air Force Panel)

### ***TEACHING ACTIVITY***

**2003–** High (General Staff) Military Leadership Courses, 'Zrínyi Miklós' National Defence University, Budapest Hungary

***TUTORIAL TITLE***

**2009–** Honorary Reader ('Zrínyi Miklós' National  
Defence University, Budapest Hungary)

***PUBLICATIONS***

- PhD Thesis (Research Topic) related Peer-reviewed  
Papers  
13 Items (Military Periodicals, authorship 13x100%)

Self-published Issue

1 Item

([www.oszk.hu/mnbwww/K/1118/S.HTML#9230](http://www.oszk.hu/mnbwww/K/1118/S.HTML#9230))

Conferences (presentations)

3 Items

- Other Peer-reviewed Papers  
4 Items (Military Periodicals, authorship 4x100%)

Study

1 Item (Tender of the Air Force Command 2006,  
authorship 1x100%)

1 June 2010, Budapest