

**NATIONAL UNIVERSITY OF PUBLIC SERVICE
Doctoral School of Military Sciences**

THESIS OF DOCTORAL (PhD) DISSERTATION

entitled:

Colonel Tamás Bali

**HELICOPTER PILOT'S SELECTION AND THEIR TRAINING
METHOD'S MODERNIZATION**

Scientific supervisor of the dissertation:

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THE ACTUALITY OF DISSERTATION TOPIC

In the history of mankind – like a kind of a natural law – one thing always must be considered as a constant, the “changing”. It can be induced by social, economical, environmental factors, or even the transformation of political interests. In relation with the military forces, changes can be generated by the newly arose risks and threats, improvement of military technologies or the increase/decrease in a budgetary condition of a given country.

Transformation of force capabilities, changes in personnel and technical criteria conditions compels the military decision makers to apply adjustments in force structures and doctrinal procedures. By analogy, the Hungarian Defense Forces in the rapidly changing security environment must be a professional, versatile, flexible and effective force. It must be capable for allied operations. It must be our nation's major depository with its trained soldiers and well equipped units.¹

The new armaments, weapon systems, the forming tactical possibilities are almost constantly opening new dimensions in the modern warfare, which obviously requires newer means for the appropriate military counteractions. This interaction is the driving force behind the evolution of the art of war. It can be concluded, that the only force capable of effective operational activity, which can keep up with the constantly changing environment. As a direct result of an ongoing interactions, the training of participating forces has become more complex.

As time passes, increased demand appeared for the scientific research in the fields of personal training procedure and force capability improvement possibilities.

In this dissertation, relying both on my scientific research, and on my nearly 20 years of basic, advanced and operational pilot training experiences, I formulated a kind of a modern helicopter pilot training system, which can answer all the arisen challenges. There is a decisive role in the interaction between theory and practice in it.

The need for a military helicopter pilot training review is determined by several factors. These include: operational task transformation, emerge of new technologies or even changes in a financial and economic background of an actual/ongoing pilot training.

¹ Source: Ált/43: Hungarian Defense Forces Joint Force Doctrine, Edition 3. (MH DOFT code: ÖHD (3), Released: 28 Sept 2012., p.07.).

The capabilities of the Hungarian Defense Force's helicopter forces have dramatically decreased due to the low operational numbers, and the limited technical possibilities. The reduction in a rotary-wing capability has a direct negative impact on the supported land force's operational capabilities. The resulting joint force capability decrease, as a whole, worsens the fulfillment of the country's home defense needs. To solve this problem, the Hungarian government – on the proposal of the Ministry of Defense's policy and military leaders – has made a decision on procurement of such a helicopters, which can satisfy all the needs of the modern age.

The adaptation of new helicopters into the home defense forces makes it timely to overview the training of the operators², the clarification of procedures, its content and form, because:

- the potential of modern helicopter's technological opportunities opened up a new dimension for operational deployment,
- the operational environment, and thus the operational expectations have changed,
- the allied and home defense's helicopter deployment procedures transformed.

The decision on helicopter purchase has the implication, that we have to start the development of a helicopter pilot's training system. The structure and methodology must be reviewed, necessarily recast. The theoretical and practical training syllabi must be redeveloped to achieve required pilot skills.

Since my topic is relevant to the motives described above, and justified with the existing and projected helicopter pilot deficit figures, (in addition to usability identified in several areas) the dissertation must be considered as actual.

SETTING THE SCIENTIFIC PROBLEM

Based on my chosen topic, related scientific problem areas can be explored. In respect of these, I formulated the following **QUESTIONS** to be researched:

- K1. Does the Hungarian Defense Force's current helicopters pilot training ensure the meeting to the operational requirements based on the contemporary national defense and allied obligations?
- Is it necessary or even possible to develop the national helicopter pilot training structure from its current state?

² Helicopter pilots and maintainers.

