NATIONAL PUBLIC SERVICE UNIVERITY
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Author's expositive to the doctoral dissertation

NEW DEPLOYMENT POSSIBILITIES OF HELICOPTERS IN THE INTEREST OF SUPPORTING LAND OPERATIONS OF COMBINED JOINT TASK FORCES

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The changed security political environment of the period following the Cold War entailed the transformation of armed forces, particularly the decrease in numbers of personnel and equipment.[1] New challenges appeared, or the significance of well known ones, like terrorism, increased.[2] In most cases, military strategists[3] face the problems of asymmetric warfare and the responses it demands. Land forces' operations had to adapt to the requirements of asymmetric warfare.

In the interest of ensuring quicker reaction and continuous support, the deployment and operational availability of helicopters and related procedures has attained greater importance. The multi-polar world order demands that operations be conducted under UN[4] or OSCE[5] mandate and executed by combined forces under a unified command.

Since the most likely response in future conflicts will be land operations by combined joint task forces supported by helicopters, it would be most practical in the course of the current transformation of the Hungarian Home Defence Forces, which can now be viewed as a continuous process, to modernise the helicopter forces, whether targeting the areas of personnel, technique or training according to my theses outlined below.

I intend to make a case for the raison d'être, the complexity and the advantages of practical applications of new helicopter procedures adopted by the Hungarian Home Defence Forces. I will prove that we owe what we have achieved so far on the international stage to the introduction of the new procedures and the changes in our approach.

I will demonstrate the truth of my hypothesis that changes in our approach will result similar changes on the human side, too. The principle of 'horses for courses' can prevail in the objective system of selection I proposed years ago.

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[1] This is mainly applies to countries in the Euro-Atlantic region. Elsewhere, like in peru, India, Pakistan, China and several Arab countries, the military dimension has been gaining significance for some time.

[2] This challenge is not exclusively military by nature, but, based on a unified strategy, it has a mainly military, police-related, economic, financial and social aspect.

[3] *Magyarország Nemzeti Biztonsági Stratégiája.* (Hungary's National Security Strategy) - In. Magyar Közlöny, 2012. évi 19. szám, A Kormány 1035/2012. (II. 21.) Kormány Határozata, Magyarország Nemzeti Biztonsági Stratégiájáról (Government Resolution on Hungary's National Security Strategy) 33.pont

[4] UN – United Nations

[5] OSCE – Organisation for Secrity and Co-operation in Europe

I will cite the results of three years to prove that, with the method of objective selection I developed and launched, in spite of flying few hours, we can still find the pilots-in-command, who not only meet the criteria for that position, but can later be trained quicker and more effectively in the interest of attaining full combat readiness (CR[6]) and completing CJTF tasks more effectively. Having pilots-in-command with excellent theoretical background and outstanding flight skills who are capable of solving problems with multiple levels of complexity guarantee that joint task forces following new procedure will successfully complete their tasks, which means we can confidently deploy them in joint task forces to conduct operations stemming from their original purpose, or other complex ones involving helicopters.

Selecting the right candidate, of course, doesn't mean that our work is done. Training and preparing them is highly important, and incorporates all the opportunities of our age. Modern methods include the use of flight and tactical simulators, night vision goggles and online data sharing and tasking systems which aid training and retaining skills.

Mentoring in operational flying and training demonstrates amply that, although the Afghan Air Force (AAF[7]) had received helicopters, it was only with the assistance of advisors from countries operating similar types (the Czech Republic, Croatia, Hungary) that the training of ground personnel and aircrews could be completed. In my dissertation, I will present the experience of AMT[8] és AAT[9] to date and the influence it has had on our training and preparation.

A separate chapter is devoted to examining and analysing conducting helicopter combat activities in built-up areas in support of ground troops. This is the area which may have seen the greatest improvement. It was regrettable events that have made us rethink our combat procedures and tactics. We've had to learn that it matters where, with what force, and against whom the fight is fought. I will demonstrate the significance of fighting in built-up area and the shifting of the battlefield to inhabited areas with examples from practice using new procedures in accordance with my thesis.

