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Dear readers!

The Science & Military journal has entered upon the tenth year of its existence. As a chief editor, I am pleased to see that it attracted its readers and contributors in the previous years. The Science & Military journal is intended mainly for experts with practical experience, academic communities, including PhD candidates, as well as experts and specialists searching for qualified and understandable information on current issues related to military science. Nowadays, scientific research cannot be conducted without sharing information and results. Journals, which may be considered a large database, publish scientific work results most frequently. Pressure for publishing is increasing since published articles prove the writer's effectiveness and scientific results. In general, articles published in peer-reviewed journals (current scientific journals is the best choice) affect the author's profile and improve the university's reputation as well.

Dear readers, this year's first edition of the journal includes ten new and undoubtedly interesting scientific articles. I would like to highlight at least some of them.

The authors Martin Obert and Marcel Harakaľ wrote the article titled "Contemporary Cybernetic Threats Analysis". The main goal of this article is to evaluate current situation in the cybernetic space by giving particular analysis of cybernetic attacks within the year 2013 as a sample for collaboration and estimation of future attempts in this area.

The article written by Gabriel Manescu et al., titled "The Design of a Collaborative Model for Defense Industry Using the IDEF Methodoloy" presents the way of creating a cluster-type collaborative model, specific to the field of defense using methods specific to modelling. In this article we have opted for the IDEF method (a functional modelling method).

The authors Eduard Mihai, Oliver Ciuica wrote the article titled "The Influence of Organizational Culture on Flight Safety". The article highlights the influence of organizational culture on flight safety. In order to provide the optimal balance between the high operating level and the reduced level of human and material loss, Flight Safety appears as a component that influences significantly the combat capacity of the Air Force.

The article titled „Medical Support of Military Operations LED by organizations of International Crisis Management" written by František Gubáš deals with medical support of military operations led by organizations of international crisis management. The author analyses approach of the United Nations, the North Atlantic Treaty Organization and the European Union to medical support of their military operations.

The author Vasyl Krotiuk wrote the article titled "Patriotic Education of Personnel of the Armed Forces of Ukraine". The article gives the substantiation of the deal and values of patriotic education of personnel of the Armed Forces of Ukraine.

The article titled „Cardiovascular Diseases, Their Prevention and the Importance of Healthy Lifestyle and Physical Training in the Armed Forces of the Slovak Republic" written by Katarína Majerčíková presents conclusions of the research focused on a prevalence of cardiovascular diseases and their prevention at the Slovak Armed Forces. The aim is to determine lifestyle of soldiers, presence of risk factors, their influence on prevalence of cardiovascular diseases and to asses a possible prognosis of the above mentioned diseases at Slovak Armed Forces taking into account the characteristics of the soldiers' career.

The article written by Katarzyna Dojwa-Turcznska titled „Poles' Sense of Security Selected Sociological Aspects" presents selected opinion surveys on Poles' sense of security, conducted on Polish population (all-Polish research sample). The issues addressed included, among other things: national security and threat of terrorism, safety in the place of residence, subjective sense of threat and situations in the respondent's life when he/she became a victim of a crime.

Dear readers, I am convinced that this edition of the Science & Military journal will provide you with valuable information necessary for your studies or scientific research. I would be really pleased if our readers published their opinions. This would support our efforts to publish diverse scientific knowledge.

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CONTEMPORARY CYBERNETIC THREATS ANALYSIS

Martin OBERT, Marcel HARAKAĽ

Abstract: Cyberspace has become into our consciousness just recently, after some cybernetic threats has been globally recognized. Prior to cyberspace we used to deal with info warfare, where the cyber space had been used just for intentional spreading of propaganda to the masses. While the info warfare could be fully controlled by involved political parties, cyber-crime and consequently cyber warfare can be secretly planed and prepared with impact equal to nuclear war. Its concealment just multiplies the impact, because of impossibility of proper defense. The main goal of this article is to evaluate current situation in the cybernetic space by giving particular analysis of cybernetic attacks within the year 2013 as a sample for collaboration and estimation of future attempts in that area. Based on the analysis in coherence with other sources we tried to establish basic issues for future possible prediction of attacks.

Keywords: Cyberspace, cyber-attack, cybercrime, cyber war, cyber warfare, cyber security, critical infrastructure.

1 INTRODUCTION

Cyber security is a very important issue of our times and is represented a broad spectrum of different perspectives. It affects all components of states, of theirs executive power, government, police, armed forces, organizations, enterprises, institutions to the level of citizens [2, 3].

Cyber security is the ability of any electronic communication network or electronic information management system to resist accidental events and harmful activities that may adversely affect the integrity, confidentiality and availability of stored, processed or transmitted information, data and services. From a procedural point of view, at the state level, cyber security is a continuous and planned increase political, legal, economic and educational awareness. It also includes increasing the effectiveness of such technical risk management measures in cyberspace for the purpose of its transformation into a trusted environment to enable securing functionality and operability of social and economic processes while ensuring an acceptable level of risk.

Cyberspace is a combined system of global interconnection, decentralized and ever-expanding electronic communications, information and management systems, as well as social and economic processes emerging in the form of data and information through these systems and stored in, respectively processed. It is considered as an interactive global domain within the information environment, which is characterized by using of electromagnetic spectrum to create, store, modify and exchange data and use of services. Protecting cyberspace involves managing security incidents and events, implementing and applying of relevant strategies, policies and security measures covering the entire spectrum of cyber threats and vulnerabilities. It is based on the existence of a clear institutional and regulatory framework, which provides competence, privileges and responsibilities of the various stakeholders.

Cyber security is factually very specific, while the cross-sectional area. It covers aspects of all social and economic life. The main area of cyber security considered:

- General security of electronic networks including Internet governance;
- Protection of critical information infrastructure;
- Cyber warfare and response to cyber-attack;
- Cybercrime;
- Cyber-terrorism;
- The security of e-commerce;
- Protection of personal data and privacy;
- Protection against spam;
- Protection against cyber espionage.

Since these areas are then derive the level of preparedness in the context of cyber security, and thus the daily application of cyber security preparedness for cyber-attacks and crime, especially on offense essential for national security. In this paper we discuss in particular the methods and technologies that engage in attacks on critical information infrastructure. The focus of this work is aimed on the analysis of cyber-attacks with paying attention to significant markers in order to attempt introduction metrics for assessing the hazard.

2 THE ANALYSIS OF CYBER THREATS

The main goal of this analysis is to offer an outlook on current cybernetic situation by providing particular analysis followed by assessing impact to significant areas of critical infrastructure.

In this part we will introduce the information sources followed by own analysis and finalized by implicated conclusions. Due to huge amount of sources widely spread out over the Internet, it was impossible to provide complex research by limited manpower, hence we have selected only paramount pattern from reputable sources representing whole research. In this part we also paid attention to proof or confute currently propagated mass awareness of cyberspace.

For purpose of obtaining data for basic statistic review we used mainly sources [7, 8] which statistical outputs were compared with other similar analysis [5].

Other relevant data have been considered information from Cnet, VISA security sense, NATO official web page, etc. Their purpose is to verify relevancy about current security awareness tender, but also to help in finding respective method for its prediction. On the other hand, we have to consider intentional related information relevancy to certain organization. It means that organization is always proclaims attack against itself as the most substantial which couldn't be true in general perspective.

It is more than clear, that situation from 90th years has been changed in ability of using resources as well as tactics and techniques as shown by graph in Fig. 1. "Level of knowledge curve" represents necessary knowledge for successful attack executing. On the other hand "Level of impact" represents how serious influence an attack would have. This curve is very closely related with volume of devices and massiveness of networking. In the past, about 20 years ago, most often attacks had been appointed against to stand alone stations, hence consequences would be moderate by immediate response so impact hadn't so fatal to operability. But nowadays each successful penetrating to network represents high risk potential due to global interconnection and high level of complexity [6]. We can finally assume that network expansion and increasing its complexity is raises "Level of impact" curve and on the other hand enhancing opportunities for attackers, hence decreases desirable "Level of knowledge".

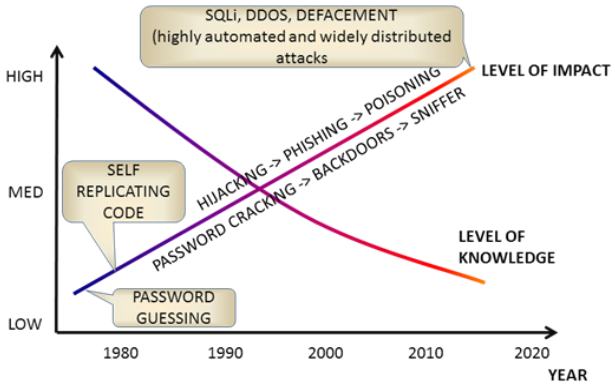

Fig. 1 Cybercrime evolutionary graph

However we are collaborating mainly with technical aspects, we are considering political and social influence only marginally despite of its obvious importance in motivation behind the attacks.

In the Table 1 we can see aggregation of cyber - attacks for the year 2013.

There is obvious change of tactics as well as techniques of attackers against we known them from the past. From the first look we can see dominance of first four recognized types of attacks (SQLi, DDoS, Defacement, Account hijacking). The reason is obvious; there are thousands of free malicious tools not only for experienced hackers. Moreover we have to mention Linux distribution called KALI Linux (also known as Back Track 6) specialized on penetrations to systems by using more than 300 penetration tools [9] working on application layer with user friendly environment. These all could be used very easily, without deeper knowledge of network switching, routing, address translating, etc. But not only Unix guru can practices attack, also many application for windows can be misused for cyber-attack. Very favoured is Burp suite with innovated components like Cross Site Request Forgery (CSRF) or well know Web Inspector for Windows or Apple. All these applications offer us user friendly environment too, with many automated tools for ethical hacking through the web.

Tab. 1 Attacks aggregation due to type in 2013

Point of interest (main target)	Figures
Unknown	235
SQLi	218
DDoS	190
Defacement	157
Account Hickjacking	114
Targeted attacks	80
Malware	34
Property hickjacking	24
Software vulnerability	15
Cross site scripting	14
Unauthorized access	14
Wattering hole	6
Botnet	5
DNS poisoning	5
Brutte Force Attack	4
KVM (Keyboard, Video, Mouse)	4
Directory travesal	3
WiFi hack	3
Man in the middle	1
BGP traffic redirection	1
NTP reflection	1

Firstly we tried to divide all cyber-attacks in order to TCP/IP layer which was affected on:

1. Network Interface Layer - attacks aimed to MAC address striking.
2. Internet Layer - attacks aimed against routing protocols.
3. Transport Layer - attacks aimed to opened ports and respective services.
4. Application layer – attacks based on applications vulnerabilities and its respective services.

For better understanding, we can assign respective protocols to these layers:

1. Network Interface Layer (ARP/RARP, NDP, OSPF, L2TP, PTPP, Ethernet, DSL, ISDN FDDI, DOCSIS, …);
2. Internet Layer (IP, ICMP, ECN, IGMP, IPSec, …);
3. Transport Layer (TCP, UDP, DCCP, SCTP, RSVP, …);
4. Application Layer (DHCP, DNS, FTP, HTTP, IMAP, IRC, LDAP, MGCP, NNTP, BGP, NTP, POP, RPC, RIP, SIP, SMTP, SNMP, SSH, Telnet, SOCKS, XMPP, …).

Such dividing would have had sense ten years before, but nowadays major of attacking procedures are transparent to a concrete layer and start and end usually on application layer. There are also some exceptions like spanning tree attack [12]. Figure 2 shows the aggregation of cyber-attacks for year 2013 graphically.

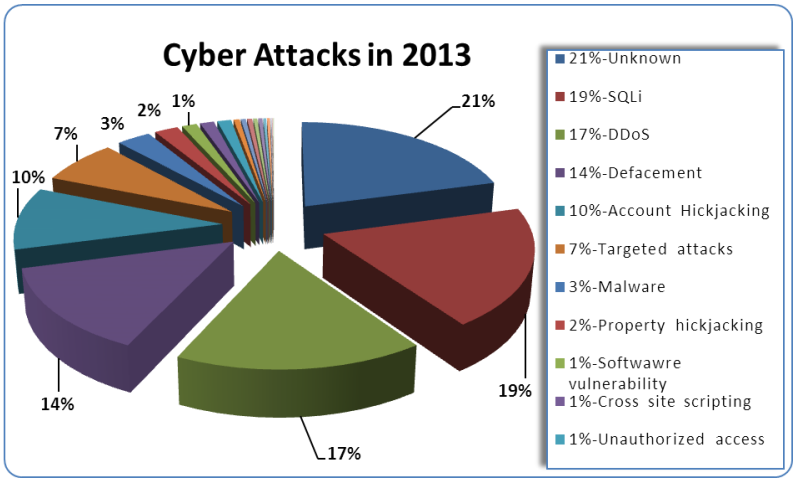

Fig. 2 Attacks aggregation in 2013

As we can see from graph only five types of attacks are, due to volume of attempts, significant (above 10 % incidence). It doesn't mean that the other 16 types of attacks are non-valuable. Quite the contrary, such rare information in certain circumstances could be very valuable for our future analysis. From the graph, we can also see that 21 % of all referred attacks were unknown. They were identified just after harming the point of interest, but attackers perfectly concealed their activities so we knew nothing about the processes behind. Similar techniques are used in stenography, when valuable information is concealed in non-valuable information blast [3]. In such case, in order to keep global relevancy, we should have involved every individual unknown attack to detail examination with paying attention to its impact to respective area. Such detail investigation exceeds our capability therefore we simply cut off these unidentified attacks.

If we look at the first four detected attacks (we excluded undetected attack – "unknown"), we can recognize relation between simplicity and frequency. These attacks SQL injection (SQLi), Distributed Deny of Services (DDoS), Defacement and Account hijacking can be fulfilled by anyone who can read, knows working with Google or other searching engines and wants to penetrate something or endanger someone [11]. All tools, included SW packages with auto-distributed netbots (network robots) simulated simultaneous users activity to a certain point of interest, are freely reachable on the Internet. Therefore, we can consider narrow relation between massiveness of attacks and user ability to execute theming, as is shown in Fig. 1. Next question in such behave is, why they did it? When we analyzed the cases individually, in numerous of attacks was only malicious intent, but no any financial profit was definitely achieved. Therefore we can assume that many attackers just want to

show themselves clear evidence, they are able to do it and many times they are not completely aware of impact to victim.

We have also assumed common model for all high density attacks which can be described by following procedure (see Fig. 3).

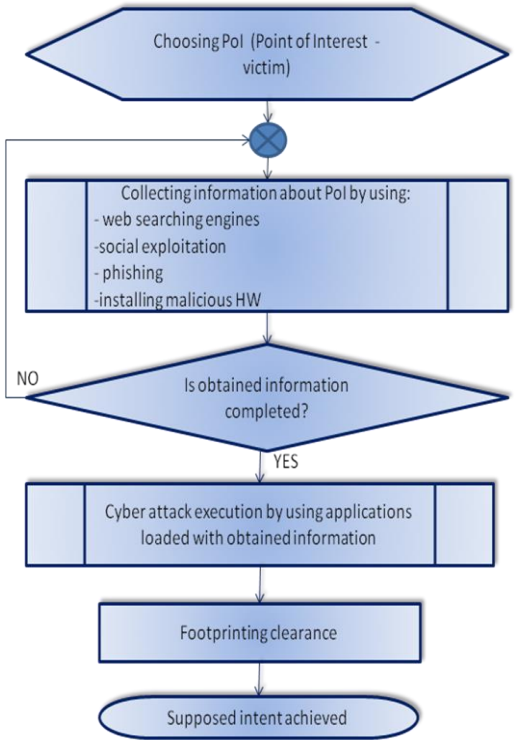

Fig. 3 Common attack procedure

As particular conclusion of this part we can declare that behind most of the cyber attacks is very similar, if not the same scenario. First step is to decide what will be the PoI (Point of interest) for hacking. Secondly, attacker starts with the procedure for information exploitation. Information, in that point, has very wide sense. It is not only limited to data or credentials, but very often there is deep research to history (we consider bigger well established company) in order to find out a lost connection for example used OOB – Out of Band modem, which is no longer actively used by administrator but still operable. After the information is puzzled, hacker can follow by third step what is own cyber attack. He combines obtained information with respective applications in order to penetrate the system. Once the system is penetrated, he needs to perform final step – footprinting clearance.

If we look at the low incidence aggregation represented by Fig. 4, respective to the same period, we can assume their difference in nature. They were very precisely directed to specific point of interest (services, devices, accounts, etc.). In some of them is clearly observable narrow intent - mostly financial gain, (i.e. Zero-day, Credit card fraud, PIN hijacking). In some of them we suppose blackmail as consequence of financial gain. However all of them are important in our source description matrix establishing.

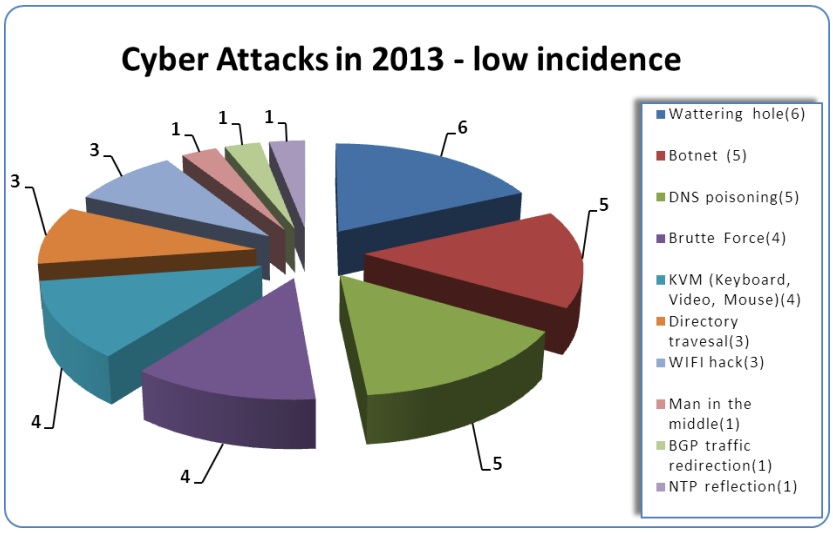

Fig. 4 Low incidence attacks aggregation in 2013

3 CLASSIFICATION OF CYBER ATTACKS

We have presented attacks in exact figures, but know nothing about their impacts to operability. Hence we should create prescription rule for evaluating differences in impact of each type of attack. To do that we have been motivated by intrusion detection and intrusion prevention systems [10] as well as role based security systems, where are used security matrixes as powerful and compact

descriptors (also known as signatures). Source description matrix *A* is rectangular 3rd dimension

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix} \quad (1)$$

Members of the matrix have the following meanings:
a_{11} - Direct loss of information.
a_{12} - Direct loss of money.
a_{13} - Stealing credentials for further exploitation.
a_{21} - Harming end devices (computers, smart phones, medical devices, nuclear centrifuges, …).
a_{22} - Harming front devices (servers, edge firewalls, …).
a_{23} - Harming infrastructure (all between 2 and 3).
a_{31} - People or groups compromising (like politicians, parties with certain interests, …).
a_{32} - Operational and working outages.
a_{33} - Foot-printing clearance.

Finally, the most important of this part is transforming the knowledge about attack impacts within cyber space to members of the matrix.

Each member of the matrix can be evaluated from 0 to 5 due to its level of impact in an attack. Zero means no impact (victim is not influented by the particular threat), five means the highest impact (no other threats could have higher impact on the victim). Now we consider that all members in matrix **A** are independent to each other. It means that occurrence of member a_{11} has no influence to member a_{12}, a_{13}, … , a_{33}. But in real life it is not true. For instance when somebody stole data from a company (a_{11}), it is highly probable that it would have impacted also financial losses (a_{12}). This evaluation is closely related with Fuzzy logic theory, because we assume in certain level of vagueness. Hence it can be applied as suitable for further data processing, but its complexity exceeded range of this article. In matter of our evaluation we just tentatively consider attack influence to each member.

4 AGGREGATION OF CYBER ATTACKS

We should also combine some attacks according its similarity into one, where we used following aggregation:

$$MAX\ [\boldsymbol{A}, \boldsymbol{B}], \quad (2)$$

where **A** and **B** are impacted matrixes of original attacks.

For instance we fused Darkleech apache redirection impact matrix and iFrame redirection impact matrix into common one named as **Cross Site Scripting** attack group, hence we apply MAX:

$$A = MAX \begin{bmatrix} 1 & 3 & 4 \\ 2 & 3 & 1 \\ 0 & 1 & 5 \end{bmatrix}, \begin{bmatrix} 4 & 2 & 5 \\ 1 & 1 & 3 \\ 4 & 1 & 4 \end{bmatrix} \quad (3)$$

$$A = \begin{bmatrix} 4 & 3 & 5 \\ 2 & 3 & 3 \\ 4 & 1 & 5 \end{bmatrix} \quad (4)$$

Due to such combination we reduced number of types of attacks from 44 different attacks to only 21 based types. Such reduction is prerequisite for smooth data collaboration and better visibility. After applying the above mentioned principles, we gained following aggregation (see Table 2).