- K2. Does the Hungarian Home Defense Force's possess the state of the art training infrastructure and the adequate human resource for the effective training?
- K3. Could the modern helicopter pilot training be carried out by the current pilot training related subunits (with a close coordination) or should these be centralized into one pilot training institute, which could – in one hand – organize, coordinate and even carry out the whole spectrum of a helicopter pilot training?
- K4. Do we have competent recruitment program, which is capable to ensure a long term pilot aftergrowth, or can it only be granted just after the current program's transformation?

This scientific theme can only be handled in its complexity and context. It is the only way to get appropriate, professional answers for our questions. Based on the above described scientific problems and questions, my **HYPOTHESES** are as follows:

- H1. Considering today's operational environment and modern technologies offered to rotary-wing assets, the derived new tactical possibilities, the current domestic helicopter pilot training provides only basic skills both on the field of theoretical knowledge and skills in respect of the flight.
- In order to meet the satisfactory training conditions to reach the full operational capability, it is necessary to develop a new helicopter-pilot training system.
- H2. Since the Hungarian Home Defense Forces possess the appropriate human resource and partly the training infrastructure, the only hampering factor to carry out the modern helicopter pilot training is the implementation of new helicopters and simulators.
- These factors will be eliminated by the acquisition of a new helicopter fleet.
- H3. The flexible training can only be met under the coordination of a training dedicated body.
- H4. Helicopter pilots, capable for home defense tasks and allied operations can only be granted for Home Defense Forces with the comprehensive transformation of the current recruitment system.

DEVELOPMENT OBJECTIVES OF THE DISSERTATION

With the acquisition of new generation helicopters, it is expected to emerge those kind of rotary-wing assets in the Hungarian Defense Forces, which will represent up-to-date technology. This, on one hand will open up new opportunities for operational deployment, but on the other hand, it will make the helicopter pilot's workload even more complex. This complexity has the implication, that the development of flying skills and training for operation of on-board weapons systems become longer, which makes the process more expensive.

Considering these, to prove my hypotheses, I developed the following **SCIENTIFIC OBJECTIVES**:

- SO1. **To analyze** the Hungarian, European and transatlantic countries' helicopter pilot training procedures. **To determine** the positive and negative methods.
- SO2. **To evaluate** the current Hungarian helicopter pilot training capability. To reveal the improvement possibilities.
Using up the ideal pilot training methodology, **to determine** those elements which are useful (must be kept), considered as it must be transformed and those, which must be newly developed.
- SO3. **To develop** a modern, economical, efficient and flexible helicopter pilot training procedure and its implementation into the frame of the Hungarian Home Defense Forces.
To determine all of those training elements, which help mostly to reach the operational deployment goals.
- SO4. **To make recommendation** on training coordination body's organization structure and onto its tasks.
- SO5. **To develop** a new pilot recruitment system.

RESEARCH METHODS

As for the first step, I reviewed the scientific literature to analyze the latest results, developments and achievements on the field of my research theme. I completed extensive data collection during my initial research. I studied the available subject related printed and electronic domestic and international publications, brochures, doctrines and other federal documents.

Aside of systematization of data, analysis and evaluation of the resulting information, I used observation and data processing gained from practical experiences.

I complemented my research with the experiences gained at national and international exercises, at my helicopter pilot mentoring mission in Afghanistan, as well as during my visits to NATO countries. I used the dialectical unity of induction and deduction to achieve my research results. I published all of my research results, and used up all the related professional comments.

I regularly consulted with the subject experts, who – with their information, opinions, and suggestions – have greatly contributed to the shaping of my dissertation, its content.

I used the empirical research methods, such as analysis, synthesis and comparison of theoretical reasoning. I applied induction, deduction, and the historical analysis from the theoretical-logical research method.

THE STRUCTURE OF DISSERTATION

It has seven chapters. Following the **first chapter (Preamble)**:

Second chapter is to survey the strategic level security policy documents, to define the capabilities required for the Hungarian Home Defense Forces, represent deployment mandates. To determine the complex task of helicopter forces, to define the expected operational and helicopter tactical capabilities. To specify all of those capabilities which are essential to achieve the intended operational objectives.

Third chapter is to examine the domestic military helicopter pilot training procedures, to analyze the positive and negative practical lessons learned. To identify problems occurring during trainings.