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[6] CR - Combat Ready – trained pilot deployable without restrictions
[7] AAF - Afghan Air Force (AAP-15 Glossary of abbreviations used in NATO documents, 2012 – p. 42.)
[8] AMT – Air Mentor Team
[9] AAT – Air Advisory Team

In my analysis, I pay special attention to the challenges of flying in extremely high temperatures and the effects of global warming on aviation, because these may greatly influence the requirements of training and preparation in the next few years.

It was through the loss of human lives that the Hungarian Home Defence Forces had to learn the lessons of asymmetric warfare. The significance of escorting convoys with helicopters has been detailed in several domestic and international professional journals.[10] The absence of helicopter escort for route columns has cost Hungarian troops their lives.[11] Evaluating experiences and following procedures could have greatly increased the chances of survival. I highlight the fact that experience gathered during task completion must never go unnoticed; they need to be processed and incorporated into daily training and preparation, and utilised in the future.

By looking at ongoing missions, I address a possible future and its perspectives, making those propositions referred to in the chapters of my dissertation. The final part includes the appendices, the list of abbreviations containing those in the footnotes in one table, and the works cited.

I concluded collecting the information forming the basis of my piece of work on 30th September 2011, while the script modified on the basis of the remarks and suggestions made at the opponents' discussion was completed on 30th July 2012.

The summaries of the chapters of my PhD dissertation are as follows:

MY THESES

1. it is my thesis that, although the **principles of CJTF** have basically stayed the same, the basic concept **has evolved** as regards the level of operational deployment, so we can only encounter CJTF-type operations. Therefore, I propose changing CJTF terminology. Furthermore, the scope of helicopter procedures to be applied in support of land forces needs to be broadened and procedures meeting the new challenges need to be developed and practised at **domestic and multinational exercises**. The latter are an **indispensable component** of the training of personnel. personnel.

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[10] Janes's International Defence Review 2007. decemberi szám, - p. 32-38.
[11] *Magyar konvojt támadtak meg Afganisztánban.* MTI hírarchívum 2010.08.23, http://www.mti.hu/Pages/Default.aspx?lang=hun (Mentés: 2011. 05. 10.)

2. it is my thesis that the key element of the success of combined joint operations is the well selected and thoroughly trained soldier. New challenges demand that aircrews be selected during basic training, on **initial entry**, or, ideally, co-pilot and operator training.[12] Those selected can be trained fully qualified, combat ready pilots by utilising modern technology, like **flight simulators and combat simulators**, and cost-effectively, using minimum flight time.
3. my thesis is that tactical procedures must be adapted to the demands of new types of tasks and operations, because mission area experience suggests that present and future conflicts will almost always be fought in hot or **extreme weather conditions, in or near towns and built-up areas**. In addition, the protection of convoys is vital. A key role in these operations is the helicopter, which is capable of rapid and easy movement and immediate deployment.
4. my thesis is that, **in terms of human resources,**[13] **the helicopter capability currently available in Hungary meets the expectations** of NATO and partner countries. The significance of selecting, assessing and training aircrews and that of the theoretical development and conducting of combined exercises have increased greatly. In the area of **mentoring in missions in Afghanistan, we have very high standard, internationally recognised capabilities**. A solution to preserving our capabilities can be joint thinking with partner organisations at national or regional level and formulating a **unified helicopter concept**.

1. USING HELICOPTERS ACCORDING TO CJTF PRINCIPLES

In spite of the uncertainties related to security policies detailed in my dissertation, the states of the Alliance had to make a move and develop a new, applicable concept and set up the forces and capabilities necessary for its implementation.