Tab. 2 Aggregation of cyber attacks

Attack	Description	Impact matrix
SQLi attacks	SQLi (Structure Query Language injection) is based on seeking potential vulnerabilities for example by using Google Dorking searching in order to convince the application to run SQL code that was not intended. Using extended knowledge of SQL, we can test the obtained URLs on real vulnerability. If URL returns ERROR, no matter what kind it is, the URL is vulnerable on injection technique.	$\begin{bmatrix} 4 & 2 & 4 \\ 3 & 0 & 0 \\ 1 & 2 & 5 \end{bmatrix}$
DDoS attacks	DDoS consists of two principles – Distributed and Deny of Services. This kind of attack is provided from numerous of users simultaneously in certain time, hence distributed. But do not in opinion that hundreds whether thousands of users are really involved to this attack, but it is usually based on virtually generated computers by any netbot (program behaves like robot). When such massive number of requests for service comes to a certain point (protocol on server side) it is unable to fulfill response to all of them and deny to answer some of them. In certain	$\begin{bmatrix} 0 & 2 & 0 \\ 0 & 4 & 1 \\ 0 & 5 & 4 \end{bmatrix}$

	circumstances all service could stop (freeze) and administrator is needed in order to fix the problem.	
Defacement	This kind of attack is based on muting original web page (respectively its visible context) by replacing it with a hacker's one. Main intent is to spread certain information to the page visitors, very often having political or religious content. Hence this kind of attack can be rightly assumed as cybernetic crime in cyber war. For its achieving there is abundantly used SQLi penetration to system in order to gain administrator account information.	$\begin{bmatrix}1 & 2 & 0\\3 & 0 & 0\\5 & 1 & 0\end{bmatrix}$
Account Hijacking	It is a form of identity theft without any knowledge of its originator. The basic method for achieving the identity theft is phishing. Phishing is well known in relation to email account, when someone sends you emails requiring personal (confidential) information in order to create all your profile of identity form these cookies. Once shadow profile is completed, account is hijacked. Usually it is just starting point for further collaboration. With this fake profile he can obtain further information like access to bank accounts, emails, mobile phone, etc.	$\begin{bmatrix}2 & 4 & 5\\1 & 3 & 0\\4 & 1 & 4\end{bmatrix}$
Targeted attack	This attack is concretely concerned to a certain issues (point of interest). Such attack is usually provided by penetrating trigger code into host device for instance via malware. Once malware is launched, intruder can effectively attack the host.	$\begin{bmatrix}4 & 4 & 3\\4 & 0 & 0\\2 & 1 & 4\end{bmatrix}$
	Generally, it is malicious software which has no concrete aim. Its goal is only incur damage in hosting device. Malware is often used as an agent for upper levels of attacks (Defacement, Account hijacking, DNS hijacking, …).	$\begin{bmatrix}4 & 1 & 4\\5 & 4 & 0\\1 & 0 & 4\end{bmatrix}$
Property hijacking	To this group we assume certain kind of attacks where main point of interest is to hijack a foreign property in order to achieve a gain. We consider to this group attacks like DNS hijacking, PIN hijacking but also attacks like drone hijacking, whether CCTV circuit hijacking. All of these have different approach using different tools for their execution. Account hijacking has special status due to contrast in figures.	$\begin{bmatrix}4 & 2 & 5\\0 & 1 & 3\\2 & 1 & 4\end{bmatrix}$
Software vulnerability	It is a technique uses knowledge of back doors in different codes running on computer (like default passwords, hardcoded passwords, …).	$\begin{bmatrix}5 & 2 & 2\\1 & 1 & 1\\4 & 1 & 5\end{bmatrix}$
Cross Site Scripting	Cross site scripting (XSS) is a technique based on redirecting user by a tag from well- known site to a site containing malware. By using Google dork attacker can easily find suitable site for implementing the tags. The tag redirect user to attacker's private site through which attacker can penetrate to the host computer by numerous of ways.	$\begin{bmatrix}4 & 3 & 5\\2 & 3 & 3\\4 & 1 & 5\end{bmatrix}$
Unauthorized access	It is general term, when attacker gains access to host system. It can be provided by numerous methods and ways and it is usually one process of complex hacking. The report can indicate unsuccessful attackers attempt, when it was detected and stop by IPS or IDS.	$\begin{bmatrix}2 & 2 & 4\\1 & 1 & 1\\3 & 1 & 0\end{bmatrix}$
Watering hole	Is a technique uses pivot sites for distributing malware to point of interest sites which are likely visited by potential victims, in order to collect different data from them.	$\begin{bmatrix}2 & 2 & 0\\1 & 1 & 0\\3 & 0 & 5\end{bmatrix}$
Botnet	It is combination of two words: robot and network. Hence we can assume it is an automat operates somewhere in the network, but its purpose is very versatile. Botnets can be used for numerous of attacks like DDoS,	$\begin{bmatrix}3 & 3 & 4\\2 & 2 & 0\\3 & 1 & 3\end{bmatrix}$

	Adware, Spyware, Scareware, Spamming, Click fraud, Brute force remote machine, Exploiting system, … Regarding to impact we assume only their presence not consequences of their activities.	
DNS cache poisoning	It is intentional attacker penetration into local DNS cache in order to redirect users requests to attacker site where is possible infecting by malware.	$\begin{bmatrix} 2 & 0 & 0 \\ 0 & 5 & 4 \\ 0 & 3 & 2 \end{bmatrix}$
Brute force attack	This attack based on systematic guessing according to dictionaries or iterations has been very popular in the past. Nowadays the method has very poor success due to its preventing in most systems. It can be easily detected due to its numerous repeating.	$\begin{bmatrix} 2 & 1 & 2 \\ 4 & 4 & 1 \\ 0 & 2 & 1 \end{bmatrix}$
KVM attack	Keyboard, Video, Mouse (KVM) attack is primary based on social exploitation in relation with banks or similar institutions. Attacker usually acts as IT engineer in order to gain access to a computer (somewhere in company branch) to install devices and programs called KVM tool. Since the device has been installed, he can remotely control and collect data for upcoming attack.	$\begin{bmatrix} 4 & 5 & 5 \\ 5 & 3 & 2 \\ 3 & 0 & 5 \end{bmatrix}$
Directory traversal	It uses lack of security / sanitization in installed applications on victim computer, where own applications under attacker control can act as malware and exploit data by skipping to sensitive directories.	$\begin{bmatrix} 4 & 1 & 4 \\ 2 & 4 & 0 \\ 2 & 2 & 4 \end{bmatrix}$
WiFi hack	Wireless security is much disputed area today. Main reason is that all traffic is available for eavesdropping. Such massive potential produced plenty of free tools available on the internet. On the other hand encryption deep of the password is often very low.	$\begin{bmatrix} 1 & 1 & 5 \\ 4 & 1 & 5 \\ 1 & 3 & 5 \end{bmatrix}$
Man in the Middle (MiM)	It has been a response to mutual authentication security. This authentication uses asymmetric cryptography (public and private keys) very often and is it almost impossible breaks it remotely. Hence new approach MiM has been developed, where attacker eavesdrops authentication process and acts as one of the endpoints.	$\begin{bmatrix} 3 & 5 & 3 \\ 1 & 3 & 3 \\ 4 & 0 & 5 \end{bmatrix}$
BGP traffic redirection	This is quite new technique based on traffic redirecting by abusing one of BGP metric. It is granularity, attacker offers network entry with better granularity in order to divert traffic.	$\begin{bmatrix} 4 & 0 & 1 \\ 0 & 0 & 5 \\ 0 & 5 & 5 \end{bmatrix}$
NTP reflection	Network Time Protocol (NTP) reflection can be very useful well of information for attackers. NTP reflection uses remote command (monlist) which returns list of the last 600 hosts who have connected to the server.	$\begin{bmatrix} 4 & 0 & 0 \\ 0 & 0 & 3 \\ 1 & 2 & 4 \end{bmatrix}$

When we obtained signature of uncertainty respective to each type of attack, we can collaborate with them by using suitable tools. On the other hand we have to be aware that above written analysis is just a point of set, hence we are unable to do any deeper timely depended analysis like prediction tenders.

In this way we can analyze level of impact directly from matrixes; compare it along to each other. We can also directly see density of attacks fuse density of attacks with respective levels of impacts.

5 CONCLUSION

Many of successful attacks from history were based on obtaining company profiles, employees' information and archived information as well as other helpful information prior to own attacks execution. Technical aspect has almost constant influence to final success, due to its similarity since very first cyber attack has been executed, but only social information (see "footprinting" in [1]) can dramatically balance final impact on victim. It is clearly visible from attacks summarization that certain types of attacks are denser like others. Approximately fifty percent of all attacks are covered by SQLi, DDoS and Defacement. All these attacks have common following features:

1. They are independent from hardware resources.
2. Execution is based on user friendly application environments.
3. Are aimed to never ending vulnerability resources (databases and web pages).

In contrary of massiveness of the above mentioned attacks, during observed period we recognized only 3 attacks against to wireless systems. In spite of their progressive expansion, recognized success in penetrating is very rare. The main reason is in unification control of its security by WiFi alliance by issuing common security certification WiFi Certified™. Such central management appears as a great benefit against to shattered security patterns in different providers and consumers of numerous web applications and databases. We could assess to the future very similar approach to securing the most vulnerable parts of cyber space by issuing certifications by central authority, when installation wants to be joined to the cyber space.

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THE DESIGN OF A COLLABORATIVE MODEL FOR DEFENSE INDUSTRY USING THE IDEF METHODOLOGY

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Abstract: The paper presents the way one can create a cluster-type collaborative model, specific to the field of defense using methods specific to modeling. In this demarche we have opted for the IDEF method (a functional modeling method) so that the developed model should highlight its stages and activities, the input data, the control elements, the mechanisms governing the system and, finally, the output data. For this, we used the iGrafx Process 2013 software, which is the easiest-to-use tool for the analysis and simulation of processes specific to quality management and more.

Keywords: Cluster, modeling, collaborative model, the IDEFO method, defense.

1 INTRODUCTION

In a period in which the effects of globalization are becoming more and more obvious, when people speak more and more often about a *globalized defense industry*, it is particularly difficult to talk about the future of the national defense industry or about the possible role and/or place it will have in a very possible defense industry established at European level.

Until then, its survival solution is the adoption of policies and intelligent solutions for making weapons systems consistent with the following: the resizing of the national defense structures, the capabilities of the forces and the purpose of the weapons systems intended for military operations, the production costs, operationalization and maintenance, the budgetary constraints as well as identifying the ways in which some of the products and services can be transferred to the civilian environment after the service period.

2 CLUSTERS – THE COLLABORATIVE MODELS OF THE FUTURE

The concept of "cluster" is not new, having a relatively long history, being assigned different names: "pole of competitiveness", "industrial district", "industrial agglomeration." Currently, the terms most often used are those of "cluster" and "pole of competitiveness" (in France and Belgium), the most established term being that of "cluster"[1].

Currently, the most widely used definition of the cluster is given by the one who is responsible for the popularization of the concept, Professor Michael Porter: "Clusters are geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies, or common inputs" [2].

Clusters are characterized by a flexible organization, each member fulfills certain activities, has a role established according to the strategy of the cluster and to the market requirements [3].

3 THE IDEF METHOD (INTEGRATED DEFINITION)

IDEF (Integration Definition) represents a family of modeling languages in the field of software systems and engineering. They cover a wide range of uses, from functional modeling, to data, simulation, object-oriented analysis/design and knowledge acquisition (www.idef.com). The IDEF methods are used to model activities and processes to support the integration of information. The IDEF methods represent a set of independent methods that prove useful when used in an integrated manner. Hence the name of Integrated Definition [4].

So far 16 IDEF methods have been defined, out of which 6 have been developed, the rest still being in the definition stage.

4 DEVELOPING A COLLABORATIVE MODEL SPECIFIC TO THE FIELD OF DEFENSE BY USING THE IDEFØ METHOD

The development of the collaborative model specific to the defense field using the IDEFO methodology is a symbolic representation of the system and of all the elements it contains.

The adopted model allows an efficient description of the functions of the system through the process of decomposition of the functions and of classification of the relations between the functions (as inputs, outputs, control and mechanisms).

One of the advantages of using this method is that it allows detailing each function of the system on three levels, from general to particular.

Since the proposed conceptual model aims to integrate several types of entities in a possible collaborative model specific to defense, we

considered appropriate to detail the functions of the model and their relationships to a level that makes it possible to understand each stage of the model cycle life.

Thus, the model was decomposed on two detailed levels, as follows:

A0 - COLLABORATIVE MODEL - ***Romanian Defence Cluster*** **(RDC)**

– **A1** - EXPLORATION
- **A 1.1** - Launching of the collaborative model for development
- **A 1.2** - Identifying and assessing the potential of the cluster and of the cooperative groups
- **A 1.3** – Declaring the involved parties

– **A2** - ACTIVATION
- **A 2.1** - Recruiting the members
- **A 2.2** - Establishing interim management bodies
- **A 2.3** - Declaring benefits and success conditions

– **A3** - STRUCTURING
- **A 3.1** - Setting the objectives and the strategy
- **A 3.2** – Establishing the organizational and management structure
- **A 3.3** - Delivering the business model

– **A4** - GROWTH
- **A 4.1** - Organizational development
- **A 4.2** - Development/improvement of the human resources
- **A 4.3** – Establishing the innovation structures

– **A5** - INTEGRATION
- **A 5.1** - Stabilizing the cluster
- **A 5.2** - Developing the networking process
- **A 5.3** - Internationalization
- **A 5.4** - Management analysis

– **A6** - RESTRUCTURING
- **A 6.1** - Expanding the business models
- **A 6.2** – Developing the restructuring plans
- **A 6.3** - Reinventing/Memberships in other collaborative forms

The **purpose** of developing this model is to develop generic systems that could be used, first, for the development of capabilities of scientific research and production specific to the entities in the field of defense, and, secondary, to increase competitiveness and the employment rate of the labor force by interconnecting people, skills, competencies and knowledge.

The **objective** of this model is the integration of different entities into a specific collaborative model specific for the field of defense.

For developing the conceptual model the **iGrafx Process 2013 v.15.0** software was used, the menu of the application, with the main stages represented sequentially, being shown in Fig.1.

The first level of decomposition is detailed in Fig. 2 where the main stages/phases specific to the collaborative model are presented.

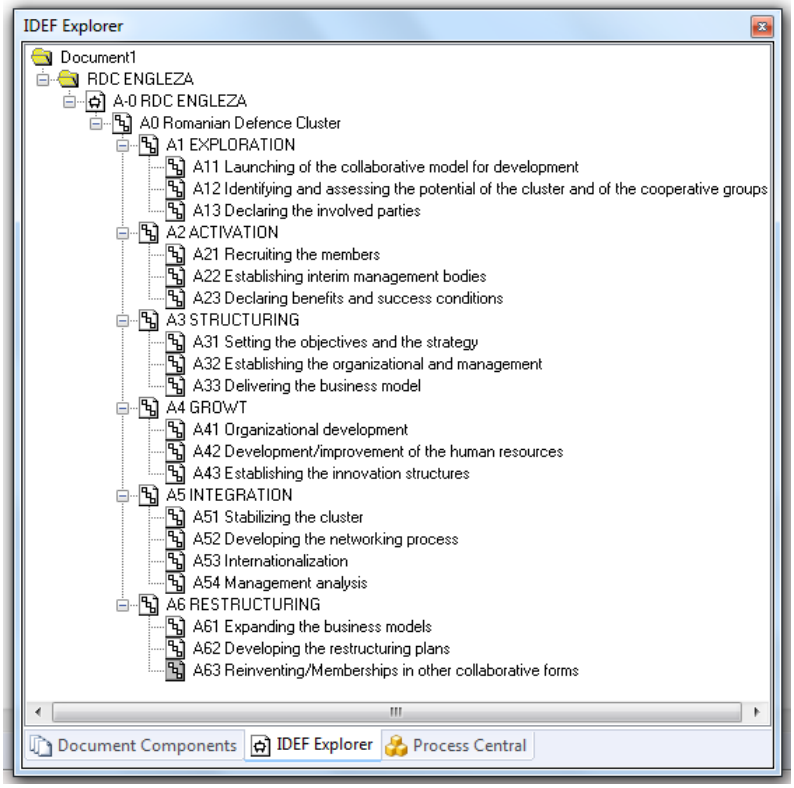

Fig. 1 Decomposition of the activities within the application

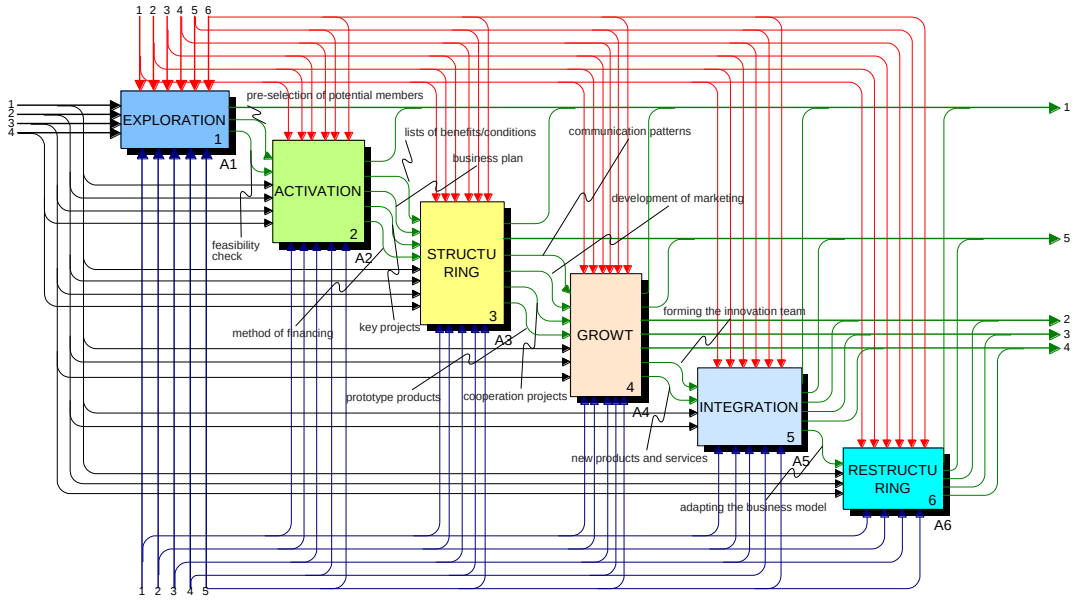

Fig. 2 The RDC collaborative model. Steps

Each of these stages/phases, being addressed as processes, were broken down into sub-processes and modeled individually. In Fig. 3, the exploratory phase of the collaborative model is presented.

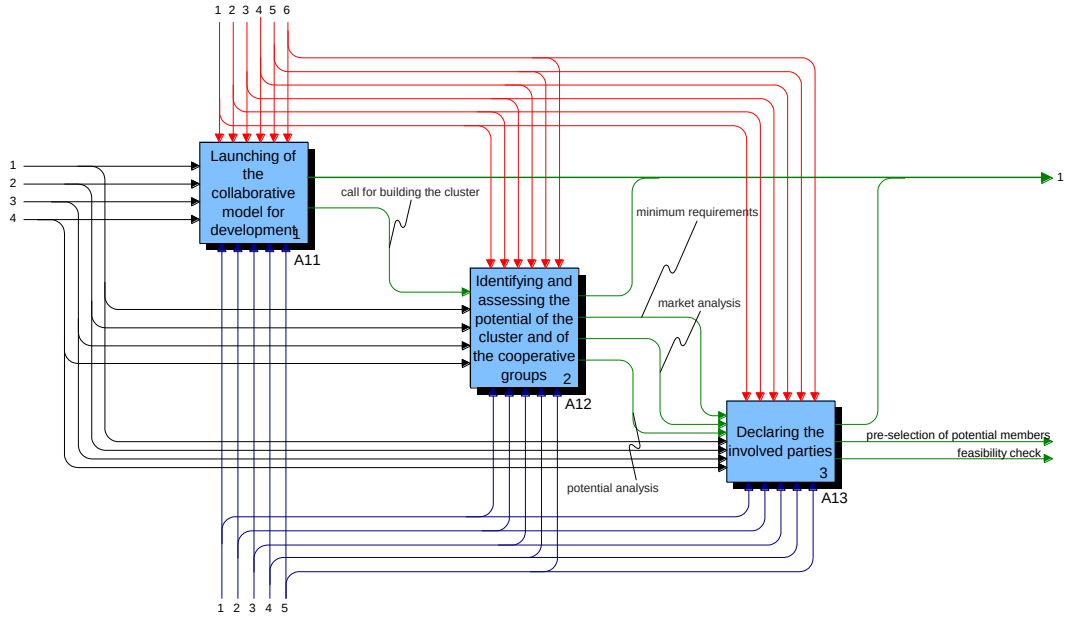

Fig. 3 The collaborative RDC model - the exploratory phase

The *exploratory phase* involves identifying and evaluating the potential of the cluster and of the cooperation groups. During this phase, local opportunities that can be exploited by attracting local resources or other conjunctural factors are identified.

Fig. 4 presents the second phase, the activation phase, which involves recruiting the members and the corporations first. After the appointment and the launching of the local leaders, it is necessary to attract a large number of partners that are bound to the cluster through a cooperation agreement. During the activation phase, there appear the first negotiations between the partners who are able to take risks and invest in new products. One factor that may contribute substantially to the establishment of the cluster is given by the availability of universities and/or other research infrastructures in the area.