Fourth chapter is to analyze and compare leading helicopter-training structures used at other nations. To analyze course of actions and direct processes from recruitment, till “combat ready” pilot training level. The goal was – aside to representation of negatives – to filter all the positive, useful lessons.

Fifth chapter is to work out a kind of helicopter-training structure, which ensures proper preparation for, and compliance with today's operational requirements. In this chapter, the objective was to solve the set scientific problems, proof my hypotheses, with the analysis of the problems is to achieve the research goals.

Sixth chapter is to "translate" the developed training structure into the domestic circumstances. To lay down a recommended structure, which provides adequate operational capability for helicopter pilots, necessary to meet home defense and allied tasks.

Seventh chapter is a conclusion. It is dedicated to represent scientific results and confirm of hypotheses.

SUMMARIZED CONCLUSIONS

In order to be able to determine the outcome requirements of training, in the first step I examined the current tasks of the helicopter forces.

In the second chapter I surveyed the strategic level security policy documents, to define the capabilities required for the Hungarian Home Defense Forces. In the II.1 subchapter I represented all the rotary-wing deployment mandates. Then, as a second step, – in the II.3 subchapter – based on an analysis of the strategic level legislative documents, I determined the complex task of the helicopter forces, I defined the expected operational and helicopter tactical capabilities. I specified all of those capabilities, which are essential to achieve the intended operational objectives. The principle of using a complex investigative research method, was to precisely identify those capabilities, which are musts for rotary-wing forces assigned to operational purposes. I defined these capabilities in generic terms, in II.4 subchapter.

In this respect, I interpreted the helicopter's operational capabilities into subparts like: flexibility, operational and tactical mobility, capability for reconnaissance, command and control, interoperability and sustainability.

Clarifying the complexity of tasks and capabilities of helicopter forces, the output requirements of pilot training, in the next chapter I turned to the analyzation of homebased and foreign training methods.

In the third chapter of my dissertation, I presented all the pilot training procedures from 1955, till present days. In III.3 subchapter, I detailed all the emerged problems and valuable experiences. In respect of our helicopter pilots, – in III.1 and III.2 subchapters – I analyzed both of homebased and foreign training methods. I identified all of those procedures, which result useful operational capabilities. Also, in III.3 subchapter, I underlined those elements, which make our training costly, and outdated in operational respect.

The ideology of **fourth chapter** is organically build onto the previous chapter, since its subject also the helicopter pilot training, but deals with foreign methods. I considered this chapter to be essential, since the theme substantiation required it. History has proved so many times, that identical problems based on different cultural background bear different solutions. These differences bring interesting lessons for a researcher.

Considering this, in the fourth chapter I analyzed 32 countries' helicopter pilot training methods from the recruitment till the very end of operational training.

In the fifth chapter, I developed an advanced pilot training structure, used up all the positive and negative procedures analyzed in third and fourth chapters, my own training experiences, regulations and suggestions of the European Aviation Safety Agency. This training's output grants the meeting of operational requirements.

In the V.5.1 subchapter I developed a two phased recruitment program, which grants highly motivated youngsters into the pilot training process.

Following the recruitment theme, – in the V.5.2 subchapter – I represented the most objective measurement method considering the admission procedure. There is an emphasized part during the admission where the applicants flying abilities are measured by simulators.

After the admission procedure, in the V.5.3 subchapter, I developed a kind of a training phase, which contains all of those courses/trainings, which required to go on with a pilot preselection and overall helicopter pilot training. These are: military basic training, egress and parachute training, English language course, basic level survival (SERE³ A) and first aid courses.

Then, I turned to pilot preselection as one of the most cost effective factor in the whole pilot training process. In V.5.4 subchapter I proved, that only preselection can show the cadet's personal aptitudes and abilities for the future fighter-, helicopter- or even transport plane pilot training phases. I clarified, that the helicopter pilot training must be considered as one of the specialization branch of pilot training. Also, in this subchapter I proved, that only my own, self-developed preselection method can grant capability based sorting on the candidates.

³ SERE = Survival, Evasion, Resistance, Escape.