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[12] For decades, pilots-in-command selection was based mostly on the principle of 'seniority'

[13] What I consider human resources is the theoretical knowledge, training and mentoring experience related to combat procedures and principles of application, and the commitment and morale of personnel.

This obligation, made even more pressing by the Yugoslav conflict, led to the inception of the CJTF concept. Its developers were striving for a permanent force dedicated to completing military tasks, available even in peacetime. This was a departure from earlier NATO forces, basically trained for executing sustained area defence tasks.[14]

Adhering to the CJTF concept and its strategic level details did not produced the desired results. The difficulties of responding at the strategic level and the time it required made strategists modify their idea. Experience showed that it was necessary to apply the CJTF principle to creating smaller units which can be deployed faster.It was these requirements that led to the development of rapid reaction.However, CJTF itself does not stand for what it was defined as in 1996; the terminology has changed.

The non-operational interpretation of CJTF, as highlighted by operations in Afghanistan, is characterised by battalion level units completing CJTF-type tasks aided by air support. In current terminology, this is referred to as the already mentioned CJTF, as well as CJSOTF, CJCMTF and TF tasks. I demonstrated the modified meaning through empirical examples based on information from the ISAF IJC operations centre.

2. TRAINING, PREPARATION AND EXERCISES

Tasks carried out in a multinational environment with the co-operation of several services present a great challenge for all troops. In addition to good preparation, human characteristics, innate and acquired capabilities can play a major role in the success of multinational co-operation. It is carefully selected and thoroughly trained soldiers that can guarantee the success of combined joint operations.[15]

I made a comparison between selecting the suitable pilot-in-command and selecting the soldier successful in completing CJTF-type tasks.

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[14] CSABAI György: *A NATO többnemzetiségű erői.* - In. Új Honvédségi Szemle, 1997. 4. sz. - p. 14.
[15]Dr. KURTA Gábor: *Légierő-hadművelet elmélet.* – In. Egyetemi tankönyv. Zrínyi Miklós Nemzetvédelmi Egyetem., Budapest: 2000.
http://193.224.76.4/download/konyvtar/digitgy/legiero/2.html II./2. (Mentés: 2011. 11. 02.)

According to my theory, if pilots-in-command- are selected from among co-pilots and operators using the method of multi-aspect decision analysis, the system of selection criteria will enable us to find the most suitable candidates, who can be trained to become pilots-in-command deployable in multinational environments using less flying hours, in shorter time and with lower costs. My theory is supported by empirical evidence from flying and international experience.

Regrettably, Hungary is not yet in possession of helicopter simulators and tactical simulators that could significantly improve the quality of our training. The simulator is a tool for low-cost flight training and for practising dealing with high priority unusual incidents. In addition to flight parameters, weather conditions can also be preset, which presents pilots with an excellent opportunity to practice flying in extreme high conditions and landing in high altitude mountains. Russian experience in Afghanistan[16] is ample warning that climatic conditions are not to be underestimated. The systematically collected recommendations in my dissertation serve as a solid basis for preparation and the completion of exercises. The weight calculation chart I revised and presented in Appendix 3 aids aircrews in making precise engineering calculations. I lead the development of an electronic weight calculation software[17], which makes the calculations faster and more accurate. Unfortunately, however, technical difficulties prevent me from incormorating it into my dissertation.

The last phase of training and preparation sees a unit proving its preparedness at a multinational exercise in front of an evaluation committee[18]. Joint exercises highlight the difficulties of execution in expected live conditions. Plnning and executing our exercises, we keep making the same mistakes year by year. In the absence of combined joint exercises, the mistakes made in peacetime will cost human lives in live missions.

Exercises are to be planned so that, preferably, the full range of the comprehensive system of helicopter tasks be a feature in its operational plan.

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[16] МАРКОВСКИЙ, Виктор: *Ми-24 в Афганистане.* Уголок неба. № 1 2004. http://www.airwar.ru/history/locwar/afgan/mi24/mi24.html (Mentés: 2011. 08. 10.)