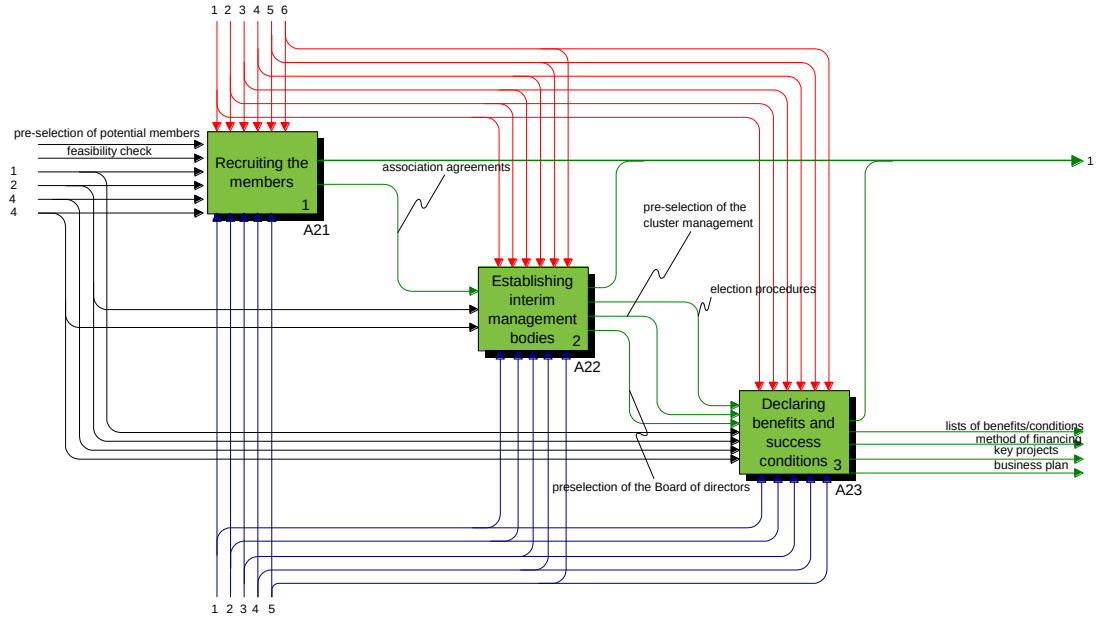

Fig. 4 The RDC collaborative model - the activation phase

During the *structuring phase* (Fig. 5) the objectives and the strategy of the cluster are defined. At the same time, the necessary financial and human resources for a determined period of time are provided. The structuring phase is characterized by the development of reliable social relations between the partners in the area. The cluster acquires a specialization, which is promoted through the regional policy. The products are in the phase of prototype development.

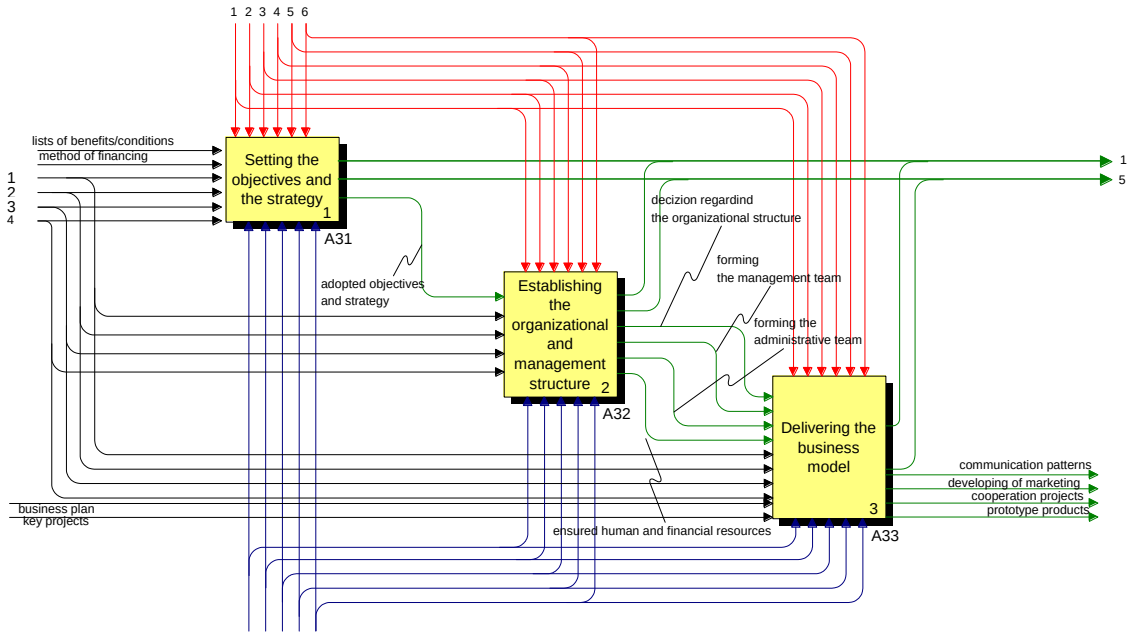

Fig. 5 The RDC collaborative model – the structuring phase

During the *growth phase* (Fig. 6), with the expansion of the network, the importance of its configuration also increases from an organizational point of view and from the point of view of human resources. Particular attention is given to the selection of network actors, especially for the promotion of the innovation process. During the growth phase, the innovative enterprises of the cluster begin to create a system of innovation. This is explained by the lowering of the benefits offered

by the original local conditions, by the need to develop and improve the specific local factors. The research of the enterprises is focused on product differentiation. Thus, the network is successful when it obtains the consensus of the regional actors regarding the importance of the regional cooperation and of increased performance.

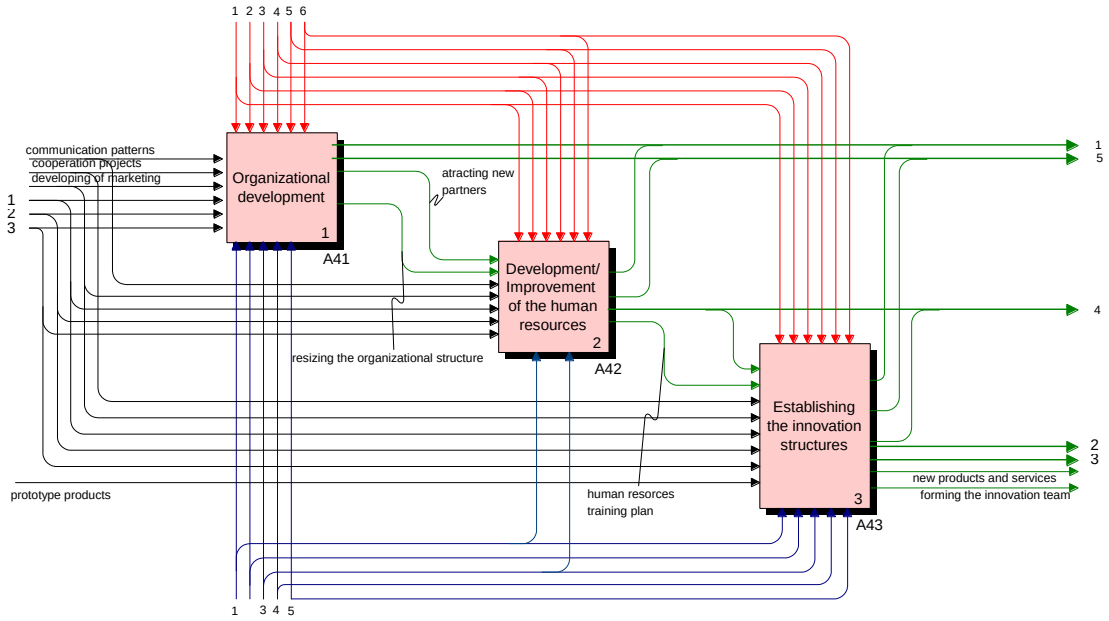

Fig. 6 The RDC collaborative model – the growth phase

Fig. 7 presents the *Integration phase*. This can be considered as the critical point of the life cycle of the clusters, the moment when the enterprises within the cluster have the advantages of flexibility and of openness to novelty higher than in the case of a hierarchical organization. The cluster enterprises can react in time to the changes in the economic environment and can make the leap to a new phaseof growth. The previous relations of cooperation lose importance due to the development of the enterprises, and the implicit initial knowledge disseminates outside the cluster. The cluster enterprises look for new fields of activity, and some even manage to develop innovation systems, most often on the structure of the former domains.

Fig. 8 presents the latest phase in the life cycle of the collaborative cluster model.

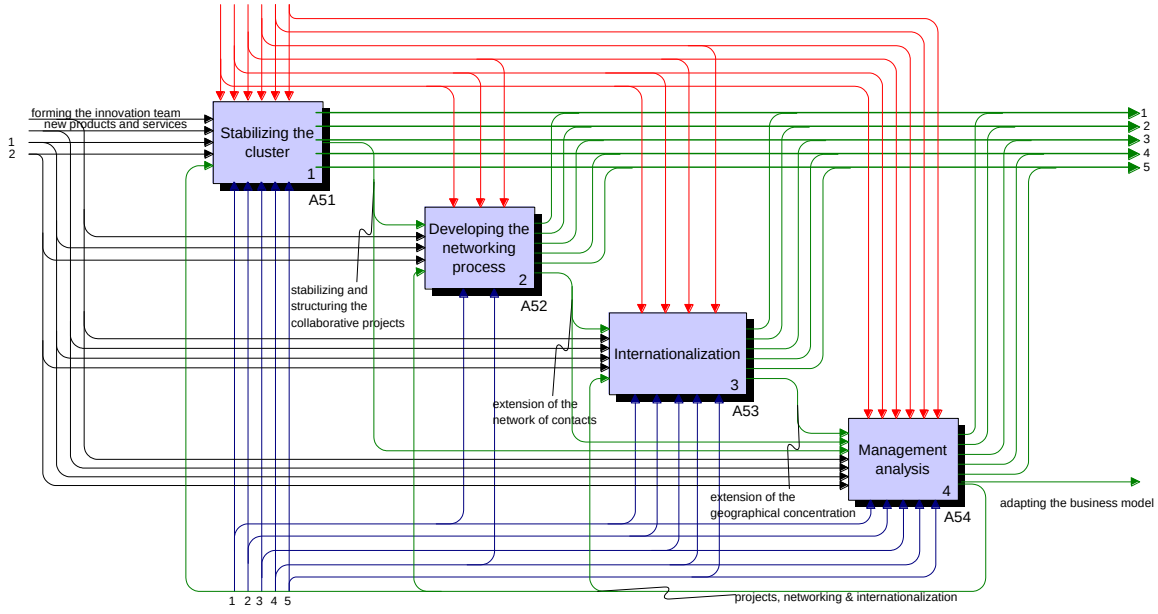

Fig. 7 The RDC collaborative model – the integration phase

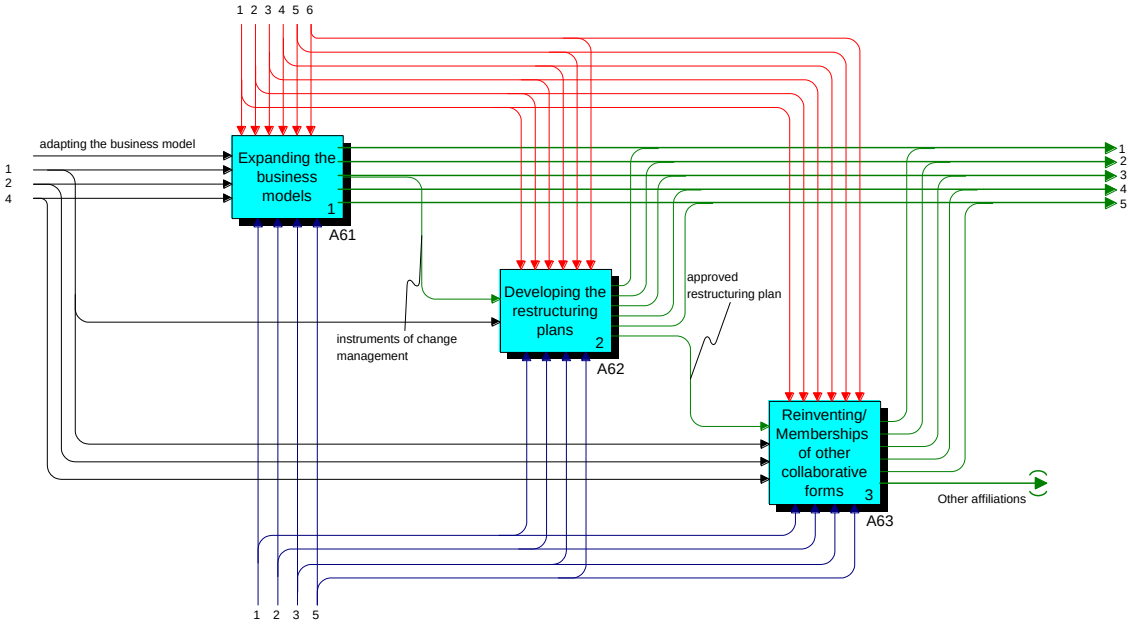

Fig. 8 The collaborative RDC model -The restructuring phase

The restructuring phase marks a radical change for the cluster. The phenomenon of the regression of the cluster can occur, which may be due to the relocation of the actors that represent the core of the cluster to better regions in terms of cost or as a result of economic events that have major effects, such as wars or crises.

There also exists the possibility of affiliation within other collaborative forms in order to be able to adapt to changes in the market.

5 CONCLUSIONS

This conceptual model, developed using the IDEFO methodology, illustrates all the important activities in the order of their succession as well as all the relationships established between the different entities involved in the implementation and development of a collaborative model designed for defense.

An important aspect is the fact that by using this method, in addition to the rigorous planning of all the activities, the opportune intervention at various stages of the process is also possible, thus achieving the necessary corrections so that the main effort should be channeled to achieve the aim and the objectives proposed through such a project.

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THE INFLUENCE OF ORGANIZATIONAL CULTURE ON FLIGHT SAFETY

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Abstract: The present paper aims to highlight the influence of organizational culture on flight safety. In order to provide the optimal balance between the high operating level and the reduced level of human and material loss, Flight Safety appears as a component that influences significantly the combat capacity of the Air Force. Based on these considerations, I dedicated this paper to the organizational culture of flight safety and I tried to illustrate the existent vulnerabilities and malfunctions that may affect the carrying out of aviation activities in the absence of a positive, proactive safety culture, whose primary purpose is to prevent aviation accidents.

Keywords: Flight safety, culture, organization, management.

1 INTRODUCTION

In order for efforts taken to produce safety to be successful, organizations need to fully understand the influence of culture on their activities. Culture surrounds us and defines our values, beliefs and behaviors which we share with the other members of the community, it manages to keep all of us united and it gives us indications about how we should behave under new, unexpected circumstances.

The aviation system is known as a system with a high level of risk, which implies a tight collaboration between two subsystems, the technical and the human ones. Problems that appear in one subsystem cause deficiencies to the entire system, whereas a catastrophic failure does not only affect the organizational environment, but also the external environment, the public. As far as the aviation industry is concerned, safety management seems to be almost perfect. Aircraft hardly crash and a common assertion related to flight safety claims that the most dangerous part of an air travel is the car driving up to the airport. Behind this optimistic vision there are vulnerabilities and critical issues that affect the aviation safety, but which are painfully attempted to be overcome.

Aviation Safety management represents the action of coordination of all activities and resources, in an anticipatory manner, proactive, planned and explicitly sustained by procedures and operating documents abided by at all organizational levels (up to the highest hierarchical level) and throughout all stages of flight activity. Flight safety management includes various systems, practices and procedures, which are yet not sufficient provided they are done mechanically. This management needs improvement on two plans: a renewal of technology, once with the latest aircraft generation, and the application of an efficient organizational culture, in which individuals gain their abilities of detecting hazards, of being careful and preventive, of knowing what they have to report, whereas managers learn how to prove their dedication and involvement through real actions.

2 FLIGHT SAFETY PART OF THE ORGANIZATIONAL CULTURE

The organizational culture of safety represents "the product of individual and group values, of attitudes, competences and models of conduct that determine the orientation, style and efficiency of an organization toward safety programs" [1]. Organizations that hold a positive safety culture are characterized by communication based on mutual reliance; trust in the efficacy of safety rules, by permanent awareness of risks, the maintenance of vigilance and adequate management of punishment measures, as well as by the recognition of the fact that different types of cultures within which the aviation personnel operates hold an impact on their flight performance and may lead to negative effects (potential risk).

At the level of aviation organization, there were recorded, in time, various preoccupations with regard to carrying out activities safely. Instead of the traditional approach, of recording events separately and discovering the generating causes, there is promoted a systemic organizational approach, of prevention, awareness, understanding and control of hazard. The real challenge for the management of aviation organizations is to develop professional initiatives, performance-oriented and at the same time with the improvement of flight safety.

Based on the own safety management of each organization, there can be distinguished five types of organizational cultures [2]:

1. Pathological – the organization is less interested in safety and much more in not being caught while breaking rules and regulations; failures are covered, ideas are annihilated;
2. Reactive – the organization seeks to diminish the consequences and to "repair" the effects of incidents and accidents after their occurrence;
3. Calculative – although the organization detains systems for calculating and controlling the intervention of hazard, these are mechanically applied, even if the leading factors sustain the use of these systems, they do not consider them to be of critical importance for the flight activity;

the responsibility is divided, the information is considered to be routine, and new ideas are nothing but problems that manifest opposition;
4. Proactive – resources, leadership and safety system are open, capable to fix things before hazard strikes; they lead to a continuous improvement;
5. Generative – the "sure" behavior is present in any of the actions and activities of each member of the organization; the value of the safety management system is internalized and transformed into conviction; new ideas are welcome, information is perceived as the key of resources, responsibility is shared equally, whereas failures lead to certain lessons that need to be learned.

A generative organizational culture, "sure", does not become as such overnight, without drastic changes in drawing procedures and without changes of personnel. But once it has been gained, it confers the organization a high level of reliance and security, manifested through:
- decreased rate of accidents;
- active involvement and responsibility on the side of all members;
- initiative in operations, safety procedures;
- direct and efficient feedback;
- careful and constant monitoring of procedures;
- continuous and intense training;
- establishing of performance standards, both internally and externally;
- planning of multiple scenarios to create the necessary variety;
- desire to try out new ideas while accepting the risk of failure.[2]

Once the organization reaches the last level of evolution in flight safety culture, the process of carrying out activities and accomplishing performance objectives takes place linearly, without interruptions or syncope, within a frame that allows the efficient administration of resources and the awareness of vulnerabilities which may alter the system's image. In order to reach the practice of a generative culture in flight safety, the organization needs to promote knowledge of concepts in safety management and organizational culture and to strengthen its information gathering, mutual reliance and responsibility.

3 CHARACTERISTICS OF THE ORGANIZATIONAL CULTURE OF FLIGHT SAFETY

An organization that applies organizational safety is characterized by the following particularities: information gathering, vigilance, reliance, flexibility, adjustability and continuing training. Taking these characteristics specific to an organization that applies a positive safety culture into account, there will be developed a series of organizational attributes and requirements meant to maintain the high level of safety culture in aviation. These are both simple conditions, easy to carry out, and safety management strategies, which demand special attention and a certain amount of time destined to their assimilation. Thus, the basic conditions of the safety culture, valid for aviation, are as follows:
- agreement to take action for reducing error-favoring conditions through emphasizing the issue of safety, promoting realistic and applicable rules;
- encouraging feedback, diagnosing data and transmitting relevant information for safety;
- an optimal report and a perfect balance between efficiency and safety;
- achievement of and maintaining an efficient system of mirroring the situations and events of potential risk;
- openness on the side of the mangers to accept criticism and counter opinions;
- creating and maintaining a performance line of the organization;
- training for the application of management strategies of personnel, stress, decision making, risk and failure;
- permanent conduct of surveys able to offer images of the personnel's perceptions of safety;
- a "sure" organization learns from its own experience, own successes, but from its own failures, as well. [3]

Any activity of flight training and practice has to take into consideration the possibility for risky situations to emerge, situations that involve a deviation from the initial plans and missions to be accomplished. Under such circumstances, the organization has to recognize the inevitability of error; it has to efficiently manage threats and to reduce the risky evolutions of the aircraft.

Threats are defined as external events that occur outside the action range of an aircraft and that need, increasing the operating complexity of the aircraft and that need to be considered so as to maintain the safety factor within normal limits. During a routine exercise, the crew takes into account the complexity of some special cases and their solving. Such special cases include, for example, various meteorological factors, airports surrounded by mountains, with high altitudes, heavy air traffic etc. Some of the threats may be anticipated, they are knowledgeable to the crew before they become manifest (a storm, a rush air traffic hour etc.), while others are unpredictable, they appear suddenly (malfunctions of some systems aboard), they require of the pilots to take prompt action and to apply the knowledge they acquired

during training hours. There is also a third category, the latent threats, which are not evident and cannot be easily noticed whenever they occur, but which affect the safety of activities. Out of this category come equipment malfunctions, optical illusions, program alterations, sudden changes of planned actions. Solving threats is the most efficient option to maintain the limits of safety and to avoid situations that may compromise the evolution of the aircraft and the crew's integrity. Pilots represent, in such a context, the main factor that can avoid the impact of threats on the operations in progress.

Errors may be defined as actions or inactions of the flying personnel that lead to deviations from the intentions and expectations of the organization. Not solving these errors or their wrong interpretation may lead to undesired performances of the aircraft. Errors may be spontaneous (without any connection with some evident threat or a specific one), in tight relationship with air threats or a component part of a chain of errors. For example, I can mention the inability of maintaining the flight parameters, the execution of some mistaken maneuvers in the air, the lack of radio contact or the wrong interpretation of the message transmitted by the air traffic controller. Irrespective of the type of error, its effect on the flight safety depends on the detection of the error in due time and on the pilot's reaction. From the perspective of the organizational culture, operational errors detected in due time, with a prompt answer (solved in agreement with their generating factor) do not lead to undesired evolutions and do not threaten the safety factor. Moreover, solving an error en route represents a human successful performance, highlighting the value of training and education.

Error management strategies have even made up a classification of errors, based on the primary interactions of a pilot with the external factors at the moment of the error's occurrence. Thus, there are piloting errors, when the pilot or the crew interact with the aircraft, through controls or operating systems; procedure errors, when the pilot or the crew execute specific operations or procedures, checklists, standard operating procedures; communication errors, when the pilot or the crew interact with other people, the air traffic controllers, the ground crew or other members of the flight crew etc.