Following the preselection theme, I developed that training program, which deals specifically with those cadets, who were selected to be future helicopter pilots. It comprises 4 phases, which built onto each other. These are: helicopter pilot's basic and advanced training, transition training to the first pilot position's helicopter type, operational training.

The basic training program is described in V.5.5 subchapter, in accordance with present days' requirements, that includes all the day and night (formation flight included) pilot skill's mastery. Besides of these, meeting its importance as a new training part, I wrote down an emergency training.

After the basic training, in the V.5.6 subchapter, I worked out a kind of an advanced pilot training which grants all the skills to meet basic operational requirements and special helicopter tasks. Accordingly, the importance of this training phase, its sub-programs were placed within the context of a later flight operational tasks. I complied the advanced training – amongst with others – with the following sub-programs: NVG⁴-, NOE⁵-, mountainous-, brown-out and white-out-, underslung-, hoist trainings. In connection with these special sub-programs, I emphasized the importance of on-board crew resource management (CRM).

In relation with the advanced training theme, I proved, that operational training cannot be carry out without getting the previously listed sub-programs.

The implementation of short term training sub-modules is supporting the feasibility of main (advanced) training module. Some of these supporting sub-modules are: air and land operational theoretical courses, a variety of survival-oriented courses⁶, and combat lifesaving course.

The operational training flows through 6 training modules. There is emphasis in it on land tactical and air operational theoretical and practical trainings. I proved, that competent operational training cannot be completed without the active participation of land forces, and use of national and multinational exercises. As for this, at this part of the V. chapter, I worked out the ideal method for operational tasking, mission development, combined task force level employment and after action evaluation.

⁴ NVG – Night Vision Goggles.

⁵ NOE – Nap-on the-Earth.

⁶ These are the SERE A and B level land, water and mountainous survival courses.

In the V.5.8 subchapter I ended the helicopter pilot training system development with an Aviation Authority's evaluation phase. That grants independent skill evaluation and provide a license for governmental flying activity.

In connection with the theme of authority's evaluation, I placed emphasis on this objective evaluation method during the pilot training. Upon my researches, the gained knowledge/skills can only be evaluated objectively if an independent organization and its personnel is drawn into the process. These personnel must have an adequate level of theoretical knowledge and practical flying experiences, and mustn't directly involved into the actual cadet training. This organization is the Civil Aviation Authority and the persons are the Authority's type rated pilots.

Accordingly, I implemented 4 authority evaluation into the training process, as follows:

1. to the end of English radiophonia course, described in subchapter V.5.4,
2. EASA Part-FCL PPL authority evaluation to the end of preselection phase, described in subchapter V.5.4,
3. Part-FCL CPL authority evaluation to the end of pilot advanced training phase, described in subchapter V.5.6,
4. authority evaluation meeting 16/1998. (X. 28.) HM-EüM decree to the end of operational training phase, described in subchapter V.5.8.

Also in this chapter, I dealt extensively with flight training devices (flight simulators). I dedicated flight simulators to each of the training phases like I did with the rotary-wing assets considering EASA CS-27 and CS-29 regulations. Bear in mind the training considerations and EASA CS-FSTD(A), CS-FSTD(H) regulations, I assigned practical training related devices in V.5.5, V.5.6, V.5.7 and V.5.8 subchapters⁷. In the V.3 subchapter I highlighted the importance of simulator capabilities, which must collerate with the related phase's practical training helicopter type.

In the sixth chapter, I took into account all of those training subparts and resources, which already exist in the Hungarian Army. In the light of necessity, I formulated the most economical and most reasonable possibilities to create the missing conditions to carry out the ideal helicopter pilot training.

⁷ Preselection phase = type specific FTD, considering EASA CS-FSTD(A); Helicopter pilot basic training = FTD, considering EASA CS-FSTD(H). In the period of navigational training = FNPT, considering CS-FSTD(H). Advanced training and conversion to first pilot position's helicopter = FTD, considering CS-FSTD(H); Operational training = FFS, considering CS-FSTD(H).