[17] A software also running on smart phones currently in use. Members of Air Mentor Team 7 assisted in the its development.

[18] TACEVAL – Tactical Evaluation

3. SUPPORTING LAND UNITS WITH HELICOPTER FORCES

Analysing supporting land units with helicopter forces, the two most important areas, close air support and supporting land troops in fighting in built-up areas, cannot go unexamined. Although both have been discussed in professional publications, I considered it important to summarise the different points of view and update them using recent experience, thereby creating a comprehensive and complex new piece of work which can be used during both preparation and the execution of tasks. The effects of demographic tendencies and strategic dangers, as well as the intention of potentially hostile forces to draw allied troops into urban environments are now clear. Based on land forces' doctrine, our troops try to avoid, or isolate inhabited areas. The question is whether our potential enemy will allow them to exploit this. Avoiding causing unintentional damage to the civilian population wherever possible will remain a part of our strategy. The presence of international media makes it possible to use civilian casualties for propaganda purposes, as seen in Iraq, Afghanistan, or Kosovo. However, efforts to avoid causing civilian casualties do have a price. Until suitable technology that can be used in urban warfare without restrictions appears, air forces, more specifically helicopters are the only solutions in such cases.

NEW SCIENTIFIC RESULTS

1. **I demonstrated** that, in response to new types of challenges, aircrews have to be selected according to human, technical and training criteria during basic training, initial selection, or, ideally, during co-pilot or operator training, and, using modern technical support like flight simulators and tactical simulators, they can be trained to become fully combat ready pilots cost-effectively with relatively few flying hours. I **proved** that objective selection and possibilities of advancement, transparent to all candidates, creates such competition that has a positive effect on continuously high levels of up-to-date professional knowledge and bring about higher morale.

2. **I analysed and proved** that, in the interest of supporting land-based CJTF operations, it was necessary to expand helicopter procedures, to develop **new** procedures of application different to earlier ones and to **practice them at domestic and international exercises**. I demonstrated the terminological changes of CJTF.

I supported my thesis by presenting operational principles and procedures, and **experience coming from international exercises**.

3. **I proved** that helicopter forces will have to be given special attention in the conflicts of the near future. **I examined and proved** that a significant proportion of major operations in current and future military conflicts will very likely be fought in urban, inhabited and built-up areas, mostly **in extreme weather conditions**. **I showed** that the agile and immediately deployable helicopter has become a key element in the high standard execution of **urban warfare**, a well-known tactical concept. **I demonstrated through the analysis of real examples** that combat and light combat helicopters are **an indispensable means of protecting and supporting route columns** of moving troops in theatres of war and in mission areas.

4. **I examined and proved** that Hungary's helicopter capability can make its stand among both NATO and non-NATO countires. This capability can be preserved through the implementation of the unified helicopter concept. Processing mission experience, **I demonstrated and proved** that, in spite of the few flying hours per person, we have outstanding achievements in **mentoring** on the international stage. Analysing tactical and operational mission experience and lessons learned, I **pointed out** that a significant part of our tactical procedures need rethinking, and, after evaluating the experience, modifying.

APPLICABILITY OF THE DISSERTATION

In my opinion, my dissertation can be used in the course of teaching topics related to using land and air forces in war operations and operations other than war, incorporated into the educational program of Nemzeti Közszolgálati Egyetem (NKE).

The results of the procedure for selecting pilots-in-command outlined in my dissertation have been proving the usefulness of the method for years. I suggest that the tested procedure be centrally introduced and followed in pilot selection for both fixed-wing and rotary-wing aircraft.

I summarised the experience from multinational exercises conducted in recent years, which can serve as a solid basis for the planning and execution of exercises in the next few years.