Through threats and error management, the flying crews have the possibility to solve some risky evolutions and to re-establish the limits of safety. Once the undesired statuses become consequences, the return to a normal operability and the restoration of safety are no longer possible.

Countermeasures adopted by pilots against threats, errors and undesired statuses of their aircraft are based on both their actions and the technology existent aboard the aircraft (Airborne Collision Avoidance System – ACAS; Ground Proximity Warning System – GPWS), as well as on strategies and tactics, individual or collective, that include knowledge and aptitudes (standard operating procedures; checklists, briefings, trainings etc.).

The Aeronautical Decision Making (ADM) represents an essential decision making process for the flight safety, most of the fatal accidents, produced as a result of piloting errors being the result of the decision-making behavior, known as cognitive judgment. The decision-making process in aviation is a systematic closeness to the mental process used by pilots in order to detect the best action variant to answer some given circumstances. Through the ADM techniques, a better judgment is being developed, which allows the pilot to establish an intelligent recognition of the risk factors such as weather, weight and attitude, his own experience, background and cockpit stress, and a clear judgment of critical situations.

The steps involved in an optimal decision-making are:

- identification of hazardous attitudes for the flight safety;
- identification of attitudes that represent a hazard for the flight safety;
- learning of new techniques of control and alteration of behavior;
- learning of new modalities through which stress can be recognized and faced;
- development of risk assessment competences;
- use of all available resources;
- evaluation of decision-making competences of a person.

The initial instruction for manipulation and control of an aircraft requires a period of time of several months of work and training, nevertheless, the training for the total and intelligent control of flight takes about a decade or two of experience, regular training, a rapid shift from physical requirements to mental ones. ADM can reduce this long process of learning the manner in which optimal decisions are being made to ensure a mission with success and safety.

Stress, another insecurity generating factor, is a term used to describe the unusual answer of the human body to requests sent to it. In the pilot's activity there are numerous physical and psychical requirements, coming from his personal or professional life, which affect his action capacities at an optimal level and the making of best decisions. Although it produces non-specific effects on behavior, stress is an inevitable mood and a necessary one in the pilot's activity, motivating him to face the challenges and risks he comes across and forcing him to adjust in order to control the situation.

By applying stress management, the organizational culture promotes diverse techniques

to reduce and prevent stress. Thus, the flying personnel needs to:
- gather as much knowledge/data about stress;
- realistically self-assess themselves;
- approach problems systematically;
- develop a lifestyle that is able to diminish stress effects;
- practice behavioral management techniques;
- establish and maintain powerful social relationships.

The efficient management of developed actions does not allow for flight activity to become a stressing factor. But if flight becomes a stressing factor, then it is recommended to take a break and to ask for professional help in order to combat it.

The organizational culture of flight safety determines the orientation, style and efficacy of an organization in order to maintain safety programs. It projects the running of activities in the light of preventing incidents, detecting and annihilating threats and becoming aware of vulnerabilities, and it relies on the principle of learning out of shortcomings. In an ideal world, the vision of accidents as techno-social phenomena should be joined by an investigative attitude, able to seek for and explain hazards, much more than searching for guilty people. Practice has proved that any investigation looking for guilty people has fewer chances to find out true explanations, based on which to take efficient preventive measures. Starting form this reality, military aviation has adopted the solution of investigating accidents by two commissions in parallel, one for the inquiry, searching the establishing of responsibilities, and one for flight safety, whose main objective is to highlight causes and to propose preventive measures. It is interesting that any confession made in front of the latter commission is out of any threat of administrative or judicial penalty. "Ignoring" authority (in fact, its self-stopping) has, in this case, a beneficial effect, a greater one than the direct engagement of authority.

4 ORGANIZATIONAL DYSFUNCTIONS IN FLIGHT SAFETY CULTURE

At the level of the aeronautical organization, there may appear hazardous attitudes and behaviors on the side of the flying personnel. Pilots have always been perceived as elite, capable and invincible, not being willing to admit failure. The entire aviation history is based on the pilot perceived as a hero, who often compensates for the lacks of technology. This attitude prevents information spread, the pilots not being willing to admit that they made a mistake, they not being willing to hear about errors but looking at those who made mistakes with discontent, as if they had been far from their standards.

Throughout their entire career, all experimented pilots fell under the temptation of one or more of the following hazardous behaviors:
1. Pressure from the peer group – making a wrong decision due to an emotional answer issued under the pressure of colleagues, without an objective evaluation of the situation;
2. Mental blocking – the incapacity of recognizing and reacting to situational changes, different from the anticipated or planned ones;
3. Focusing of landing – a mind blurring and focusing on landing, under hazardous circumstances, storms, strong winds, when the change of aerodrome would be recommended;
4. Low pass – determined by the desire of going beyond the minimum admitted limit of each mission;
5. Losing control over the situation – actions are detrmined by external factors, the pilot cannot control them anymore;
6. Flying with an insufficient amount of fuel – it can be a consequence of exaggerated self-confidence, of ignoring rules, of lacks/gaps in the flight plan;
7. Continuation of flight by means of VFR (Visual Flight Rules), under Instrumental Flight Rules (IMR) conditions;
8. Pushing the technical limits of the aircraft by over-estimating own capcity;
9. Neglecting flight plans, aircraft checkups before flight, checklists;
10. Dangerous attitudes: antiauthority, impulsivity, invulnerability, over–estimation, giving up.

The manifestation of dangerous attitudes is normal for each pilot throughout his own career, at certain intensity and at certain time intervals. If these attitudes appear regularly or at extreme intensities, they may generate real troubles. They need to be identified in order for corrective measures to be taken.

Within the flight safety culture there may also exist deficiencies caused by the material and motivation status of the personnel, by the level of their training and by the organization of aviation structures, but the most vulnerable component of the aeronautical system is the individual, generator of errors. Dysfunctions resulting in accidents may be classified as follows:
1. Material – with reference to the assurance of technical availabilities and to maintaining the life-cycle of aircraft and specific equipments. At this level, there are, most often, constraints of financial nature, fact that makes that any deficiencies to be presented as being of an 'objective' nature. Not in few cases, there might appear the case of a rather deficient detection of priorities and a deficient planning of expenditures.

2. Of training – assuring an optimal level of instruction and training for the personnel is one of the basic attributes of an aeronautical organization. Deficiencies may refer to the insufficiency of training, to its excess or to the inadequacy to specific situations. It is worth mentioning the risk which is involved in an inappropriate assessment system of the level of preparation of the personnel, its negative effects being tremendous.
3. Organization structure – the absence of some important compartments, or their incorrect subordination, may constitute the latent premise for the appearance of some flight events. The effects are visible through deficiency in coordination, supervision and assurance of information or appropriate feedback, for example, the absence of a body holding exclusive responsibilities on safety or its subordination to an inferior level represents a major risk of accidents.
4. Inefficient communication – it may lead to incongruous decisions at the level of various compartments or to a different reflection of the organization goals in the organization hierarchy.
5. Incompatible goals – the conflict between efficiency and safety is the most frequently met example. Their regulation within a coherent system represents one of the most important duties of an aeronautical organization management.
6. Deficient working conditions – both aspect pertaining to the physical background, but also to leadership, working atmosphere, attitudes, personnel's motivation etc.
7. Operating procedures – the efficiency and safety of aeronautical activities depend decisively on the quality of the procedures system. The insufficient coverage, the conflict between various types of procedures, the excessive rigidity, as well as the excessive flexibility of them, all can contribute to the appearance of risk situations.

The most vulnerable component of the aeronautical system is the individual, generator of errors. But he is also the only one who can compensate for the shortcomings of technology and the negative influence of the environment. From the perspective of the organizational culture, safety is threatened by the attitudes and behaviors manifested by employees, correlated with material lacks and policy issues of the organization. If, in case of pilots vulnerabilities related to safety are determined by dangerous attitudes and behaviors, in case of the technical crew there are risks determined by the pressure of unexpected malfunctions, situations when they have to react promptly, surely, without mistakes.

Under the continuous pressure of time to give back the aircraft to flight activities, there might appear unintended omissions, which lead to inevitable accidents. The flight activity would not be possible without the contribution of the air force staff, the personnel responsible for assurance and checking, the traffic controllers and others. Within a developed culture of safety, these people are being paid high gratitude for their contribution to the achievement of the aeronautical activities, each of them accomplishing their own responsibilities rigorously.

5 CONCLUSION

Flight safety has as its main objective the increase of operating efficiency of the Air Force. While carrying out aviation activities, each person occupies a principal role, at well calculated times, so as risks to be reduced to minimum, human losses not to take place and material damage to be minimized. Once with the development of aviation technologies, the increase in the number of actions in theaters of operations and the intensification of IFR/IMC flights the implementation of new safety systems has occurred, there has been a better management of risk factors, decision making process and stress situations, and thus, the "Flight Safety Culture" has been defined, which implies prevention of flight events.

The proactive attitude, of preventing air incidents, the methods of avoiding risk, of decision making and stress prevention, as well as the internalization of safety concepts should be achieved in the very first years of military education and professional training. Thus, factors of potential risk could be eliminated, together with the manners of undesirable behaviors and inadequate actions.

In the case of the scientific paper, the author´s original results are required to be presented in the conclusion of the article.

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MEDICAL SUPPORT OF MILITARY OPERATIONS LED BY ORGANIZATIONS OF INTERNATIONAL CRISIS MANAGEMENT

František GUBÁŠ

Abstract: Appropriate medical support is key factor that positively influences will of every soldier to conduct military operations and willingness to risk his or her own health and life. It is therefore task of all personnel responsible for planning of military operations to take all aspects of adequate medical support into account. The paper deals with medical support of military operations led by organizations of international crisis management. The author analyses approach of the United Nations, the North Atlantic Treaty organization and the European Union to medical support of their military operations.

Keywords: Medical support, medical support principles, medical planning, the United Nations, the North Atlantic Treaty Organization, the European Union.

1 INTRODUCTION

The ultimate role of military medical support - supporting the troops in performing their tasks by preserving and restoring their health and fighting strength – remains unchanged. [2] Effective medical support is fundamental to military operation success and the provision of appropriate and visible medical support demonstrates both military resolve and nation's commitments to its forces. All organizations of international crisis management have their own methodologies for planning and execution of medical support and therefore it is important for those who are responsible for medical planning to have overview all of these methodologies, because 22 European countries are members of the European Union, the North Atlantic Treaty Organization and the United Nations at the same time.

What is more, the current global environment, development in medicine and changes in the military pushes member nations of organizations of international crisis management and as well their contributing nations toward seeking a multinational approach to medical support of military operations.

Thus there may be substantial international cooperation to provide sufficient deployed medical support for a deployed military force, which may possibly influence the military forces of host nation.

2 MEDICAL SUPPORT PRINCIPLES

The mission of medical support in military operations is to support the mission through conservation of manpower, preservation of life and minimisation of residual physical and mental diseases. [3] Health is a key force multiplier of fighting power. Only a healthy force can function at maximum effort and sustain it. Health in principle is not merely the absence of injury or disease. In its widest sense it includes physical and mental well-being. Thus, in an operational context, health is the ability to carry out duties unimpeded by physical or psychological problems. Appropriate medial support makes a major contribution to both force protection and morale by the prevention of disease, rapid evacuation and treatment of the sick, wounded and injured and the return to duty as many individuals as possible. [6]

Miscellaneous documents of different organizations of international crisis management define medical support principles differently, but there are some points that have common ideas and therefore basic medical support principles can be defined as follows:

1. Compliance with the Law of Armed Conflict and Humanitarian conventions;
2. Quality and standards of medical care;
3. Time-related constraints of medical care;
4. Continuity of care;
5. Medical triage and;
6. Levels of medical capabilities;
7. Multinationality.

2.1 Compliance with Law of Armed Conflict and Humanitarian Convention

Each organization of international crisis management strictly defines that medical support of its operations will comply with The Hague and Geneva Convention and its protocols, as well as the laws of war. [1, 2, 4, 6]

Without any adverse distinction founded on the ground of racial or ethnic origin, sexual orientation, religion or belief, age and disabilities, or on any other similar criteria, all entitled sick, injured, wounded and shipwrecked, to whichever party they belong, shall be treated on the basis of their clinical needs within the medical resources available and within the missions constraints. In all circumstances they shall be treated humanely, taking into consideration religious and socio-cultural factors. [4]

2.2 Quality and Standards of medical care

Military medicine is highly specialized due to the environment and extreme conditions in which it is frequently practised in and the procedures will not always be the same as practise in the peacetime

although the outcome has to be the same. The quality and standards of care available can have a permanent effect upon outcome and the effects of poor quality can rarely be reversed later. [3]

Medical support to forces taking part in military operations must meet standards acceptable to all participating nations, whilst providing adequate information to the potential troop contributing nations (TCNs), prior to their decision to support [4] military operations led by individual organization of international crisis management.

Even in crisis or conflict, the aim of medical support is to provide a standard of medical care to achieve outcomes of treatment equating to best medical practise, [3] but definitely not less than outcomes of treatment equal to results of medical treatment in the sending state.

2.3 Time-Related Constraints of Medical Support

Time is fundamental factor in the effectiveness of medical care [2] and therefore patient's survival and recovery. Hence, time is the major factor driver dictating the type and location of medical assets in military operations. [3] The principal medical planning timelines for military deployments, which can be seen as minimal standard, are:

- **enhanced fist aid -** immediate life saving measures: bleeding and airway control for the most severely injured casualties to be achieved within 10 minutes of wounding [2] applied by personnel having received a tactical combat casualty care course or comparable civilian training,
- **damage control resuscitation** – measures commenced by medical personnel within 1 hour of wounding,
- **damage control surgery** – are emergency surgical procedures and treatment by a surgical team to stabilise casualties, in order to save life, limb or function [3] and should be provided within 1 hour but no later than 2 hours of wounding. [4]

Responsiveness, which is providing timely and effective medical care, is a cornerstone.

2.4 Continuity of Care

Continuity of care means uninterrupted and appropriate medial attention and response to the needs of casualties throughout the chain of their medical treatment and evacuation. [2]

Patients passing through the medical system must be given care, which is continuous, relevant and progressive. [4] Casualties must be managed continually until they reach definitive care. In transit care must be available during medical evacuation and the clinical condition of the individual is the key factor governing the timing, means and destination of the patient's evacuation. [3] Medical care is normally provided in a progressive manner through the four levels of medical care, from point of injury or sickness through evacuation to specialised care and eventually to define treatment and rehabilitation, although specific injuries or diseases might require bypassing levels of medical care as they require specialist care at an early stage.

During all stages of evacuation the provision of qualified medical personnel must be guaranteed. [4]

2.5 Medical Triage

Medical triage is the categorization of patient or casualty based on clinical evaluation, for the purpose of establishing priorities for treatment and evacuation. This facilitates the effective use of limited medical resources and ensures the survival of the greatest possible number [1] of casualties.

Triage is essential when several events leading to casualties occur simultaneously and the number of casualties exceeds the capacity of the medical treatment facilities. The goal is to optimize care for the maximum number of salvageable patients. Patients who will do well with a minimum level of care are thus distinguished from those who will die despite maximal care. Attention is addressed to those who will benefit most from optimal care and rapid surgical intervention. [4]

2.6 Levels of Medical Capabilities

In general, are medical resources and assets distributed into four tiers [3], echelons [4] or levels of medical support [1] on a progressive basis to conduct treatment, evacuation, re-supply and other essentials functions to the maintenance of the health of deployed personnel to military operation. All medical facilities are categorized into four Roles, defined according to the minimum clinical capability available in a facility.

"Medical Support Manual for United Nations Peacekeeping Operations" defines one more level of medical support called "**Basic Level**" which provides first aid and preventive medicine practised at the smallest sub-unit level.

All others levels of medical support are defined almost identically by all organizations of international crisis management.

The **Role 1** medical treatment facility (MTF) is the first level where a doctor is available [1] and provides primary health care, specialized first aid, triage, resuscitation and stabilization [4], within the time related constraints of medical care and the provision of medical evacuation assets [3]. Role 1 medical support is integral or allocated to unit [4] and is ultimately a national responsibility and must be readily and easily available to all force personnel. The size of Role 1 facilities need to be mission-

tailored. Role 1 comprises as well the provision of basic occupational and preventive medical advice to the chain of command, routine sick call and the management of minor sick and injured personnel for immediate return to duty, as well as casualty collection from point of wounding or casualty collection point and preparation of casualties for evacuation to higher level [3] of medical support.

The **Role 2** MTF can be further sub classified into "Role 2 Basic" in NATO labelled as "Role 2 Light Manoeuvre" (Role 2LM) and "Role 2 Enhanced" (Role 2E). UN recognizes only MTF Role 2.

Role 2 Basic MTFs are light, highly mobile MTFs to support designed to support component formations (normally brigade or equivalent level). Normally these are only used for initial crisis or warfighting deployments. These MTFs act as a focal point for Role 1 in the formation, but may be bypassed if situation and resources allow. They will usually evacuate its post surgical cases to Role 3 or Role 2E for stabilization and possible primary surgery. [3] In addition to Role 1, Role 2 Basic MTF includes resuscitation led by a specialist medical officer with all elements to support it; routine damage control surgery (DCS) with post-operative care; field laboratory capability; basic imaging capability (e. g. X-ray or ultrasound); reception, regulation and evacuation of patients and limited holding capability.

Role 2E MTFs are effectively small field hospitals. They provide basic secondary healthcare built around surgery, ICU and nursed beds. In comparison with Role 2 Basic MTF, Role 2E MTF are able to stabilise post-surgical cases for evacuation to Role 4 without needing to put them through a Role 3 MTF first. [4]

Role 2 MTF may also include preventive medicine and environmental health capabilities, primary dental care, stress management, psychiatry or psychology, telemedicine and the capability to coordinate patient evacuation [3] through the PECC positioned at staff level. [4]

Tab. 1 Comparison between Role 2LM a Role 2E

	Examples of Operation Environment	Tactical mobility	Evacuation of patients
Role 2 Basic (2LM)	Potential high intensity combat.	Highly mobile, quick to establish and redeploy.	Post-surgical cases evacuated to Role 3 or Role 2E.
Role 2E	Potential low intensity combat.	Medium to low mobility.	May be the last MTF before strategic evacuation.

Source: author.

Role 3 MTFs provide highest level of medical care by deployed units [1] and are designed to provide theatre secondary health care within the restrictions of the Theatre Holding Policy. Medical support Role 3 is deployed with hospitalisation and the elements required to support it. Depending on mission characteristics it includes a mission-tailored variety of clinical specialities. They can include specialist surgery (neuro-surgery, maxillo-facial, burns, etc.), advanced and specialist diagnostic capabilities to support clinical specialists (CT-scan, arthroscopy, sophisticated lab tests, etc.) and major medical, nursing specialities (internal medicine, neurology, intensive care, ophthalmology). [3]

Its minimum capability includes sufficient holding capability to allow for diagnosis, treatment and holding of those patients, who are expected to return to duty after receiving adequate treatment, resupplying of Role 2 MTFs and control of and or ready access to patient evacuation assets. [4]

It is important to note, that Role 3 is rarely deployed within peace support efforts and is generally obtained from existing civilian or military hospitals as a part of host nation support.

Role 4 MTF provides definite medical care and specialist medical treatment unavailable or impractical to provide within area of operation. [1] Role 4 would normally include definitive care specialist surgical and medical procedures, reconstructive surgery and rehabilitation. [3] Role 4 medical care is usually highly specialized, time consuming and normally provided in the casualty's country of origin (home nation), but it also may be provided through bi- or multi- national arrangements in another country. [4]

2.7 Multinationality

Multinationality is a factor that will play the most important role in medical support of military operations in the future, because of budget cuts of military expenses, including expenses on medical support of military operations. Multinational medical solutions have considerable potential to reduce burden of medical capability provision upon individual nations. However, the existence of national differences such as varying clinical protocols, different languages and legal restrictions, mean that achieving multinational cooperation in practise can be complex and challenging. [6]

3 MEDICAL PLANNING CONSIDERATIONS

Requirements for medical support of every military operation differ and are influenced by a number of aspects. Developing of the Medical Support Plan require understanding of the objectives and decisive points of military operation, an assessment of the existing medical infrastructure and prevailing health treats in the area of military operation. Medical support must take into account complicated factors, e. g. number of participating nations in military operation, variations in national standards of medical care, geography and climatic variations, hostile, criminal or terrorist interference, availability of medical resources and many others.

The medical resources available at the outset of any military operation must be sufficient to collect, evacuate, treat and hospitalise all casualties whilst taking into account possible mass casualty situations. [4]

Factors, that influence planning of medical support most include:

1. Population at risk;
2. Type of military operation;
3. Local medical treatment infrastructure;
4. Time and space factors;
5. Casualty estimate.

3.1 Population at Risk

Capacity of medical support is beside the strength of deployed force into military operation [1] directly influenced by the population at risk defined by operational concept of military operation. Population at risk should be derived from expected casualty load and the health and medical risk at the area of operation. [2]

The numbers and the dispersion of forces deployed to military operation are main determinants in the overall size and shape of the required medical support. [4]

Medical rules of eligibility to medical support system for allied forces, host nations forces, civilian population should be considered before deployment.

3.2 Type of Military Operation

Medical support is determined by the type of military operation and as well mandate of military operation. It is anticipated that "observer military operations" require relatively less medical support than higher risk military operations like "Peace Enforcement". [1]

3.3 Local Medical Treatment Infrastructure

Extent of medical support is strongly influenced by medical treatment infrastructure. Question is, whether local hospitals and clinics within area of operation are able to meet standards acceptable by participating nations. In case these are not readily accessible, there is requirement to deploy a higher level of medical support [1] within area of operation, regardless on force of deployed troops.