First of all, – in the VI.1 subchapter – I proved, that the coordination and completion of the pilot training process requires a dedicated flight training institute, which stands separately from the helicopter combat unit. So, I made a recommendation on the organization structure and detailed tasks of this institute.

In VI.2 subchapter, I turned to the theme of modern recruitment. Analyzing the given human resource and technical conditions, I determined the limiting factors and proposed a solution. I analyzed the possible solutions in details to create budget for motor-glider purchase. In connection with the recruitment, I proposed a target group and the prioritization of youth, entering the program.

In this subchapter, I also dealt with applicant's medical examination, admission procedure and preflight short term courses. I made recommendations on medical examination rationalization, on the transformation of admission. Then, I studied the feasibility of the courses, which must be completed prior the preselection phase.⁸ I proved, that the implementation of the relevant courses based on the current resources of the Hungarian Defense Forces is possible under a proper planning and coordination.

In connection with the practical flying phases represented in subchapters VI.3 and VI.4, I proved, that the Hungarian Defense Forces possess the appropriate number of experienced instructors. The infrastructure for theoretical trainings is provided. The documentation of basic and advanced trainings need a bit of revise, for operational training, it must be newly developed. All of these can be completed routinely using up the current pilot instructor's professional knowledge.

There is a different situation with regard to the simulators. The required pre-selection and basic trainers are available; their usage is provided. Training syllabis have been approved, the training materials based on these are available. However, the situation is completely different in respect with advanced and operational trainings. Their simulators do not exist at the Home Defense, procurement is required.

Linked to this topic, taking into account the condition of the national system, I made recommendations to ensure in long-term the simulator instructor's availability in VI.4 subchapter.

⁸ These are the military basic-, parachute and egress training, Stanag 6001. Level 3.3.3.3. English language and radiophonia course, „A” level land survival and first aid course.

Upon that, the simulator instructors must be chosen from the experienced helicopter pilots. They must be divided into two groups: 1. members of first group constitutes those, who were grounded due to some medical problem but still on active duty at the Hungarian army; 2. Members of second group comprises those, who left military, went on pension but still serve as a reserve force.

The simulator instructor's tasks can be provided with both of the group members. In my recommendation I turned toward the first group members, since their flying skills and professional knowledge can be considered up-to-date. However, to grant their employment, current regulations must be adjusted.

On the field of practical flight training, the Hungarian Defense Force struggles with huge challenges. Aside of the well trained and experienced flight instructor's availability, there are aircrafts just for preselection and operational training phases. The Hungarian military missis rotary-winged assets for helicopter pilot basic and advanced training phases.

The delay in the procurement of light category helicopters perpetuate the situation in which the basic and advanced flying skills must be developed on the medium category helicopter currently available in military order. Comparing the medium category turbine-, and light category piston engined helicopter's operating cost, I proved in the III.3 subchapter, that the training cost can rise up to 15 times higher. Moreover, the low availability rate of helicopters decreases the efficiency of pilot training.⁹

We can see, that the home based helicopter pilot training's fulfillment is impeded both by the lack of aircrafts, and the capability deficits of available ones. However, these factors disappear with the procurement of planned helicopter fleet, since it will have both light and medium helicopters, as well as associated simulators in its business pocket. So, with the procurement of this fleet everything will be given to accomplish a modern home-based pilot training.

It is also obvious, that a realization and the sustainment of such a complex training structure is a huge effort for a country, which has limited economical potential, like Hungary. But, if this happen, the military training institute will provide long term pilot training capability on governmental level as well, even for Hungarian air ambulance service and law enforcement air support unit.

⁹ It is an important fact, that not just the pilot training, but all the operational tasks must be completed with these helicopters as well.

This will create a flexible training opportunity to satisfy the current requirements and the always changing demands.

In the VI.5 subchapter, I identified the fact, that until the successful completion of helicopter tender the modern helicopter pilot training cannot be carry out. But, right after the leader's decision made on fleet purchase, the documentation must be ready to be implemented. That could ensure the immediate start of pilot training at the arrival of helicopters and their simulators.

If the preparations were made, the pilot training would work without any problem. A form of flexible training would be realized, that is based on the needs of Hungarian Military and all other state and even civil actors.