Our pilots fly helicopters in Afghanistan, and our ground personnel operate them. I recommend the use of my Chapter 2.2.2., related to flying and operating aircraft in extreme weather conditions, in their training. I consider it practical to use the topic of urban warfare in related courses of NKE and in the training and preparation of personnel on their way to special missions. Furthermore, I suggest that the achievements and experience of AAT and AMT be incorporated into the above, in order to improve them.

The unified helicopter concept may serve as a solid basis for co-operating with associated organisations. I recommend that the proposition be implemented following consultation, since it can be a professionally sound 'escape heading' in current and future periods characterised by insufficient funds.

I trust that those preparing and making decisions and others concerned will read, interpret and use my dissertation in the interest of making sound decisions. I am confident that adopting principles for using helicopters in new ways will contribute to enhancing the possibilities and capabilities of the helicopter forces of the Hungarian Home Defence Forces. The limited (financial) resources we can expect to have access to in the future can be put to more effective use with the help of the reslts of my dissertation; allocating resources and efforts where they are needed most may increase efficiency and cost-effectiveness, which will result in the realisation of the most effective solutions.

My publications in the theme of the dissertation:

Books:

1. PADÁNYI József, KOHUT László, KOLLER József, LÉVAY Gábor: *Az éghajlatváltozás hatása a biztonságra és a katonai erő alkalmazására.* – In. Védelmi Tanulmányok 63. Könyvfejezet. Stratégiai és Védelmi Kutatóintézet, Budapest, 2010.

Study papers, articles:

1. New ways to employ helicopters in the Hungairan Defence Forces as a response to the security challengers of the 21st century. – In. AARMS: Academic and Applied Research in Military Science, 2009. Volume 8 Issue 4
2. *Az összhaderőnemi műveletek érdekében végrehajtott hazai és külföldi törekvések a helikopterek többcélú alkalmazására.* – In. Repüléstudományi Közlemények, Különszám. 2008. április 11.
3. *A közvetlen légi támogatás tervezésének és végrehajtásának alapkérdései.* – In. Hadtudományi Szemle, 2008. I. évfolyam 1. szám
4. *Az olasz-magyar katonai kapcsolatok ápolása külföldi repülőnapokon történő részvétellel.* – In. MH ÖHP Folyóirata
5. KOLLER József – SZÉP László: *Az olasz vezérkari főnök stratégiai koncepciója.* – In. Új Honvédségi Szemle 2005/5.
6. *Helikopterek alkalmazása az aszimmetrikus hadviselés korában.* – In. Hadtudomány, 2008/3-4.
7. *Gépparancsnoki beosztásba történő kiválasztás újszerű módszere.* Repüléstudományi konferencia 2009. 50 év hangsebesség felett a magyar légtérben. – In. 2009/2. szám, 2009. árprilis 24.
8. *A többnemzeti összhaderőnemi alkalmi harci kötelék alkalmazása kutató-mentő feladatban.* – In.Honvédségi Szemle, 2008. szeptember 62. évfolyam 2. szám

9. BALI Tamás alezredes – KOLLER József alezredes: *Szimulátorok alkalmazásának lehetőségei a pilótaképzés és műveleti repülések érdekében.* – In. Honvédségi Szemle, 2009. szeptember 63. évfolyam 5. szám
10. *Helikopter erők szerepe összhaderőnemi alkalmi harci kötelék lakott területeken folytatott műveletében, hazai és külföldi tapasztalatok.* – In. Sereg Szemle, 2010/1. szám
11. *Helikopterek alkalmazásának lehetőségeit befolyásoló tényezők lakott területeken folytatott műveletek végrehajtásakor.* – In. Sereg Szemle, 2010/2. szám
12. KOLLER József – LÁZÁR Béla: *A légi kiképzés-támogató csoport (Air Mentor Team) felkészítésének és működésének tapasztalatai.* – In. Szolnoki Tudományos Közlemények XIV. Szolnok, 2010.
13. *Szállító és harci helikopter erők missiós felajánlásainak jelenlegi helyzete, a légi kiképzés-támogató csoport (Air Mentor Team) végrehajtott misszióinak gyakorlati tapasztalatai.* – In. Repüléstudományi Közlemények. Különszám. 2011. április 15. Szolnok, 2011.