3.4 Time and Space Factors

One of the most critical factors for medical planning is time. The clinical timelines, described in chapter 2.3, put a high emphasis on providing the different levels of medical care to the wounded and injured as soon as possible. [6]

However, the clinical timelines are not the only determining factor for medical planning in general and the appropriate medical support of military operation is influenced by other factors, such as terrain, accessibility by land and air, physical distance, climate and other geographical factors have a major influence on the medical assets required and their deployment within area of operation. [1]

3.5 Casualty Estimate

Casualty estimates are one of the core tools of medical planning considerations. In any scenario the analysis of likely casualty rates and numbers has a great political and operational significance and is fundamental in establishing the medical support requirements. [3]

Estimation of casualties is an essential but challenging element of medical planning. As with all estimates, they are based upon assumptions and the results they produce need to be treated accordingly. [6]

The calculation of possible or likely casualties provides an estimate of the numbers of disease and non-battle injuries (DNBI) and the number of battle casualties (BC) to be expected. Casualty estimates are expressed in number per day.

3.5.1 Battle Casualties

Battle casualties are those caused as a result of combat. Battle Casualties comprise four elements:

1. Killed in action (KIA);
2. Captured and missing in action (CMIA);
3. Wounded in action (WIA);
4. Battle stress (BS) casualties.

Different types of military operations produce different casualty profiles. Trench warfare of WWI produced a high proportion of head injuries whilst armoured warfare tends to produce higher proportions of burn injuries. Estimation of an operationally specific casualty profile requires military judgement, operational analysis and examination of historical medical databases. [3]

Determination of this estimate is responsibility of the operational staff in consultation with the medical staff. Even in military operations, which do not include combat, casualties could, however, result from the operational environment (e. g. from residual miners, snipers, etc.). These casualties would also be counted as "battle casualties". [4]

3.5.2 Disease and Non-Battle Injuries

Both incidence and the impact of DNBI are of operational importance. [3] DNBI is an indicator of the daily workload for deployed medical units. [1]

A detailed analysis of DNBI data from historical and current sources will enable medical and operational staff, to produce a provisional DNBI rate for the military operation. DNBI rates provide a technical estimation of the probable rate of diseases and injuries not resulting from combat. DNBI is mission dependent, dynamic, related to the level and nature of activity, acclimatization, training and living conditions of the deployed personnel. [4]

For example average expected DNBI rate for UN peacekeeping operations is 1,34 % of all deployed personnel per day, with 10 % requiring hospitalization.

4 CONCLUSION

Medical support is one of the key factors that influence success of military operations. It is therefore of great importance to pay all possible attention to planning of medical support. At a time, when multinational approach becomes one of the key aspects of medical support to military operations of organizations of international crisis management thorough planning of medical support is even more important.

In the article are analysed principles of medical support and medical planning considerations. Author defines medical support principles that are the same for or in like manners for all major organizations of international crisis management. Furthermore, the most important medical planning considerations for planning of medical support are described.

The article is likely to be beneficial for military personnel that will plan medical support of military operations of different organizations of international crisis management.

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CIVILIAN POPULATION PROTECTION IN ARMED CONFLICTS

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Abstract: During the last decade's conflicts, it came into picture the necessity of protecting a majority that does not, directly, take part into conflict, the civilian population. One of the most important chapters of international humanitarian law is formed by the entire body of regulations regarding the protection of the civilian population, civilian persons, goods and places that do not form a military objective.

Keywords: Law, protection, civilian, population, conflict, humanitarian.

1 INTRODUCTION

One of the most important chapters of international humanitarian law and, also, of recent reification in the big picture of international settlements is formed by the entire body of regulations regarding the protection of the civilian population, civilian persons, goods and places that do not form a military objective.

2 SHORT HISTORY

The progression of the armed conflicts, the appreciation of their spatial largeness, the percent of coverage of civilian population, especially, under the direct influence of the destructive peremptory ideas and the armament and ordnance development, endowing all armed power, imperatively required the foundation of the first references regarding the humanitarian protection of the civilian population.

On 12th of March, 1940 - after the beginning of the Second World War - International Committee of the Red Cross (ICRC) addressed a Solemn Appeal to all nations asking them to confirm the general protection of the civilian population and to define the military objectives, to give up the indiscriminate bombardments and to withhold from retaliatory measures (reprisals). Formally approved by 14 states (among them the main belligerents), the Appeal was, practically, never followed. Faced with this situation, the ICRC renewed its appeal several times – on 12th of May 1940, on 20th of July and 30th of December 1943 – but, also, ineffectually.

The shattering facts of the Second World War, resulting in the tenth of millions of victims among the civilian population and the destruction of goods of immeasurable value, brought into the spotlight, as a stringent and actual matter, the protection of the civilian population against the, more and more destructively, effects of war.

As stated within the ICRC Appeal, from the 5th of September 1945, "… from totalitarian war have sprung new techniques. Must it then follow that the individual person will no longer enjoy the protection of the law and that he will thus be considered as a mere pawn in the mass struggle? That would mean the collapse of the principles that are the foundation of international law, which affords physical and moral protection to the human person."[1]

In 1946, the International Military Tribunal at Nuremberg incriminated a number of inhuman acts targeting the civilian population, such as assassination, mass extinction, slavery, deportations, oppressions for political, racial and religious reasons etc. and, as a result, on 9th of December 1948 the "Convention on the Prevention and Punishment of the Crime of Genocide" was enacted by the United Nations General Assembly. Whether committed in time of peace or in time of war, intending to, partially or totally, destroy a national, ethnic or religious group, the Convention was extending the incrimination for the following facts: "killing members of the group; causing serious bodily or mental harm to members of the group; deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part; imposing measures intended to prevent births within the group; forcibly transferring children of the group to another group".[2]

Also, still earth-shaken by the horrors of the Second World War, the state's community, on 12th of August 1949, during the Diplomatic Conference of Geneva for the Establishment of International Conventions for the Protection of War Victims, enacts a number of four conventions, wherefrom the fourth one exclusively refers to the protection of civilian persons in time of war, the other three being related to the amelioration of the condition of the wounded and sick in armed forces in the field (Convention I), the amelioration of the condition of wounded, sick and shipwrecked members of armed forces at sea (Convention II) and the treatment of prisoners of war (Convention III).

On the strength of these early successes, in 1968, during the First World Conference on Human Rights in Teheran, the ICRC brought into picture a new proposal related to human rights in armed conflicts, which was adopted on 12th of May, by Resolution XXIII. On the same year, the 19th of December, the United Nations General Assembly adopted the Resolution 2444/XXIII, "Respect for Human Rights in Armed Conflicts", inserting in its body the following principles:

1. That it is prohibited to launch attacks against the civilian populations as such;
2. That distinction must be made at all times between persons taking part in the hostilities and members of the civilian population to the effect that the latter be spared as much as possible."

Distinction between persons that do not participate directly and persons taking part in the hostilities is a fundamental principle of the international humanitarian law. Yet, the civil population was not unexposed to the dangers resulting from military operations, also, because the international humanitarian law was not answering the following questions: what the concept of civilian population refers to? What are military objectives? The difficulty was increased by the fact that, during the last decades' armed conflict, the distinction between the combatants and the civilian population was more easily said than done. Because of this fact of life, the debates of the Diplomatic Conference of Geneva followed the concept of expressing a negative definition: thus, it was suggested to put aside from the "civilian population" concept, the persons directly taking part in the hostilities. Following an injunctive approach, as a distinctive act from "the war effort", the expression "directly taking part in the hostilities", expects to carry out an act of war that practically targets the military potential of the enemy. Experts judged that persons that do not directly take part in the hostilities, even if, indirectly, they support the war effort, could not be targeted, for that will open the door for all kind of abuses.

Following these conclusions, the ICRC delivered to the 3rd Committee, during the second session of the Conference of the Governmental Experts, a drought with definitions for civilian population and civilian persons stated as follows:

1. A civilian is any person who does not belong to the armed forces and, besides that, does not directly take part in the hostilities;
2. The civilian population comprises all persons who are civilians;
3. The presence within the civilian population of individuals who do not come within the definition of civilians does not deprive the population of its civilian character;
4. In case of doubt whether a person is a civilian, that person shall be considered to be a civilian.

The Diplomatic Conference of Geneva for the Establishment of International Conventions for the Protection of War Victims earned the virtue of establishing an explicit customary rule that innocent civilians must be kept outside hostilities as far as possible and enjoy general protection against danger arising from hostilities. This general rule is accompanied by rules of application. Therefore, article 51 is one of the most important articles in the Protocol Additional to the Geneva Conventions of 12th of August 1949 and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8th of June 1977. This article, entitled "Protection of the civilian population", specifies the fundamental protection rules for the civilian population and the civilian persons, being set as follows:

1. The civilian population and individual civilians shall enjoy general protection against dangers arising from military operations. To give effect to this protection, the following rules, which are additional to other applicable rules of international law, shall be observed in all circumstances.
2. The civilian population as such, as well as individual civilians, shall not be the object of attack. Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited.
3. Civilians shall enjoy the protection afforded by this Section, unless and for such time as they take a direct part in hostilities.
4. Indiscriminate attacks are prohibited. Indiscriminate attacks are:
   (a) those which are not directed at a specific military objective;
   (b) those which employ a method or means of combat which cannot be directed at a specific military objective; or
   (c) those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol; and consequently, in each such case, are of a nature to strike military objectives and civilians or civilian objects without distinction.
5. Among others, the following types of attacks are to be considered as indiscriminate:
   (a) an attack by bombardment by any methods or means which treats as a single military objective a number of clearly separated and distinct military objectives located in a city, town, village or other area containing a similar concentration of civilians or civilian objects; and
   (b) an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.
6. Attacks against the civilian population or civilians by way of reprisals are prohibited.
7. The presence or movements of the civilian population or individual civilians shall not be used to render certain points or areas immune

from military operations, in particular in attempts to shield military objectives from attacks or to shield, favor or impede military operations. The Parties to the conflict shall not direct the movement of the civilian population or individual civilians in order to attempt to shield military objectives from attacks or to shield military operations.

8. Any violation of these prohibitions shall not release the Parties to the conflict from their legal obligations with respect to the civilian population and civilians, including the obligation to take the precautionary measures provided for in Article 57"[3]. These measures refer to precautions in attack and they will be later approached.

3 CASE STUDIES

Having in mind the necessity of knowing and adhering to international humanitarian law directions, I will briefly refer to the indiscriminate use of missiles by the Iraqi Armed Forces during the Gulf War. It is impossible to claim that the preponderance of the Iraqi missiles attacks were in accordance with the laws of war. Although, an unexpected number of attacks on Saudi Arabia and, even, on Israel, look like targeting military objectives, the entire Iraqi missiles attacks campaign holds heavy breaches of international humanitarian law. As long as Iraqi missiles targeted civilian objectives, this is, definitely, a serious customary law infringement, because "the civilian population as such, as well as individual civilians, shall not be the object of attack". [4]

I will focus the screening here on missiles attacks that looked like targeting military objectives. Screening these attacks, I have to remind you the principle embodied in Protocol I, that indiscriminate attacks are prohibited, adding in, among others, "method or means of combat which cannot be directed at a specific military objective", therefore "are of a nature to strike military objectives and civilians or civilian objects without distinction". The rule was designed, among others, to prohibit big dimension missiles equipped with a primitive control system, which cannot target a specific military objective, with a minimum estimated carry, such as the V2 rockets used in the end of the Second World War. If a special designed missile is randomly used, claiming that its objective is a military target, this depends, in part, on the accuracy of the used weapon, its dimensions and the location of the military objectives, as well as on the proximity between these objectives and the civil population and goods. These method or means of combat indiscriminately used in a dense populated city could be legal if they're used in inhabited areas, such as the forest or the desert.

The modified "Scud" Iraqi missiles, used against Israel or Saudi Arabia, had a CEP (Circular Error Probable) of about 1000 meters. We can admit such an error if the targeted military objective is horizontally wide-spread or is located in a deserted area, with no civil population. However, this method it's totally prohibited if the missiles are fired targeting military objectives in populated areas. Having in mind the aforementioned rules, the Iraqi missiles attacks targeting the huge air base in Dhahran (Saudi Arabia) or the atomic power plant in Dimona, northern Negev desert (Israel) were respecting the standards of international humanitarian law. On the other side, the missiles attacks targeting small military objectives in Riyadh or Tel Aviv were, needless to say, indiscriminate, taking into account the Iraqi missiles lack of accuracy.

Prohibiting the reprisals against civilian population and civilian persons, the 6th clause from article 51 (Protocol I) was, also, inspired by the tragic events of the Second World War, when under the cover of enemy attacking its own civilian population, the belligerents used the reprisals, with no restrictions. As a matter of fact, are well known the words of former British Prime Minister, Winston Churchill, who affirmed that the most important strategic objective is the morale of the civilian population.

During the Gulf War, Iraq, also, suggested, in many public statements that missiles attacks against Israel and Saudi Arabia were explained as reprisals. For an example, was stated that the missiles launched on 22nd of January 1991 were "as a revenge for the crimes of Zionism". The Iraqi Armed Forces General Headquarter stated, describing two rocket attacks, targeting Tel Aviv on 25th of January 1991 that their aim was "to pour out fire on top of arrogant Zionists heads, to revenge what their hands have committed". Attacks over Riyadh were, often, accompanied by the same speech: the purpose for the 11th of January 1991 attack was "to punish the traitor agents, the infidel apostles, the leaders of the Saudi Arabia … and to persecute the traitor agents"; the 8th of February 1991 attack occurred "for that the leaders of the Saud family to find out that the attacks of their masters (Americans – n.a.) on our civilian objectives will not remain unpunished".

In the next paragraphs, following the military action and way of thinking precept we apprehend the following precaution measures.

"Those who plan or decide upon an attack shall:

a) Do everything feasible to verify that the objectives to be attacked are neither civilians nor civilian objects and are not subject to special protection but are military objectives;
b) Take all feasible precautions in the choice of means and methods of attack with a view to

avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects;
c) Refrain from deciding to launch any attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated;
d) An attack shall be cancelled or suspended if it becomes apparent that the objective is not a military one or is subject to special protection or that the attack may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated;
e) Effective advance warning shall be given of attacks which may affect the civilian population, unless circumstances do not permit."[5]

The part in the conflict that is under attack shall:
a) "Remove the civilian population, individual civilians and civilian objects under their control from the vicinity of military objectives;
b) Avoid locating military objectives within or near densely populated areas;
c) Take the other necessary precautions to protect the civilian population, individual civilians and civilian objects under their control against the dangers resulting from military operations."[6]

4 CONCLUSION

These fundamental rules for the protection of civilian population and civilian persons embody the headstone, the starting point for every military commander in training his subordinate's way of acting in an armed conflict, related to this unprotected population that does not fight back under any circumstances.

By the 1977 regulations, the civilian population gains, for the first time, a well-defined protection, that harbors it from contingent risks in case of an armed conflict.

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[2] Convention on the Prevention and Punishment of the Crime of Genocide, adopted by Resolution 260 (III) A of the United Nations General Assembly on 9 December 1948, article 2.

[3] Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, art. 51.

[4] Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, art. 51, point 2.

[5] Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, art. 57.

[6] Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, art. 58.

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PATRIOTIC EDUCATION OF PERSONNEL OF THE ARMED FORCES OF UKRAINE

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Abstract: The article gives the substantiation of the deal and values of patriotic education of personnel of the Armed Forces of Ukraine. These conceptual categories allow to adequately defining the purpose, the task and content of this direction of the education of servicemen. As a basis of the ideal and values of patriotic education of the Armed Forces put the mentality of the Ukrainian people, its best traditions and customs, as well as the martial traditions of the Ukrainian army. Their knowledge allows teachers to competently build military educational process.

Keywords: Ideal, values, patriotic education, Fatherland, the Armed Forces of Ukraine.

1 INTRODUCTION

The problem of patriotic education is very important on the current stage of our society, state and the Armed Forces development. Its actuality is stipulated by the spread of egoism, individualism, cynicism, aggression, indifference to social problems, disrespectful attitude towards the state and social institutions in the minds of the population, including military personnel. The reasons for these disturbing phenomena are directly related to the spiritual crisis in our society, some philosophical "vacuum", inefficient domestic, civil and patriotic education of citizens of Ukraine. They are mostly caused by the poor definition of such basic concepts of liberal education as "ideal of education", "national values" and so on. However, the relevance of patriotism especially increase due to illegal annexation of Crimea by Russia and the military conflict in the Eastern Ukraine, a real threat to the sovereignty, territorial integrity and independence of the Ukrainian state.

Improving the patriotic education of personnel is extremely important task for today's Armed Forces of Ukraine. Their tactical efficiency directly depends on the level of the patriotic education of soldiers, formedness of socially active and patriotic individuality of military men. This puts high demands on the spiritual development of military personnel, their consciousness, self-awareness, motivation and life guidance. Solving these problems is impossible without improving the patriotic education of soldiers of the Armed Forces, including the elucidation of its ideals and values.

As the analysis of the current state of patriotic education in Ukraine testifies, the unitary system in the formation of public patriotism is not formed. Fair to recognize that in concepts, programmes, orders and directives created during the years of independence by the state institutions and scientific and pedagogic community, problems of patriotic education were widely displayed. However, the governing documents contain only the most general conceptual basis of patriotic education, they don't eliminate uncertainty in concepts of ideals and values of patriotic education, don't solve regional disagreements on approaches and contents of patriotic education. Thus, there is a scientific problem to justify the ideals and values of patriotic education of the personnel of the Armed Forces of Ukraine.

The problems of national, civic and patriotic education of Ukraine are the subject of research of local and foreign scientists (V. Abramov, A. Afanasiev, Y. Beh, A. Boyko, M. Boryshevskyi, A. Vishnevskyi, O. Kirichuk, Y. Rymarenko, O. Sukhomlinska, G. Filipchuk etc.), who, among other things, discuss the ideals and values of patriotic education. Moreover, these problems were studied in thesis works of S. Vinogradov, O. Hewko, O. Datsenko, V. Dziuba, Y. Krasylnyk, R. Petronhovskyi, D. Sidoruk, V. Shevchenko etc. To understand the nature and content of the ideal and values of patriotic education of Ukrainian citizens labors of A. Kirichenko, H. Filipchuk, V. Yagupov and other scientists are useful.

Note the small amount of research dedicated to the problems of military training, including military and patriotic education of personnel. Ideal of patriotic education and values of patriotic education as concepts are present only in few works and are not studied enough.

Due to the lack of elaborated conceptual foundations of patriotic education and the lack of clearly defined categories of "ideal of patriotic education" and "values of patriotic education" the task of this article is to study these concepts in relation to personnel of the Armed Forces of Ukraine.

Considering the specificity of national education, it should be emphasized that there is no education "in general" in any country. It is always national by its nature and content, basing on ideals and value orientation of a particular ethnic group, on its historical, cultural and other traditions and pecularities.

Patriotic education is considered as an active process of systematic, integrated and comprehensive impact of educators, government and community organizations on mind, the subconscious mind and behavior of military personnel and the psychology of military

collectives during their lives in order to form the soldiers of high moral and political, civil, military and professional, social and psychological, mental and physical qualities, which are necessary in any case for successful performance of Constitutional duty to protect the people of Ukraine.

Moral ideals and value guidances, which dominate the Ukrainian society and its Armed Forces are taken as basis in education of military men. Morality as one of the most important forms of social consciousness permeates the whole life process of society, acting as a regulator of human behavior in all spheres of life activity; and value orientations are among the most important entities in the mind and selfconsciousness of a man and they cause a number of his essential characteristics as of a person. According to P. Sytnyk "... moral underdevelopment hinders the progress of civilization, and its degradation leads inevitably to disorder and destruction of society" [9].

2 IDEAL OF PATRIOTIC EDUCATION

Ideal in Ukrainian pedagogical dictionary is interpreted as a representation of the highest excellence, which, as the template, the norm and ultimate goal, specifies the method and the nature of human action [4]. The ideals of patriotic education of military personnel is closely related to the ideology and policy of the state, national ideals, civil and patriotic education of the people of Ukraine and members of the Armed Forces (common ingredient of the ideal, which applies to all citizens), and the purpose of military training and social demands of the state to behavior of the military men (a specific component of the ideal, which is relevant only to the soldiers).

Among domestic scholars today there is no consensus concerning educational ideal of Ukrainian citizens and patriotic educational ideal of the military men, in particular, in the existing views, we believe, there is almost no patriotic component. For example, in Fundamentals of national education the generalized ideal of a Ukrainian is considered to be "a gentle and sincere man, truth-seeking and friendly, witty and humorous, talented and industrious, enduring etc." [7]. I. Podlasyi under educational ideal understands the set of concepts such as: human, love, compassion, justice, knowledge of God and of oneself, freedom, health & family [8].

Obviously, components of the ideal proposed in these statements, as well as character traits and personal qualities of a Ukrainian citizen, are important and relevant, but they are not enough to consider person a patriot who cares for hic country and seeks to strengthen it practically. Thus, they are causeless missing such a key feature of the citizen as patriotism. Therefore, determining the content of the educational ideal for soldier and his patriotic education in particular, the concepts proposed by I. Podlasyi, in our opinion, should be complemented by the following: Fatherland, Homeland, state, Armed Forces of Ukraine, civil and military duty.

A specific component of the ideal and the goal of patriotic education of personnel, as well as of military training in general, are social claims of the state for behavior of military personnel, which are determined in the Military oath, the statutes of the Armed Forces of Ukraine and some other normative documents. In its essence and meaning these claims are deeply patriotic. Similar requirements are contained in other provisions of the statutes of the Armed Forces of Ukraine: soldier's general duty, duty of functionary and others.