Upon my researches I declare, that having a Hungarian based training infrastructure and human resource, we do not have to deal with other helicopter pilot training possibilities abroad. Obviously, it is cheaper version to run our own training system then rent it from somebody who place his own profit onto the regular quota price.

THE PROVE OF HIPOTHESES, NEW SCIENTIFIC RESULTS

1. I collected, systematized the most important national and allied documents, then I analyzed the tasks of rotary-wing Home Defense Force. I compared these tasks with the current operational (helicopter) capabilities. As a result, **I identified all of those rotary-wing capabilities, which are needed to meet current operational requirements.**
2. **I proved that the current military helicopter pilot training system is outdated, not efficient.** Analyzing the Hungarian helicopter force's capability gaps, **I determined the subparts of a modern helicopter pilot training.**
3. **I developed a 5 phased (with 17 subparts) modern pilot training system, which provide all the required knowledge and skills for the graduated pilots.** For this:
 - 3.1. **I determined all the basic and advanced pilot skills,** which are musts for the pilots. Considering this, **I developed basic and advanced pilot training structure with all of the theoretical a practical training syllabuses and training methods.**

- 3.2 Analyzing the operational requirements **I proved**, that the present Hungarian military helicopter pilot's training documentation grants only the basic operational flying skills. As for this, **I developed a jointforce level operational training method**, which comprises the proper operational tasking, mission development, combined task force natured employment and after action evaluation.
4. **I worked out recommendation on ensuring human resource** (pilot instructors) **for a long-term period to support practical simulator training.**
 5. **I developed the national implementation scheme** of modern helicopter pilot training. **I determined all of those training subparts, which cannot be accomplished** by using up military's present resources. **I formulated the most economic and reasonable possibilities to determine the missing conditions** to carry out the ideal helicopter pilot training inland.
 6. **I proved, that the complex helicopter pilot training can only be run by an independent training institute. I developed recommendation on this institute's organization structure and detailed tasks.**
 7. **I developed a two phased pilot recruitment program**, which grants the highly motivated youngsters for the pilot training.
 8. **I proved, that after the procurement of the new helicopter fleet, modern helicopter pilot program can be implemented in the Hungarian Military.**

PRACTICAL APPLICABILITY OF THE DISSERTATION

It can be utilized:

1. on strategic level as a base document, to create helicopter pilot's training structure;
2. on tactical level as a base document, to create helicopter pilot's theoretical and practical training syllabuses and training methods.

My recommendation on pilot recruitment system could also be utilized in other military recruitment areas. In this respect, as an example, It could be very efficient in maintainers recruitment.

In my dissertation I developed a recommendation on a long term employment system for those pilots, who were grounded due their medical problems.

This recommendation could lead to an adjustment or complement of human strategy dealing with pilot specialty.

The implementation of my own developed training system could provide such a military capability, which could also facilitate the state-level helicopter pilot training. As for this, it could help to work out the state level helicopter pilot training concept.

LIST OF TOPIC RELATED PUBLICATIONS

| Publication | | | | |
|--------------------|---|-----------------|------------------------------------|--|
| No. | Title | Language | Percentage of participation | Publisher, year of release |
| 1. | Helicopter pilot's operational training. | English | 100 % | Repüléstudományi Közlemények, Volume XXIV., 2012. 3rd edition |
| 2. | Percularities of helicopter supported operations. | English | 100 % | International Scientific Conference, Management-Theory, Education and Practice 2013. Liptovsky Mikulas Conference book |
| 3. | Supporting helicopter operations for land force battle groups. | Hungarian | 100 % | Repüléstudományi Közlemények, Volume XXV. 2013. 3rd edition |
| 4. | Force proposals concerning helicopter units, derived challenges. | Hungarian | 100 % | Repüléstudományi Közlemények, Volume XXIII. 2011. 3rd edition |
| 5. | Possibilities and limitations of the helicopter deployment from the aspect of pilot training. | Hungarian | 100 % | Hadtudományi szemle, 2011. 4th edition |
| 6. | Doctrinal questions on principles of helicopter deployments. | Hungarian | 100 % | Repüléstudományi Közlemények, Volume XXII. 2011. 1st edition |
| 7. | The efficient helicopter pilot training. | Hungarian | 100 % | Repüléstudományi Közlemények, Volume XXIV. 2012. 1st edition |