Scientific lectures held in the field of the theme of my dissertation:

1. *Objectives of the Hungarian Defence Forces in the field of rotary wing operations.* Heli-Power Conference, 2009. Praga (2009. 11. 03—06.)
2. *Politica comparata di Ungheria.* (CEMISS-ISSMI) Összhaderőnemi felsőfokú Vezérkari Intézet, Róma, 2005. február 07.
3. *L'addesione dell'Ungheria all'Unione Europe: Situazione attuale e prospettive future.* Annuario 7. Corso Superiore di Stato Maggiore Interforze Anno Accademico, 2005.
4. Hungarian helicopter forces – Present projects, future plans. Heli-Power Conference 2010, London, 2010.

5. *A helikopter erők alkalmazásának időszerű kérdései.* Légierő tudományos szakmai konferencia, Hadtörténeti Intézet és Múzeum, 2008. május 22.
6. *Multirole application of helicopters and Hungarian efforts of support of special operations by helicopters, Lessons learned in Exercises in 2009.* Különleges műveleti konferencia ZMNE 2010. 05. 11.
7. *A Magyar Honvédség helikoptereinek újszerű alkalmazása a XXI. század biztonságpolitikai kihívásainak tükrében.* Tudományos konferencia, Gyöngyös, Károly Róbert Főiskola, 2010. szeptember 24.
8. *Biztonságpolitikai kihívások, veszélyek... válasz a helikopter, avagy: A Magyar Honvédség helikoptereinek újszerű alkalmazása.* Tudományos konferencia, Mátrafüred, 2010. október 24.

Study:

1. *Olaszország és az olasz haderő szerepe a hidegháború utáni Európában, valamint olasz-magyar katonai kapcsolatok alakulása.* Szakdolgozat. ZMNE BVKL-8 2004

Curriculum Vitae

Name: József Koller
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Place of birth: Szekszárd, Hungary

Language proficiency: ***English***: Advanced, specialised military
Italian: Advanced, specialised military
Russian: Advanced

General Military Education:

1986-1989: Military Academy and Aviation Flight School (Szolnok, Hungary; and Frunze, former USSR; one and two years respectively)
2000-2001: Combined Arms and Staff College (Civitavecchia, Italy)
2001-2004: National Defence University (Budapest, Hungary)
2004-2005: General Command and Staff College (Rome, Italy)

Language and professional education:

1996: English language course (University Veszprém, Hungary)
1997: English general military language course (Defence University Budapest, Hungary)
1997: Italian language course (Budapest, Hungary)
1999: Special NATO survival course for pilots (Monteterminillo, Italy)
2000: Air Operational English Course (BKNYK, Budapest)
2002: English language course (DOVER, Budapest)

Assignments:

1989 Junior MI-24 pilot, 87th Bakony Combat Helicopter Wing (Szentkirályszabadja, Hungary)
1993 Senior MI-24 pilot, 87th Bakony Combat Helicopter Wing (Szentkirályszabadja, Hungary)
1994 Commander of a pair of MI-24, 87th Bakony Combat Helicopter Wing (Szentkirályszabadja, Hungary)
2001 Commander of the TACEVAL and Integration staff section, 87th Bakony Combat Helicopter Wing (Szentkirályszabadja, Hungary)
2003 Squadron Commander (MI-24), 87th Bakony Combat Helicopter Wing (Szentkirályszabadja, Hungary)
2004 Squadron Commander (MI-24), 86th Helicopter Wing (Szolnok, Hungary)
2006 Battalion Commander (MI-24), 86th Helicopter Wing (Szolnok, Hungary)
2007 Deputy Base Commander, 86th Helicopter Wing (Szolnok, Hungary)

Date: Kabul, 30th July 2012.

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