Thus, the ideally trained patriotic soldier of the Armed Forces of Ukraine is a military man of the scientific worldview, with formed patriotic consciousness and self-consciousness and sustained, positive and socially significant ideas, feelings, attitudes and norms of behavior, who is deeply aware of the social requirements of the state contained in the Constitution of Ukraine Forces, the Military oath and the statutes of the Armed of Ukraine, who is convinced of the need of its strict compliance and fully ready for it, faithfully performs military duty, seeks to strengthen the Armed Forces, Ukrainian state and society by the practical affairs, and ready to protect them.

3 VALUES OF PATRIOTIC EDUCATION

In the life of the Ukrainian people since ancient times morality, spirituality and patriotism gained a role of high priority. According to experts " ... the national system of education implements moral values (humanity, kindness, compassion, empathy) as the highest spiritual heritage of native and other nations. Conventional educational wisdom says that in all cases and actions the moral issue, criterion is the most important" [8].

Some approaches of public, political and other leaders, as well as of some representatives of science, can be considered unreasonable in order to get into disuse the concept of "national values" or just substitute it with the term "universal values". Relying only on general human values it's impossible to form a patriotic awareness of citizen of a particular country, the representative of a particular ethnic group, since it is based precisely on the national values and the corresponding value orientation. Moreover, it is clear that the national values of the Ukrainian people fully comprise and integrate in all traditional human values and give them the national color and do not conflict with any of them. In terms of this the next opinion can be

considered: "... national and universal are not alternative, but interpenetrating aspects of education as a social phenomenon. Universal is not overnational and non-national. Universal content always has a specific national implementation, reflected in the education of different people". [8] Conserning the foregoing, the term "national and universal values" we consider the most appropriate.

The importance of value orientations in education of Ukrainian soldiers and all the citizens of our state is well illustrated by the statement of A. Vishnevskyi that between "the system of values and strategy of education there is a mutual dependence," but "... in this symbiosis the value system is already predominant, because it comes from the lives of the people, its historical experience, faith, needs and aspirations of self-actualization, etc.". [3]

Development of patriotic aimed, humane and responsible individual is directly connected with the system of spiritual values, which, as I. Beh emphasizes stand against utilitarian and pragmatic values. Because " ... spirituality somehow involves going beyond self-interest, personal gain and the goals and intentions of the spiritual maturity of the individual are perpetuated in the system of supra-individual values, so that they act as a supreme criterion of orientation in the world and as a support for personal expression". [1] The scientist says that such person is actively using them to solve not mundain, but primarily life-purpose problems.

In our opinion, the specificity of military occupational activity leads to the existence in the minds of soldiers of the Armed Forces of Ukraine of two closely related subsystems of ideals and values. These are, firstly, those that have a national and universal character. Secondly, those caused by the social status of military service as a particular type of public service, national, historical and military traditions of the Ukrainian people and its Armed Forces, military rituals and symbols, specific features of military occupation.

The first subsystem is general for all the citizens of Ukraine and basic for patriotic education of the Armed Forces. It includes the best national and universal values, as mentioned above. Besides, there is no alternative for the priority of national values in military patriotic education, since the latter includes "... all components of Ukrainian culture" and is "... the core of education and training". [7] Interesting in this regard is the statement of B. Kobzar, who fairly pointed out that "... when the spiritual values of our people are forgotten and artificially constricted, national education system falls apart. Then spiritual orphans appear in the society". [5]

Note that nowadays there is no single interpretation of the nature and content of the spiritual values of the Ukrainian people among local scientists. Legitimately criticizing pragmatic strategy of education, especially popular in the United States and partly in some European countries, O. Vishnievskyi makes a fair conclusion about the unacceptability of such "templates" and "standards" for the national system of education. A person is considered in this case as an "apex of creation" of blind and uncontrolled evolution, and anthropocentrism generates an image of superman, who is able and allowed to do anything [3].

Similar criticisms of inadmissibility to hyperbolize an individual freedom and private citizens' interests yet have expressed I. Fichte in the early nineteenth century. He characterized the society of the liberal way of life as "the era of empty freedom", devoid of deep spiritual principles. In 1929 it was J. Ortega y Gasset, who stated that individualism, excessive freedom demoralize society and devastate people destroying their personal principles. Thus, the system of patriotic education of personnel, both national and civic education of our fellow citizens, must be built on the basis of historical, cultural and ethnic values of the Ukrainian people.

According to some researchers, the fundamental value of Ukrainian citizen should be the national idea, which is underlying for the patriotic education. In its essence it is a perennial dream of citizens of Ukraine to have their own independent, unified state and a happy, prosperous and democratic society and to preserve themselves as a nation with its own distinctive culture, education, upbringing system, spirituality. Its structure must necessarily contain both emotional and sensual, aesthetic, but also the motivation and activity components that ensure appropriate inclusion of citizens, as well as the personnel of the Armed Forces, in patriotic activities [9].

The national idea is the basis of military and patriotic values, such as national pride, love for Ukraine and its Armed Forces, the desire for conscious patriotic activities for them. The important role of patriotic component in values for Ukrainian citizens, including military personnel of the Armed Forces, is aptly illustrated by N. Kosarev, who emphasizes that "... the wealthy, spiritually and materially rich and prosperous Ukrainian state can be only built by her ardent patriots, united by the national idea – the idea of independence and statehood" [6].

With extremely importance for the education of the citizens of Ukraine and the sustainable development of society as a whole, the national idea is not some "subsidiary", "desirable" attribute of their outlook, but is the most important factor, which depends on their level of consciousness, self-awareness and positively aimed social activity.In turn, the level of our national security depends on it, as well as moral and psychological state of the

Armed Forces of Ukraine. Therefore, the fact that in our society, "... the formation of a national idea to an adequate degree has not happened yet" is rightly considered by O. Utkin as a "threat to the fundamental nature of national security". [10]

Spiritual values of the military men as citizens of Ukraine as a whole, which are directly related to patriotic education can be classified according to the approach proposed by M. Boryshevskyi. [2]

- Moral (kindness, justice, tolerance, honesty, mutual respect, dignity, responsibility, integrity and active resistance, irreconcilable attitude to the opposite phenomena). For soldiers, we believe, to this group should also should be included such values as mutual support and mutual assistance;
- Civic (patriotism, support for the fate of the motherland, the need to give all the energy to the service of the compatriots, etc.). For military qualities, in our opinion, there is also a belief in the necessity of respecting the public interest, loyalty to civil and military duty, civic discipline and willingness to defend the country, respect for the state language;
- Military and professional. In this group a feeling of military duty as the highest moral and patriotic military value should be highlighted. It acts as a kind of quintessence for such basic warrior values as a conscious attitude to the constitutional duty to protect Ukraine; willingness to study, preserve and multiply patriotic and martial traditions of the Ukrainian people and its Armed Forces and traditions of their service branch, union and unit, military rituals and symbols; creative approach to warfare, learning, training and maintaining military equipment and weapons, the desire to constantly improve their military and professional knowledge, skills; respectful attitude to the commanders (chiefs) and colleagues, efforts to strengthen the spiritual unity of the military corps;
- Ideological (national idea, ideals and values of the Ukrainian people, etc.);
- Intelligent (the ability to think critically and self-critically, the ability to nurture ones own objective assessment and views on various phenomena of, on the mankind, the meaning of the life – as a guarantee of ability for individul choise);
- Esthetic (esthetic sophistication, the ability to distinguish the true noble beauty from cheap imitations, vulgarity; sense of beauty);
- Environmental (awareness of invaluable meaning of natural environment in the life of every individual and society as a whole, careful attitude to nature, developed need to protect it from foolish and dangerous effects);
- Valeological (serious, responsible attitude to the physical and mental health , the ability (if necessary) to significant physical and spiritual improvement).

Thus, the ideals and values of patriotic education of the Armed Forces of Ukraine is an extremely important pedagogical category, which determines the direction and content of this area of education and accumulates the spiritual priorities of our people.

4 CONCLUSIONS

In complex modern conditions of Ukrainian society, of the state and the Armed Forces, in terms of cultural and spiritual expansion of some foreign countries revival of the spiritual realm of our people, clear definition of the ideological basis of their livelihoods is getting an outstanding importance. The concepts of "ideal of patriotic education" and of "values of patriotic education" of military men are fundamental conceptual categories that can adequately define the goals, objectives and contents of this directions for soldiers.

In the basis of the ideals and values of patriotic education of personnel of the Armed Forces there is a mentality of the Ukrainian nation, its best customs and martial traditions of previous generations defenders of the Fatherland. Their knowledge allows military teachers build educational process competently.

The explanation of the nature and content of the ideal and values of our people to soldiers is one of the important tasks of commanders and chiefs of the Armed Forces of Ukraine. It promotes teaching them to love their Fatherland and also provides effective military activity.

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ASSESSMENT OF THREATS FROM EXOGENOUS GEOLOGICAL PROCESSES TO SAFETY OF INTERNATIONAL TRANSPORT CORRIDORS IN UKRAINE

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Abstract: Threats from exogenous geological processes to the safety of international transport corridors in Ukraine are assessed. The results of regional assessment of the impact of dangerous geological processes on the safety of the international transport corridors that pass through the territory of Ukraine and form additional pressure on the upper zone of the geological environment are analyzed.

Keywords: International transport corridors, geological processes, threats, safety, assessment, GIS technology, geological environment.

The favorable geographical location of Ukraine in the center of the Eurasian transport system determines its formation and development as a powerful European transit state. The current system of Pan-European transport corridors covers a large part of Ukraine, including the West and Pridneprovsky coastal regions with considerable ecological and anthropogenic changes in the environment.

International Transport Corridor (ITC) is a set of ground and water transport routes with appropriate engineering infrastructure in certain areas, including ancillary facilities, access roads, border crossings, service points, cargo and passenger terminals, equipment and traffic control system which operate in accordance with the laws and regulations of the European Community and provide transportation of freight and passengers [1].

Development and functional of ITC system in Ukraine leads to the formation of new space distributed geological systems "ITC - environment". These systems make additional environmental impact, especially in the upper zone of the geological environment as the main recipient of most man-made influences. Analysis has shown the need to consider the impact of new negative factors in the ecological state of the territories crossed by the ITC.

Taking into consideration various national reports of the Ministry of Environmental Protection and Ministry for Emergencies of Ukraine, as well as numerous results of research institutes from NAS of Ukraine [2, 3], these factors include:

- Increased level of surface air contamination within industrial-urban agglomerations and mining areas;
- Chemical contamination of the surrounding landscape with heavy metals, oil, radionuclides from the Chernobyl nuclear accident;
- Total regulation of rivers, slowing water exchange of river basins, increasing levels of runoff pollution;
- Activation of dangerous exogenous geological processes (EGP) by manifestation of regional flooding on 30 % of the country's territory, development of the landslide, karst surface deformations in most regions, influence of global climate change.

Preliminary estimations indicate that the highest level of environmental threats to the ITC operation in Ukraine can be associated with reduced engineering stability of GE within large areas of ITC. This could happen due to sustained activation of EGP in Ukraine during the last decade.

International network of transport corridors has been defined by declaration of the First (1991, Prague), Second (1994, Crete) and Third (1997, Helsinki) Pan-European Conference on Transport. There were approved ten Pan-European international transports corridors, among which Pan-European №3, Pan-European №5, Pan-European №7, Danube (water), Pan-European №9, as well as international transport corridor Gdansk Odessa are crossing the territory of Ukraine.

Creation of ITC and its entry into the international transport system is recognized as nationwide priority direction of the development of transport system in Ukraine [4-6]. Since 1998, a number of important tasks from "Programs and creation of a national network of international transport corridors Ukraine" have been implemented. More than 9 billion USD were directed to the ITC infrastructure improvements, new technologies, the development of information systems, conducting scientific research.

Pan-European transport corridor №3 with total length of 1640 km is running through Germany, Poland and Ukraine on the route Berlin (Dresden) - Wroclaw - Lviv - Kyiv. The length of ITC № 3 within the territory of Ukraine is 617 km. A bridge over the river Western Bug on Ukrainian-Polish border was built in 2002 with the support of the European Union.

Pan-European transport corridor №5 with a length of 1595 km goes through Italy, Slovenia, Hungary, Slovakia and Ukraine on the route Trieste - Ljubljana - Budapest - Bratislava - Uzhgorod - Lviv. An important problem for ITC №5 in Ukraine for road and rail traffic is the overcoming of Carpathian Mountains, which suffer from seismic activity and landslides and debris infestation

processes on their slopes. As for rail traffic, the major obstacle in the operation of the ITC is one-track Bieszczady tunnel that was built in 1886 and now its technical condition is very poor. The tunnel significantly limits the train speed, throughput and capacity of entire corridor and therefore prevents the growing-up of traffic volumes. Further deterioration of its engineering and geotechnical condition can lead to a complete cessation of trains on this direction.

It should be noted that due to the impact of global climate change factors and associated with it abnormal floods (1998, 2001, 2008, 2012) there has been a significant activation of landslide and mudflow processes. Such situation greatly complicated geotechnical conditions for the functioning of ITC, which requires complex analysis and implementation of modern monitoring system for environmental and anthropogenic threats for ITC using technologies of remote sensing and geographic information systems.

Pan-European transport corridor №7 passes through the territory of Austria, Hungary, Yugoslavia, Bulgaria, Romania, Moldova and Ukraine. Its length is 1,600 km, including the Ukraine - 70 km. The first draft of the reopening of the navigable channel Danube - Black Sea that will revitalize Ukrainian transport companies and increase turnover in the Ukrainian part of ITC № 7 was introduced in 2004.

Pan-European Transport Corridor №9 runs through Finland, Russia, Ukraine, Belarus, Moldova, Romania and Greece on the route Helsinki - St. Petersburg - Vitebsk - Kyiv (Moscow) - Odessa (Kishinev) - Plovdiv - Bucharest - Alexandropoulos. The length of its main range on the territory of Ukraine is 1496 km of railway lines and 996.1 km of roads.

The basic direction of movement through the ITC №9 in Ukraine is the highways M-01 and M-05 from the border with Belarus through Chernigov and Kyiv to Odessa. The construction of the first stage of highway in the direction Zhashkiv – Chervonoznamyanka was completed in 2004. Restoration of the road by a specified direction will allow increasing the volume of international traffic, but it will also significantly increase the geotechnical load on the ground of ITC engineering structures.

International transport corridor Gdansk-Odessa goes through Italy, Slovenia, Hungary, Slovakia and Ukraine on the route Trieste - Ljubljana - Budapest - Bratislava - Uzhgorod - Lviv. Its total length on the territory of Ukraine is 266 km for railway lines and 338.7 km - for roads.

Transport Corridor Europe - Caucasus - Asia was developed as component of interstate Tacis program, which Ukraine was involved into in 1996. An active implementation of the program began in September 1998 when the Presidents of 12 countries: Ukraine, Moldova, Bulgaria, Romania, Turkey, Georgia, Armenia, Azerbaijan, Kyrgyzstan, Tajikistan, Kazakhstan and Uzbekistan signed the main multilateral agreement on international transport on development of Europe-Caucasus-Asia corridor.

One of the important parts of the Europe-Caucasus-Asia corridor is the Black Sea route that connects Ukraine and Georgia. Since 1996, the automotive and 1999 railway ferry Ilyichevsk - Poti (Batumi) has established on the initiative of Ukraine. After the signing of a tripartite agreement between Georgia, Ukraine and Bulgaria, the regular rail ferry service on the line Poti-Ilyichevsk-Varna had been opened. The railway ferry Illichivs'k-Derenzhi (Turkey) began to operate in 2004.

With the enlargement of the European Union the necessity of improvements of decisions from Common European Transport Conferences on the Pan-European international transport corridors and transport areas was emerged. Therefore, a new system of Trans-European transport network is forming in the EU, while the new EU member states and candidate countries for accession to the EU have a wide-ranging new plan for building the Trans-European transport system by 2020.

The European Commission identified and adopted 5 main priority areas of European transport axes: the northern, central, southeast, southwest and waterways between European ports. The territory of Ukraine belongs to the central axis with the main routes of rail and road transport.

There is a backlog of Ukraine related to the development of roads and transport networks. In particular, the density of roads in Ukraine 5.9 times lower than in France (respectively 0.28 and 1.65 km of roads / sq. Km area of the country). The length of highways in Ukraine is 0.28 thousand Km, while in Germany - 10.9 thousand Km, in France - 7.1 thousand Km. Such gap is explained by the significant amount of funding needed for the maintenance of the transport network in Ukraine compared to the European countries, low purchasing ability of the population, relatively small car park and a large territory.

Comprehensive analysis of ITC distribution through the territory of Ukraine shows that most of them cross regions with dangerous engineering-geological conditions caused by significant activation of karst, flooding, landslides, subsidence of loess in the last decade. As mentioned EGP expression can lead to significant complications to ITC operation and as such it is advisable to take into account the peculiarities of EGP appearance in modern conditions of Ukraine.

Regional activation of EGP in Ukraine has been developing during the last 20-25 years within the complex action of natural and anthropogenic factors, leading to a noticeable increase in the number of

emergencies of different origin with negative consequences for people and the environment [2, 7]. The greatest threat to people and industrial objects in the conditions of advanced development of flooding comes from the subsidence and weakening of foundation structures, forming anthropogenic aquifers in settlements, activation of karst processes.

Comprehensive analysis of the threat from emergency in ITC zones allowed determining the following differences of contemporary revitalization of EGP:

- Reducing the thickness of the aeration zone rocks under the influence of global warming, reduce fall-winter freezing rocks;
- Increasing of anthropogenic flooding in industrial, urban areas and mining areas with submersion of unprofitable mines and quarries;
- Aaccelerating the dangerous change of anthropogenic geological and engineering-geological balance that lower stability of coastal-marine, landscape and geological systems.

In recent years, the dynamics of the flooding process in Ukraine has a persistent tendency to intensify on regional level with a constant increase in the area of flooding [7, 8]. In general, it can be considered as a basic factor of complex risk of natural and anthropogenic origin, given the relative physical analogy of its space-time structure of the geological environment. According to the State Geological Survey of the Ministry of Ecology and Natural Resources of Ukraine, the most adverse conditions of flooding areas were formed in Dnipropetrovsk, Donetsk, Zaporozhye, Nikolayev, Odessa, Kherson, steppe zone of Crimea, where the average increase of flooding area has been identified at the level of 300 km^2 / year. Furthermore, loess horizons are dominated in the structure of the upper zone rocks of geological environment in these areas. It reinforces the negative effect of flooding on the safety of complex system "industrial object - geological environment".

The karst threat is caused by the distribution among the 38 % of Ukraine of rocks in which the processes of natural and anthropogenic karst can be developed [1, 2, 8]. It seems that in conditions of flooding at the ceiling of karsts rocks the more complex assessment of their capacity for physical and chemical suffusion and volumetric deformations of the earth's surface subsidence is needed, especially when it is connected to large dynamic loads from ITC.

The areas of subsidence of loess soils cover about 41 % of Ukraine. Dangerous loess soils mainly occur in areas with a progressive rise in groundwater levels in Dnepropetrovsk, Zaporozhe, Kherson, Nikolayev regions.

The natural and anthropogenic changes in the geological environment represent a significant threat to the territory of the joint effect from different EGP, because the concentration of several EGP significantly increases the risk of emergencies of geological origin for the safety of life-supporting and transport systems through the establishment of additional loads on their structural elements.

Attention should be drawn to the fact that ITC are crossing most of central and western administrative regions of Ukraine, which have moderate level of anthropogenic load compared to the eastern regions.

Using geographic information systems technology the spatial assessment of environmental and anthropogenic threats to the safety of the ITC is implemented. The physical basis for the criterion of ITC safety the section of ITC i the areas of sustainable spatial and temporal EGP development is adopted. The percentage of ITC length within the regional areas of EGP expression was used as quantitative value of criterion. Evaluation results for the territory of Ukraine are in the table.

Tab. 1 Approximate evaluation of threats to security of ITC from EGP in Ukraine

ITC	Share of ITC length on potentially dangerous areas, %			
	Karst	Flooding	Landslides	Subsidence
Gdansk - Odessa	50,1	24,5	10,8	37,9
Pan-European № 9	14,0	49,4	3,9	14,8
Pan-European № 5	15,6	10,2	20,0	7,8
Pan-European № 3	40,2	8,5	1,5	32,2

Analysis of this table reveals the most dangerous ITC related to the proportion of their length under threat of relevant EGP development.

The results indicate that the greatest threat for the impact of karst exists for Gdansk - Odessa ITC and Pan-European ITC №3. According to carried out assessment, the most part of the first ITC is located on territories of a probable activation of karst processes, which have a tend to increase due to advanced development flooding processes in large parts of Ukraine in recent years.

At the same time, the most unfavorable conditions for the functioning of ITC in conditions of potential threats from flooding are developed for Pan-European ITC №9 and Gdansk - Odessa ITC, because more than 24 % of their length is located on

the territories of flooding. It should also be noted that there is a regular link between spatial and territorial development and intensification of land flood and activation of other EGP of local origin.

This is due to the fact that EGP activation in the areas of flooding has probabilistic-rhythmic nature with the intensification tend in years with increasing levels of precipitation. It should also be noted that the most complex effects of flooding are observed in different cities and towns of Ukraine, in which 70 % of the population and the routes of the majority of ITC are concentrated.

The results indicate relatively less level of a threat from landslides for the majority of ITC as the share of its length that is located in areas suffered from landslides does not exceed 20 % of the Pan-European ITC №5.