| Publication | | | | |
|--------------------|--|-----------------|------------------------------------|--|
| No. | Title | Language | Percentage of participation | Publisher, year of release |
| 8. | Lessons learnt of the Hungarian Air Advisory Team in Afghanistan, their utilization. | Hungarian | 100 % | Honvédségi Szemle, Volume 143., 2015. 4th edition |
| 9. | Use of simulators in pilot training. | Hungarian | 100 % | Repüléstudományi Közlemények, Volume XXIII. 2011. 3rd edition |
| 10. | Comprehensive approach toward pilot recruitment. | Hungarian | 100 % | Repüléstudományi Közlemények, Volume XXVIII. 2016. 1st edition |
| 11. | Aspects of flight simulator usage in pilot's basic and operational training. | Hungarian | 50 % | Honvédségi szemle, Volume 63. 5th edition, Sept. 2009. |
| 12. | Hungary's security policy documents, derived task for helicopters. | Hungarian | 100 % | Felderítő Szemle, Volume XI. 3rd-4th edition |
| 13. | Hungary's main security policy documents, derived task for helicopter forces. | Hungarian | 100 % | Szakmai Szemle, 2013. 3rd edition |

SCIENTIFIC AUTOBIOGRAPHY

PERSONAL DATA:

Name, rank: Colonel Tamás Bali

Date of birth: 25. June 1971.

Place of birth: Kecskemét

PAST POSITIONS:

- **20. 08. 1996. – 31. 01. 2001.** HDF. 89 Szolnok Mixed Air Transport Brigade, 1. Transport Helicopter Squadron, **Co-pilot**,
- **01. 02. 2001. – 31. 07. 2001.** HDF. 89 Szolnok Mixed Air Transport Brigade, 1. Transport Helicopter Squadron, **Pilot in command**,
- **01. 08. 2001. – 31. 07. 2002.** HDF. 89 Szolnok Mixed Air Transport Wing, A7 detachment, **A7 staff officer** (Pilot in command),

- **01. 08. 2002 – 31. 08. 2003.** HDF. 89 Szolnok Mixed Air Transport Wing, A7 detachment, **Deputy Commander** (Pilot in command, instructor pilot),
- **01. 09. 2003. – 30. 06. 2004.** HDF. 89 Szolnok Mixed Air Transport Wing, A7 detachment, **Commander** (Pilot in command, instructor pilot),
- **01. 07. 2004. – 28. 02. 2006.** HDF. 86 Szolnok Helicopter Wing, Detachment of Air training and Operations, **Deputy Commander** (Pilot in command, instructor pilot),
- **01. 03. 2006. – 31. 12. 2006.** HDF. 86 Szolnok Helicopter Wing, Detachment of Air training and Operations, **Commander** (Pilot in command, instructor pilot),
- **01. 01. 2007. – 31. 08. 2009.** HDF Joint Force Command Flight Training Department, **J7 officer** (Pilot in command, instructor pilot),
- **01. 09. 2009. – 15. 03. 2011.** HDF Joint Force Command Flight Training Department, **Deputy Commander** (Pilot in command, instructor pilot),
- **16. 03. 2011. – 16. 05. 2012.** HDF. 86 Szolnok Helicopter Base, Flight Training Detachment, **Commander** (Pilot in command, instructor pilot),
- **17. 05. 2012. – 30. 09. 2012.** HDF. 86 Szolnok Helicopter Base, **assigned Deputy Commander** (Pilot in command, instructor pilot),
- **01. 10. 2012. – 14. 10. 2012.** HDF. 86 Szolnok Helicopter Base, Flight Training Detachment, **Commander** (Pilot in command, instructor pilot),
- **15. 10. 2012. – 07. 04. 2013.** Hungarian Ministry of Defense, **J3 Staff officer** on helicopter issues (Pilot in command, instructor pilot),
- **08. 04. 2013. – 08. 19. 2015.** HDF. 86. Szolnok Helicopter Base, Flight Training Detachment, **Commander** (Pilot in command, instructor pilot),
- **08. 20. 2015.→** HDF. 86. Szolnok Helicopter Base, **Deputy Base Commander** (Pilot in command, instructor pilot).