According to the assessment results the greatest threat from the subsidence of loess soils for ITC safety exists primarily for ITC Gdansk - Odessa and Pan-European ITC №3, since more than 30 % of their lengths are located in potentially dangerous areas.

CONCLUSIONS

Ukraine is an important part of the European network of international transport corridors. Accelerated development of the ITC system in the territory of Ukraine determines activation of a number of environmental and anthropogenic threats for ITC operations and the formation of additional load on the environment.

The concentration of different EGP on potentially dangerous areas significantly increases the geotechnical threat emergencies on critical structural elements of ITC. Given the character of development of EGP in conditions of constant changes of the geological environment, various spatially distributed objects such as railways, roads, power lines located in areas of display flooding, landslides and karst become seriously vulnerable.

Practical safety operation of ITC requires early identification and assessment of the most demanding environmental and anthropogenic threats to the efficient development of protective and preventive measures. Among these threats the most essential are flooding, karst and landslide processes, taking into account their significant regional development and spatial-temporal activation in recent years in Ukraine.

The existing monitoring system does not provide systematic geological surveys of landslide areas, breeds, seismic and other geologic processes that may adversely affect the safe operation of ITC and needs radical improvement.

In present conditions there is an urgent need for more thorough studies of complex influence the whole spectrum of environmental and anthropogenic threats to the security of ITC in Ukraine using the technology of remote sensing and geographic information systems.

It is advisable to create a subsystem for monitoring of ITC and other spatially distributed engineering transport systems in Ukraine for the evaluation of geological and anthropogenic threats which have been constantly increasing in recent years.

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CARDIOVASCULAR DISEASES THEIR PREVENTION AND THE IMPORTANCE OF HEALTHY LIFESTYLE AND PHYSICAL TRAINING IN THE ARMED FORCES OF THE SLOVAK REPUBLIC

Katarína MAJERČÍKOVÁ

Abstract: This article presents conclusions of research focused on a prevalence of cardiovascular diseases and their prevention at the Slovak Armed Forces. The aim is to determine lifestyle of soldiers, presence of risk factors; their influence on prevalence of cardiovascular diseases and to asses a possible prognosis of the above mentioned diseases at Slovak Armed Forces taking into account the characteristics of the soldiers' career.

Keywords: Cardiovascular disease, lifestyle, primary prevention, research.

1 INTRODUCTION

Cardiovascular diseases are considered a sum of diseases caused by atherosclerosis which causes disease of coronary, brain and peripheral arteries. According to WHO statistics, the highest mortality rate in EU resulting from atherosclerosis is close to 2 million and this means the highest mortality rate of population before 75 years of life expectancy. Slovakia belongs to countries with the highest cardiovascular mortality rate within EU (WHO, 2009). Also an increase of obesity is considered a risk factor increasing mortality rate.

Cardiovascular diseases (CD) prevention has been implemented for some period of time based on a change of individual's lifestyle (Woolf, 2008). CD prevention is established on various social programs advertising CD as a disease dependable on lifestyle (Vörösová, 2005). CD caused by unhealthy lifestyle becomes significant also at AF SVK (Minárik, 2007).

Every soldier is entitled to an annual medical check. This annual check includes standard physical tests such as weight, height, urine, and blood pressure test. Blood test is not included in this medical check. These medical tests are provided by the medical service within the unit. Every other medical check is identical to preventive medical check provided in civilian sector.

In case of positive findings during the annual check, a soldier visits the general practitioner.

Military medics play a vital role in this medical care by educating soldiers about healthy lifestyle as well as motivating soldiers to be responsible for their lives (Handler, 2008).

The provision of medical education among the soldiers about CD seems to be a practical tool at all levels of a medical care system, not forgetting to mention that the education is to be oriented at all age categories (Miller, 2010).

2 OBJECTIVES OF RESEARCH

The objective of this research was to characterize the lifestyle of a professional soldier at Slovak Armed Forces taking into account the characteristics of the soldier's career requiring physical and psychical demands.

Aims of research:

- to compare lifestyle of respondents without CD and respondents in whom the CD has recently occurred,
- to specify risk factors that lead or could lead to occurrence of CD,
- to create possible prognosis of development of CD at AF SVK.

3 RESEARCH

Method:

Partially standardized questionnaires from standardized WHO - WHOQOL-BREF questionnaire supplemented by our own questions and anthropometric measuring.

We created 2 types of questionnaires, for respondents with and without CD.

Content of Questionnaire:

a) Categorization items about age, genre, education, subjective acceptance of lifestyle, respectively the approach of CD positive patients to disease. Respondents were given a chance to express their thoughts in responses to some questions.
b) Anthropometric items – weight, height, waist size, blood pressure. These items were taken from patients' medical files within the last 4 years, but also by our own measuring - based on gathered values of BMI and WHtR (weight to height ratio).

Compilation of gathered values:

Microsoft Excel spreadsheet program - most of the questions were created with scaling answers, for evaluation we used the allocation of numbers from 1 to 5. This numeric data was processed (value 1 meant incorrect answer, value 5 meant correct answer, in case of answer "I don't know" we used value 0).

Hypothesis tests:

Standard statistic test in 'Statistica 12' program. Statistic methods: Fisher test, Student t-test, Chi quadrate test of independency, testing statistics, critical value and p-values.

Testing values:

Professional soldiers from the different bases - we distributed 340 questionnaires for every group of respondents.

We received 168 completed questionnaires without CD (HLTr), which represents 49,4 % and 82 questionnaires with CD (CVDr), which represents 24,1 %.

Time period of research:

August to December 2011.

Age categories:

Age categories are in accordance with categories officially stated for annual physical test:

Tab. 1 Age categories

Age	HTLr	%	CVDr	%
up to 25 years	21	12,5	0	0
26 - 30 years	37	22	7	8,5
31 - 35 years	59	35,1	22	26,8
36 - 40 years	42	25	33	40,2
41 - 45 years	9	5,4	20	24,4
Summary	168	100	82	100

Educations:

a) HLTr- high school 64 %, university 36 % ,
b) CVDr – high school 59 %, university 41 %.

Gender:

a) male – 150 respondents HLTr (89 %),
b) 77 respondents CVD (94 %),
c) female – 18 respondents HLT (11 %),
d) 5 respondents CVD (6 %).

4 RESEARCH CONCLUSION

Aim of the research:

The objective of this research was to characterize lifestyle of a professional soldier at Slovak Armed Forces taking into account the characteristics of the soldier's career requiring physical and psychical demands.

Research question:

What is the difference of quality of life among members of AF SVK with/without CD?

Research hypothesis:

By respondents with CD we discovered the negative change in the domain of physical health, which is statistically higher than by monitored group. Evaluation of hypothesis was divided into evaluation of questionnaire items, anthropometric and physiologic measuring.

Anthropometric and physiologic measuring:

Anthropometric and physiologic data were taken from patients' medical files within the last 4 years, but also by our own measuring. The evaluation was done by separate measuring of blood pressure, weight, BMI, WHtR and also every specific item in connection with age.

The average values of blood pressure at monitored groups slightly changed. During 4 years, the average value of blood pressure in group HLTr increased. Statistically, both of the values of blood pressure – high and low at HLTr group during 4 years increased.

Tab. 2 Average blood pressure - HTLr

Average blood pressure HLTr (Torr)										
year	**2008**		**2009**		**2010**		**2011**		**SUM**	
average	***120,7***	***79,4***	***120,8***	***79,8***	***122,0***	***80,0***	***122,4***	***82,0***	***121***	***80***
min									90	60
max									150	100
offset	***8,7***	***6,9***	***8,7***	***5,3***	***9,0***	***5,3***	***10,0***	***6,4***	***9,1***	***6,1***
angularity	0,173		0,321		-0,452		-0,108		-0,10	
taperness	0,644		0,248		1,436		-0,734		-1,52	

The second group of respondents – CVD no significant statistical change of blood pressure.

Tab. 3 Average blood pressure CVD

Average blood pressure - CVD (Torr)										
year	**2008**		**2009**		**2010**		**2011**		**SUM**	
average	***136,2***	***87,4***	***136,6***	***87,4***	***139,0***	***88,1***	***134,9***	***87,5***	***137***	***88***
min									100	60
max									168	119
offset	***14,3***	***7,5***	***12,4***	***7,2***	***10,9***	***8,8***	***10,9***	***7,7***	***12,1***	***7,9***
angularity	-0,181		-0,128		-0,732		-0,359		-0,08	
taperness	-0,440		0,561		0,290		0,752		-1,48	

By monitoring the blood pressure values depending on the age, we discovered that by respondents with CD with increasing age, both values of blood pressures were higher than of an HLTr group.

Tab. 4 Evaluation of blood pressure according the age

Evaluation of blood pressure according the age (Torr)									
Vek	**R**	**2008**		**2009**		**2010**		**2011**	
1.	**HLT**	-	-	-	-	-	-	-	-
	CVD	-	-	-	-	-	-	-	-
2.	**HLT**	121	80	122	79	121	83	122	80
	CVD	137	86	136	84	135	82	134	86
3.	**HLT**	121	80	121	81	123	81	123	83
	CVD	138	85	137	87	140	86	136	86
4.	**HLT**	121	81	120	80	121	80	123	83
	CVD	136	89	136	88	138	88	134	89
5.	**HLT**	115	77	118	78	117	78	117	78
	CVD	134	88	138	89	142	92	135	88

Statistically, a significant difference between HLTr group and CVDr group was confirmed at all categories except the category 2. It proves that respondents with CD had higher values of blood pressure. This argument is applicable to all common levels of significance. The youngest group of the monitored age category (26 – 30 years) showed the difference only at high value of blood pressure. The difference among groups at low value of blood pressure was statistically not significant.

It is obvious that with the increasing age the values of blood pressure are changing mostly at the group of respondents with CD. This means that these professional soldiers have this disease, but they had not paid attention to it and in spite of healthy eating habits, they did not reach a good score at annual physical tests.

The conclusion is weight gain, development of arthrosclerosis and consistent changes at blood pressure values. During monitoring years 2008-2011, the average weight at both groups increased. The average weight of group HLTr increased by about 2,1 kg. Also, in statistical evaluation, we saw significant changes.

Tab. 5 Average weight HLTr

Weight	Average weight **HLTr (kg)**				
	2008	**2009**	**2010**	**2011**	**SUM**
average	82,2	82,6	83,5	84,3	***83,15***
min					*52*
max					*120*
offset	12,71	13,04	13,23	13,62	*13,15*
angularity	-0,284	-0,157	-0,139	-0,174	-0,174
taperness	-0,343	-0,170	-0,014	-0,038	-0,141

At CVDr group we also registered increase of the weight by about 2,7kg. At the statistical evaluation we saw significant changes. The increase of weight during 2008 – 2011 was the same as at group HLTr. We can assume that without the presence of disease, all respondents gained weight, which was caused by the increasing age as well as leading unhealthy lifestyle.

Tab. 6 Average weight CVDr (v kg)

Weight	**Average weight CVDr (kg)**				
	2008	**2009**	**2010**	**2011**	**SUM**
average	90,2	91,7	92,2	92,9	***91,73***
min					*55*
max					*120*
offset	12,95	12,71	13,03	12,95	*12,89*
angularity	-0,186	-0,394	-0,411	-0,409	-0,341
taperness	0,275	0,268	0,258	0,305	0,180

Likewise the value of blood pressure, we also focused our measuring on the analysis of average weight according to age categories. At first age category, the weight was higher at CVDr group; at 4th age category, the weight was the same; and at the 5th age category, the weight was higher at CVDr group:

Tab. 7 Evaluation of weight according age (v kg)

Evaluation of weight according age (kg)						
Age	**R**	**2008**	**2009**	**2010**	**2011**	**Increase**
1.	**HLT**	-	-	-	-	
	CVD	-	-	-	-	
2.	**HLT**	80,2	80,3	80,8	81,5	1,3
	CVD	95,1	94,3	95	94,4	-
3.	**HLT**	83,2	83,7	84,7	85,2	2
	CVD	88,4	90	91,8	92,1	3,7
4.	**HLT**	83,8	84,8	86,3	86,8	3
	CVD	89,4	91,2	91,4	92,9	3,5
5.	**HLT**	78,5	78,9	78,4	78,9	-
	CVD	91,6	93,2	93	93,1	2,5

At all groups except the 4th group, a statistically significant difference was confirmed between HKTr and CVDr. Respondents with CVD had higher values of body weight at all common levels of significance.

Consistent increases in weight together with the combination of hypertension are pertaining factors of CVD in terms of high risk of angina pectoris, myocardial infarction, or cerebrovascular disease (Diehl, 2000).

Thus, it is necessary to follow healthy lifestyle, pursue adequate weight and be careful what to eat, in a sense to nutritional balance.

The third researched value was BMI. The BMI value increased statistically.

Tab. 8 BMI at HTLr

	BMI at HLTr				
	2008	**2009**	**2010**	**2011**	**SUM**
average	**25,4**	**25,6**	**25,8**	**26,1**	***25,74***
min					***18,8***
max					***35,8***
offset	3,02	3,15	3,19	3,22	***3,15***
angularity	0,442	0,634	0,690	0,638	**0,608**
taperness	0,275	0,552	0,888	0,897	**0,665**

CVDr had higher BMI, alike the second group of respondents by whom the value increased during the monitored period 2008 - 2011. At both monitored groups we noticed a significant increase of BMI, which is connected with weight gain.

Tab. 9 BMI at CVDr

	Hodnotenie BMI u CVDr				
	2008	**2009**	**2010**	**2011**	**SUM**
priemer	**28,2**	**28,7**	**28,9**	**29,0**	***28,69***
min					***18,6***
max					***39,2***
offset	3,75	3,57	3,78	3,73	***3,70***
angularity	0,155	-0,080	-0,050	0,001	**0,009**
taperness	0,552	0,109	0,172	0,004	**0,133**

Also, we focused our research at BMI to age categories:

Tab. 10 BMI according age

BMI according age						
Vek	**R**	**2008**	**2009**	**2010**	**2011**	**Nárast**
1.	**HLT**	-	-	-	-	
	CVD	-	-	-	-	
2.	**HLT**	25	25	25,2	25,4	0,4
	CVD	29,1	28,9	29,2	29	-
3.	**HLT**	25,6	25,7	26	26,2	0,6
	CVD	28,1	28,6	29,2	29,3	1,2
4.	**HLT**	26,1	26,4	26,9	27	0,9
	CVD	27,9	28,4	28,5	28,9	1,1
5.	**HLT**	25,6	25,7	25,5	25,7	-
	CVD	28,5	29	29	28,9	0,4

By monitoring BMI at every age category, we also found out a significant increase of values at both HLTr and CVDr groups.

From the prospective of BMI, we also found out there is almost half of the respondents with the value 25 to 30, which is considered overweight - less than a half of the healthy respondents, but only 12 % with CVD has normal weight.

Based on statistical calculation, we came up to a conclusion that the obesity of the respondents is related to CVD. Respondents without CVD have generally normal weight.

Tab. 11 Ratio of respondents comparing BMI

		HLTr		***CVDr***	
		figures	%	figures	%
underweight	bellow 18,5	0	0 %	0	0 %
normal	18,5 - 24,9	70	42 %	10	12 %
overweight	**25,0 - 29,9**	**81**	**48 %**	**41**	**50 %**
obese	30,0 - 39,9	17	10 %	31	38 %
extreme obese	40 above	0	0 %	0	0 %
SUMMARY		168		82	

WHtR was used more often than BMI because it evaluates appropriateness of weight of a human body. It is calculated as ratio of waist and body height and the optimal value is 0,4 to 0,5. WHtR values in HLTr group drove from 0,39 to 0,66, where almost half of respondents had normal weight, but 43 % of the respondents were overweight. At CVDr group values drove from 0,41 to 0,71, which means that respondents with overweight prevailed. A quarter of the respondents had normal weight, the second quarter were obese. By statistical research, we came to a conclusion that CVDr has higher index of WHtR than HLTr.

We also analyzed the index of WHtR according to age categories. In the second age category, the WHtR index was identical at both groups. In the third and fourth group, the WHtR index was higher than at CVDr group. In the fifth category the index was identical.

The value of WHtR was calculated based on measuring the waist, which is a significant indicator of abdominal obesity and from the cardiovascular aspect more risky than central obesity. We discovered that 65 % males in group HLTr and 39 % in group CVDrv has normal index of waist. 87 % of female respondents have normal waist, only 13 % showed abdominal obesity.

Tab. 12 Evaluation of waist measures

Weist	HLT men		CVC men		Women	
	Fig.	*%*	*Fig.*	*%*	*Fig.*	*%*
below 94 cm (normal)	97	65%	30	39%	-	-
above 94 cm (abd. obesity)	**53**	**35%**	**47**	**61%**	-	-
below 80 cm (normal)	-	-	-	-	20	87%
above 80 cm (abd. obesity)	-	-	-	-	**3**	**13%**
SUM	150	100	77	100	23	

An identification of abdominal obesity is very important because it is undependable risk factor for serious cardiovascular diseases. It represents the main criteria for diagnosis of metabolic syndrome, which is only a predictor of CVD.

Questionnaire items:

The evaluation of questionnaires was essential for hypothesis conclusion that brought us to a subjective view of respondents to their lifestyle. We focused on healthy food, smoking, drinking of alcoholic beverages and physical training. We divided practicing of physical training to during working hours and non-working hours. In the following chart, we bring average score at particular items.

Tab. 13 Questionnaire evaluation

ITEMS	Average score	
	HLTr	CVDr
Healthy food	2,78	2,51
Intake of fruits and vegetables	2,74	2,95
Intake of meat products	3,19	2,94
Intake of fat and fried food	2,3	2,27
Smoking	3,05	3,21
Alcoholic beverages	3,23	3,37
Physical activities / working hours	2,63	2,68
Physical activities / non working hours	2,58	2,48

According to the above mentioned, it is obvious that respondents with CD showed similar scores as respondents without CD. However, when we compare individual items, it shows better eating habits of CVDr group, but it shows weak physical activities and thus worse physiological parameters. These values provide an objective view on a soldier's health.

In spite of healthy lifestyle, in respect of character of occupation, stress plays a significant role in CD development. As the respondents stated, the cause of stress mainly occurs at work and minimally at home. Sport as a tool for fighting stress was minimally practiced; it was psychical relaxation that was mainly used to fight it. Inhibition of negative emotion could lead to progression of CD.

As stated earlier, we divided practicing of physical training to during working hours and non-working hours. We tried to find out if the soldiers do PT independently. During the working hours only half of the respondents do PT once a week, one third does PT 3 times per week. During non-working hours only one third of respondents in both groups do PT; half of respondents with CD does PT only once a week, one third of respondents without CD does PT once a week.

The cause of this situation is avoidance of PT resulting from subjectively insufficient time or aversion to PT.

When a soldier does not meet the criteria of the annual physical test within two years, he may be released from the service.

It is in an interest of everyone to actively conduct PT and so enhance their stamina as well as elimination of the risk of metabolic and CD development.

5 CONCLUSION

In Slovakia 50 percent of death rate is caused by CD. Behind the development of CD, there stands unhealthy lifestyle such as junk food, almost no PT, and stress (Chrpová, 2009).

Most of the CD risk factors could be influenced by the individual (Fox, 1999). In spite of this, CD has big mortality rate around the world.

Unfortunately, most patients do not follow the medical instructions and by doing so they threaten themselves.

The treatment of CD is not only expensive but also long termed and it requires honesty oriented approach of every patient.

As we know the prevention is much cheaper than treatment.

One of the tasks is to enhance the quality of a human life by influencing them with targeted education and also by doing periodical medical checkups (Kamenský, 2007).

The aim of the research was to determine lifestyle of soldiers based on specific occupation and compare it among respondents with or without CD.

Our research shows that obesity exists among soldiers, their lifestyle disposed to right direction such as healthy eating, but does not correspondent with PT and that creates conditions for development of CD risk factors.

We can allege that CD prognosis in Armed forces will become a serious issue that we can document by increased values of weight, BMI and WHtR.

Healthy lifestyle is a more subjective term, objective outcomes prove the opposite. For the future, these facts could reduce readiness of soldiers

to perform their duty at home and especially when deployed abroad.

Individual health care should be oriented to healthy lifestyle and also application of information to common life (Závodná, 2005).

Therefore it is important to build the strategy to fight CD on patient oriented education.

Only well-informed individual can approach to his health more responsibly and share this among people around him. The environment of armed forces provides enough time for qualitative education for instance during health care classes.

In civilian sector, a nurse plays an important role in primary health care. In armed forces, this role is substituted by military medics. The aim of such education is to focus the soldier's attention not only on performance of their duties but also to be more involved to protect their health in terms of increasing the amount of PT, changing eating habits and also information about healthy living.

It is essential for soldiers to be aware of the CD and in case of weakening their health, they should immediately ask for an appointment.

By eliminating the CD as a threat, soldiers' performance at the active duty would be prolonged and so would life expectancy.

Along the fight against CD, obesity is becoming even more serious issue within AF SVK.

It causes reduction of soldiers' performance and also it is a risk factor for other diseases and thus reduces the length of military service.

"Cor primum vivens et ultimum moriens." The heart is the first to live, the last to die. Hence, we need to take care of our heart in order to serve us as much as possible.

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POLES' SENSE OF SECURITY - SELECTED SOCIOLOGICAL ASPECTS

Katarzyna DOJWA-TURCZYNSKA

Abstract: Security is one of basic individual and social needs. It is the responsibility of public institutions which, operating in a democratic state, must not only make sure that it is ensured on various planes and in various dimensions, but also accept that the opinions of citizens are important in this respect. Poles generally feel safe in their country, and declare that their place of residence is peaceful. This however does not exclude the fact that recently part of Poles have been victims of crimes or are afraid that such a situation may happen to them.