DEGREES:

- Military Leader (MSc, University degree),
- Engineer of Transportation (BSc, College degree),
- Helicopter Pilot (BSc, College degree),
- Chartered Architect-Engineer (Polytechnic degree).

CERTIFICATIONS:

- General Staff course certification,
- Brigade level staff officer`s certification,
- STANAG 3.3.3.3. English language certification,
- Intermediate level (military language extended) Russian language certification,
- European Computer Driving License (ECDL) certification,

- Survival instructor certification (SERE A and B levels, Land and Water SERE).

SCHOOLS AND COURSES:

- 1989-1990 Kilián György Air Force Officers` Training College, Fixed-wing branch,
- 1992-1996 Szolnok Air Force Officers` Training College, Rotary-wing branch, (**BSc**),
- 1998 English Language Course in Canada (Canadian Forces Language School, St. Jean/ Montreal/ Quebec),
- 1999 NATO Pool training for staff officers,
- 2000 S.E.R.E Training Course for Pilots (NATO PfP Survival Course, Cigli/Izmir/ Turkey),
- 2000 Air Operational English Course, Budapest,
- 2001 European Computer Driving License Course,
- 2002 JCET 58 – Basic-level PSYOPS Course (US. Armed Forces JCET 58 PSYOPS, Szolnok),
- 2004 Brigade-level Staff Officer`s Training Course, Slovakia
- 2005-2007 Zrínyi Miklós National Defense Institute, Air Force branch, Military Leader (**MSc**),
- 2010-2012 Zrínyi Miklós National Defense Institute, Defense Graduate School,
- 2012→National University of Public Service, Faculty of Military Sciences and Officer Training, Defense Graduate School (**PhD**),
- 2012 Gripen Emergency Procedures and Life-saving Equipment Instructor Course (Linköping, Sweden),
- 2013 Combat Life Saver Course, Budapest,
- 2013 Air Advisory Pre-deployment Training Course for Helicopter instructor pilots, (Czech Republic, Croatia),
- 2014-2015 National University of Public Service, Faculty of Military Sciences and Officer Training, General Staff course, Budapest.

SCIENTIFIC BACKGROUND

I started my scientific activity in relation with my profession. I completed several training related document as an author, such as: „Helicopter pilot cadet`s training syllabus, „Helicopter pilot cadet`s training methodology”, a „Book of pilot training”, „Pilot preparatory book for the examination at National Aviation Authority”, a „Methodology instruction for the usage of Spice and Fast ropes on helicopters”.

In connection with my scientific work, I spent extensive time on the research of different pilot training methodologies, on the adaptation of those into the Hungarian training procedures.

During my MsC education I participated at the the Zrínyi Miklós National Defense Institute`s Military Scientific Conference and at the XXVIII. National Scientific Conference with my medical evacuation related dissertation, for which I was both awarded. As my first peer reviewed publication, this dissertation was published at National Defense University`s scientific periodical, called “Hallgatói Közlemények”.

I continued the scientific activity after my university education. As its result I published several peer-reviewed scientific articles.

I was admitted to Doctoral school of Military Sciences at Zrínyi Miklós National Defense University in September 2010, where I began my academic activities under organized scientific supervision. Currently, I am a PhD student at National University of Public Service`s Doctoral School of Military Sciences. In connection with my PhD studies, my chosen research topic is related to the enhancement of home country's helicopter force`s operational capabilities from the perspective of helicopter pilot training. My dissertation` title is: “Helicopter pilot`s selection and their training method`s modernization”. This research topic was chosen intrinsically linked to both my current job, and to those flight related professional fields, which I had researched in my previous positions.

During my PhD study years, in respect with my topic I have published 30 peer-reviewed articles and studies in six different research areas through a range of media.