Keywords: Security, public security, threat of terrorism, opinion polls.

1 INTRODUCTION

In the „Introduction" to one of his books, Andrzej Misiuk writes that „one of the fundamental human needs is sense of personal safety".[1] Of the same opinion is another author, who points out that „efforts to satisfy the need for security at possibly highest level is an essential element of human existence".[2] Nowadays, responsibility for ensuring security lies with special formations established for this purpose – uniformed public services.[3] In every country, it is important how these groups perform their tasks and whether they really fulfil their functions. In a democratic state, it is also important how the activities of these groups are perceived by society.[4]

The paper presents selected opinion surveys on Poles' sense of security, conducted on Polish population (all-Polish research sample). The issues addressed included, among other things: national security and threat of terrorism, safety in the place of residence, subjective sense of threat and situations in the respondent's life when he/she became a victim of a crime.

2 METHOGOLOGY AND METHODS

Security studies – an autonomous, new field of research - appeared in the western science in the 1990s. In Poland, institutionally, this field was born in 2011,[5] but research and studies constituting the starting point for numerous scientific publications and conferences had been conducted earlier. The issues that today are part of security studies were addressed as part of various specific sociologies (e.g. sociology of the army, or the emerging sociology of dispositional groups), as well as political science and international relations, administration and law, and military studies. Different scientific fields, based on various methodologies, and using different methods and studies, addressed the issues of the importance of security and its dimensions, transformations occurring within it, normative solutions and practical aspects, as well as those who are responsible for security, law and order in various dimensions and at different levels of social life.

As Józef Kukułka pointed out, failure to satisfy the need for security affects an individual and society. Lack of security "does harm to an individual or a group of human beings, as it destabilizes their identity and functioning. As a result, they show tendencies to change the existing situation, resist disadvantageous changes in the outside sphere and use defence measures to restore their sense of security. These tendencies show that security is not so much a certain state of affairs as a continuous social process where its participants try to improve the mechanisms that ensure them sense of security."[6]

As pointed out by R. Zięba, who was already cited on a number of occasions, methodology of studying security in social sciences involves two dimensions. The first is ontological dimension, which refers to the social nature of security of various entities. The ontological dimension can be illustrated by means of an imaginary axis, where at the one end is objectivism, and at the other - subjectivism. It is about the answer to the question about the existence of some objective reality, objective security or its subjective creation by people. The second dimension is epistemological dimension, which refers to acquiring knowledge about security of entities. Here two approaches can be distinguished. The first one allows for scientific

[1] MISIUK, A.: *Administracja porządku i bezpieczeństwa publicznego. Zagadnienia prawno-ustrojowe*, Oficyna Wydawnicza Łośgraf, Warszawa 2012, p. 9.

[2] FEHLER,W.: *Bezpieczeństwo przestrzeni publicznej*, [in:] W. Feher (red.) *Bezpieczeństwo publiczne w przestrzeni miejskiej*, Wyd. Arte, Warszawa 2010, p. 16.

[3] MACIEJEWSKI, J.: *Grupy dyspozycyjne społeczeństwa*, Wyd. Uniwersytetu Wrocławskiego, Wrocław 2012.

[4] DOJWA, K., BODZIANY, M.: *Public Relations instytucji bezpieczeństwa*, Wyd. WSOWL, Wrocław 2013.

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[6] KUKUŁKA, J.: *Nowe uwarunkowania i wymiary bezpieczeństwa międzynarodowego Polski*, „Wieś i Państwo", 1/1995, pp. 198-199, after: R. Zięba, O tożsamości…, op. cit., p. 7.

explanation of the issues of security, while the second one allows for their understanding.[7]

Assuming after R. Zięba, that security is a social construct and the way it is described and studied depends on the tradition of researchers, an attempt has been made to answer the research question of whether Poles feel safe. Specific questions were: is Poland a safe country? Do Poles feel the threat of terrorism? Do Poles feel safe in their place of residence?

Within sociology, which is one of social sciences, empirical studies are conducted based on the division of methods and techniques into qualitative and quantitative ones. Research methods result from the adopted methodology and model of social world, tasks set by a researcher and results that he/she wants to achieve. Quantitative methods, which are genetically set in positivism, should give comparable, numerical data, which is "untainted" by the influence of a researcher, and thus objective. In contrast, anti-naturalistic qualitative methods, which assume that a researcher is active at different levels of research, are used to obtain material that is unique, specific and de facto not represented by numbers and percentages.[8] The second type of research was more attractive as the basis for this discussion due to the nomothetic scope of research findings, structured research strategy adopted by the researchers and the character of the results themselves. Thus, undertaking a research problem involving the answer to the question about the sense of security among residents of Poland, entailed the choice of positivist methodology and reliance on empirical studies of quantitative nature.

Resignation from own research, despite awareness of greater value of such research, was based on attractiveness of already existing reports. This attractiveness was increased by cyclicity of the surveys, the fact that they were conducted according to the same pattern and using the same tool in different periods, which also made it possible to reconstruct certain tendencies and find trends. Thus, an attempt to answer the main research questions and sub-questions was based on official data from Public Opinion Research Center.

3 POLAND A SAFE COUNTRY TO LIVE

Literature of the subject names various functions of the state. The external function includes maintaining relations with other states and international organisations, whereas the internal (protective) one – ensuring security and public order. We can also distinguish an economic-organisational function (where the state pursues an appropriate economic policy), social one (ensuring citizens minimum livelihood), cultural one (ensuring access to cultural goods), educational one (ensuring equal access to education), health care related function (setting up an adequate number of health care establishments) or environment related function (creating appropriate regulations to ensure protection from degradation and preservation of the existing state of the natural environment).[9] In Poles' opinions, the main obligation of the state is to ensure its citizens security and protection from crime – this attribute of a political organisation was indicated by as many as 99 % of the surveyed who were asked to specify the most important functions of the state.[10] Thus, the fundamental question is whether, according to Poles, this function is performed. The answer to this question will be provided on the basis of surveys conducted by the Public Opinion Research Centre.

In a 2013 survey,[11] as many as two-thirds of respondents (exactly 64 %) claimed that they felt safe in Poland. One-third declared the opposite, and only three out of a hundred respondents didn't have an opinion on this issue.

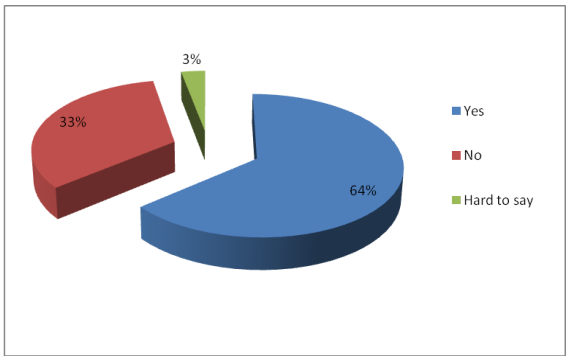

Fig. 1 Answers to the question: Is Poland a safe country to live? (2013)
Source: Bezpieczeństwo publiczne, CBOS, BS 63/2013, Warszawa 2013.

This relatively high sense of security is however not record high – two years earlier (April 2010), as many as three-thirds of respondents declared feeling safe. In the 2010 survey, the data was gathered

[7] ZIĘBA, R.: *O tożsamości…, op. cit.,* p. 17.

[8] DOJWA, K., TURCZYŃSKI, P.: *Realizacja badań empirycznych z udziałem przedstawicieli grup dyspozycyjnych*, [in:] M. Baran-Wojtachnio, J. Dziedzic, M. Kloczkowski, J. Maciejewski, W. Nowosielski (editor) *Wybrane aspekty teoretyczne i praktyczne, Społeczne aspekty zawodu wojskowego*, Wyd. Adam Marszałek, Toruń 2010, pp. 343-366.

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[11] *Bezpieczeństwo publiczne*, CBOS, BS 63/2013, Warszawa 2013.

between 8 and 19 April,[12] but it seems that the Smolensk Crash did not cause a decrease in respondents' sense of security. This can be explained by a lack of theories at that time indicating other causes of the tragedy than weather conditions and human error and the feeling that the state „passed the exam" in those moments.[13]

A 2014 survey leads to even more interesting conclusions. Poles' sense of security increased compared with the previous year. There is a noticeable increase (from 64 % to 70 %) in the percentage of people who think that Poland is a safe place to live in, whereas the percentage of those believing that the country is in danger is falling (from 33 % to 24 %). The percentage of those who have no opinion on this matter has doubled (from 3 % to 6 %).[14]

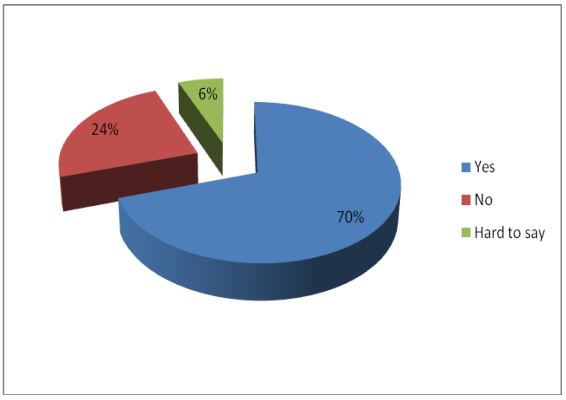

Fig. 2 Answers to the question: Is Poland a safe country to live? (2014)
Source: Opinie o bezpieczeństwie w kraju i w miejscu zamieszkania, CBOS, BS 84/2014.

Given the issues connected with the conflict between Russia and Ukraine, i.e. countries that are close neighbours of Poland, this result may seem surprising. It can be, however, explained by media statements of state authorities and representatives of the army about Poland's security, Poles' limited knowledge about what is happening in Ukraine, and lack of real interest in international affairs. The army, which earlier rarely made appearances in the media, have now become more visible, their commanders appear on TV programmes, attractive equipment is presented on television, and modernisation of the army and further purchases are announced. Public Relations campaign, combined with stressing the professionalism of the Polish Armed Forces and presence in the NATO, is fairly effective, therefore Poles' sense of high security is not surprising. Thus, the influencing factor is Poland's presence in the NATO and EU and belief that Poland holds an attractive position on the international arena.[15]

Does – according to Poles – the situation in Ukraine is a threat to the security of Poland? Analysis of the responses in a 2014 survey shows that they are clearly connected with the current situation, but at the same time the assessment of what is happening behind the eastern border has practically no impact on perceiving Poland's security as such. In February 2014, such threat was indicated by only 30 % of those surveyed, whereas in March 2014 (finalization of the issue of the Crimea) this figure was 72 %. In April 2014, the percentage of people viewing the situation in Ukraine as threatening the security of Poland fell to 61 %, while in May – to 52 %.

In 2008 and 2009, sense of security among Poles was quite high, as it was declared by 68 % and 69 % of respondents respectively. What's interesting, a relatively high sense of security was observed among Poles also in 1987, i.e. in the twilight of an undemocratic system in Poland, before the Round Table discussions, first democratic elections (1989) and the emergence of political pluralism in the form of different parties functioning on the political stage in the early 1990s. In the first years of the political transformation, most respondents perceived Poland as a country which is not safe to live. The peak of negative assessment occurred in 1995, when as many as 79 % of respondents declared a sense of threat, and only 19 % claimed that they felt safe in Poland. It seems that Poland's accession to the European Union was a turning point after which this trend reversed. While in March 2004 Poland was perceived as a safe country by 33 % of respondents, one year later this percentage grew to 46 %. In 2006, it was 43 %, and did not fall below half the respondents in subsequent measurements.

Analysing the figures above, we can ask why in the period of the Polish People's Republic most respondents claimed that they lived in a safe country, but in the period of transformation the situation was different. Apart from a range of factors that made a daily life more difficult for an individual at that time (unemployment, poverty, liquidation of workplaces and introduction of principles of free market with a limited protective function of the state), the most important seems to be the argument pointed to by Wojciech Sitek. For a public survey to show real opinions and attitudes of respondents

[12] *Opinie o poczuciu bezpieczeństwa i zagrożeniu przestępczością*, CBOS, BS 80/2010, Warszawa 2010.

[13] Ocena działalności władz państwowych i wizerunek klasy politycznej po smoleńskiej katastrofie, CBOS, BS 73/2010.

[14] Opinions on security in the country and place of residence, CBOS, BS 84/2014.

[15] Views that Poland holds a good position on the international arena were indicated in May 2014 by 61 % of the respondents. The opposite view was declared by 30 % of those surveyed. See: International situation and security of Poland, CBOS, BS 80/2014.

towards specific phenomena, respondents cannot be afraid of expressing their opinions.[16]

4 THREAT OF TERRORISM

The 2001 World Trade Centre attack released an avalanche of events that led to a military action in Afghanistan and Iraq by some Western countries.[17] Regardless of different nations' attitudes to the conflict, its nature and grounds,[18] from the perspective of residents of the USA, Spain, Great Britain or Poland there was a threat of terrorism on the territory of their countries. Terrorism is most often defined as a use of force or violence against people or property in violation of law.[19] The aim of terrorist activities is to force a certain action. They may affect the whole population, but most often – they hit a certain part of it.[20] In countries where there is democracy and free media, civilian population constitutes an attractive target of a potential attack. Countries participating in military operations take into account public opinion. Death of several, a dozen or several dozen citizens is perceived there completely differently than in undemocratic countries. Despite adoption of a range of solutions and tightening up security procedures, it is not possible to eliminate the threat of terrorism.

In May 2013[21] one-fourth of respondents (26 %) claimed that they were personally afraid of terrorist attacks, however only one out of twenty respondents categorically declared such fears.[22] Seven out of ten respondents (72 %) claimed they didn't have such concerns. Analysis of the results of previous surveys shows that sense of threat caused by terrorism was lower in 2010, when it was expressed by 25 % of respondents. In the years 2003-2005, such concerns were expressed by over half of the surveyed. Back in 2003, subjective sense of terrorist threat was declared by 52 % of respondents, whereas one year later this figure grew to 64 %.

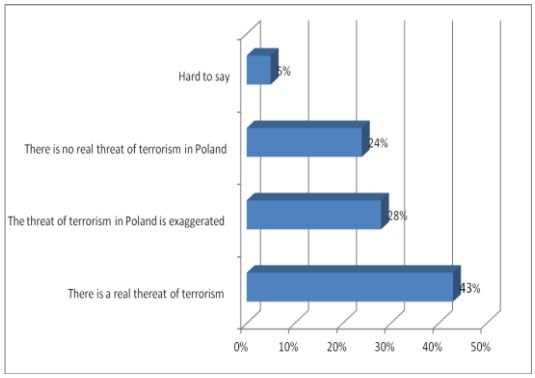

Fig. 3 Perception of the treat of terrorism in Poland
Source: Zagrożenie terroryzmem, CBOS, BS 78/2013, Warszawa 2013.

The survey cited above included a question about respondents' opinions on the current threat of terrorism. According to 43 % of respondents, Poland was under genuine terrorist threat, 28 % of respondents believed that this threat was exaggerated, and 24 % saw no real danger of terrorism. An attempt to outline, based on the surveys above, opinions on terrorism dominating in the Polish society, would show that although there is genuine threat, individual respondents are not afraid of it.

In Poland, there are various institutions established to counteract terrorism. Once again let's cite A. Misiuk, who states that „specialised state institutions should be prepared to prevent threats and if they occur – they should undertake preventive and repressive actions." How do respondents assess preparation of such institutions for this type of activities? Over half the respondents (58 %) claimed that Polish authorities and public institutions were not well prepared to prevent terrorist attacks. One-third of respondents (28 %) believed that they were well prepared for this task. Similarly pessimistic is the fact that, according to most of the respondents (51 %), the authorities and institutions are not well prepared to inform the public about possible threat.

5 SAFE LOCAL COMMUNITY

Whether in the final years of the period of the Polish People's Republic (1987) or during the political transformation, the overwhelming majority of Poles who were asked if their neighbourhood could be regarded as peaceful and afe gave a positive answer. In all the surveys conducted between 1987 and 2013, the percentage of respondents who perceived their „locus" as safe was

[16] SITEK, W.: Między rynkiem a civil socjety, Wyd. Scholar, Warszawa 2007.
[17] More on this subject: P. Turczyński, Bezpieczeństwo europejski. Systemy. Instytucje. Funkcjonowanie, Wyd. Alta2, Wrocław 2011, p. 127.
[18] DOJWA, K.: Czy Polacy są pacyfistami? Postawy i opinie Polaków względem wybranych kwestii podnoszonych przez ruch pacyfistyczny, „Zeszyty Naukowe Wyższej Szkoły Oficerskiej Wojsk Lądowych im. gen. Tadeusza Kościuszki", 2013, issue no 1, p. 57-70.
[19] WAWRZYNIAK, J. K., BASAK, W.: Terroryzm – międzynarodowe zagrożenie w dobie procesów integracyjnych, [in:] J. Maciejewski, M. Bodziany, K. Dojwa (editor) Grupy dyspozycyjne w obliczu Wielkiej Zmiany. Kulturowe i społeczne aspekty funkcjonowania w świetle procesów integracyjnych, Wyd. Uniwersytetu Wrocławskiego, Wrocław 2010, p. 456.
[20] PAWŁOWSKI, A.: Terroryzm w Europie XIX-XX wieku, Zielona Góra 1989, p. 9.
[21] Since that time to September 2014, the Public Opinion Research Centre has not conducted a survey on Poles' sense of threat of terrorism.
[22] Zagrożenie terroryzmem, CBOS, BS 78/2013, Warszawa 2013.

not lower than 67 %. In 1987, 80 % of respondents declared living in a peaceful neighbourhood, whereas in 1993, when the next survey was conducted, this figure fell to 67 %. In 2003, the percentage of respondents who declared feeling safe in the place of residence grew to seven positive assessments out of ten, and in 2007 – to eight out of ten. In the years 2012-2013, the percentage of respondents who did not feel in danger in the place of residence was 89 %.[23] In a 2014 survey, these percentages are almost identical. Security at the place of residence is declared by 90 % of the respondents, while threat – by 9 %.

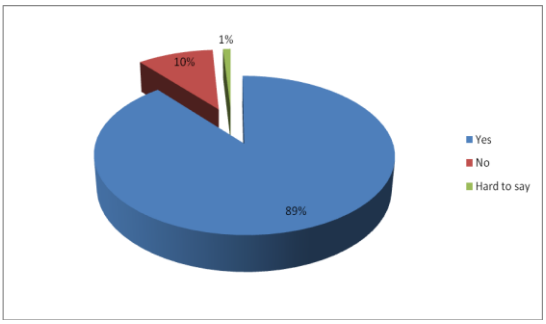

Fig. 4 Safety in the place of residence (2013)
Source:Bezpieczeństwo publiczne, CBOS, BS 63/2013, Warszawa : 2013.

In the light of survey results showing a relatively high sense of security in the country and even higher sense of security in the place of residence, respondents' answers indicating potential concerns about their personal safety may seem striking. In the 2013, 39 % of respondents declared being afraid that they might be victims to a crime, whereas lack of such concerns was expressed by 60 % of respondents. Although the percentage of respondents who aren't feeling insecure is higher, the result may be puzzling if we look at the opinions about feeling safe in the country and in the place of residence. In 2014, lack of fears was indicated by only 53 %, while 45 % of the respondents feared that they might become a victim of a crime.

At the same time, it's worth stressing that the current number of people expressing concerns about their safety is relatively high – in the previous years, it was significantly lower. For comparison, in 1996 it was 30 %, and in 2002 – 32 %.

It becomes even clearer when we look at the responses to the question about fear for the safety of the loved ones. In 2013, the percentage of respondents fearing for the safety of their loved ones is again lower than the percentage of respondents who did no express such fears (50 % and 48 % respectively). Earlier, we saw similar situation in 2007, when 52 % of respondents were not worried about the safety of their loved ones, whereas such concerns were expressed by only 46 %. These are two exceptions when the number of those not fearing for the safety of their loved ones is higher than the number of respondents expressing such concerns.

However, in 2014 the proportions changed. Only 43 % of those surveyed did not fear for the security the their closest ones, while 55 % of the respondents signalled fear. This means that the threat of crime has increased compared with 2013. Comparison of Police-owned statistical data for 2013 and 2014 will make it possible to verify whether this sense of threat was reflected in facts or not.

There are many factors that impact our sense of security or insecurity. One of them is personal experiences of an individual respondent. Were the respondents victims of a crime recently? 15 % of respondents declared that they had been a victim of theft within the last five years, 8 % experienced burglary, 3 % were mugged and robbed and 2 % beaten up or intentionally hurt, and 5 % became a victim of some other crime. In 2014, the situation is very similar. 16 % of those surveyed experienced burglary, were mugged and robbed or beaten up or intentionally hurt (3 %), while 6 % were a victim of a different crime.

A city can be defined as a type of a historically developed unit of settlement with high intensity of housing and services-related developments, whose inhabitants are employed in service and industry sectors and are characterised by urban lifestyles.[24] In contrast, in the countryside, the dominant type of activity is work in agriculture, the density is smaller than in the city, a characteristic type of social bonds is created, and specific characteristics of culture are present (strong role of tradition, lack of historical perspective: stable and unchangeable view of the world, emphasizing the authority of the elderly, conservative attitudes, clear distinction between us and them, distrust).[25] Naturally, the traditional rural society is undergoing changes and the term „the countryside" is sometimes replaced by „rural area", but there are still „hard" planes of the city and countryside differentiation, such as differences in income.[26] Thus, when analysing the empirical material, we will look at how the issues of safety are perceived by urban and rural dwellers.

[23] *Bezpieczeństwo publiczne*, CBOS, BS 63/2013, Warszawa 2013.

[24] KAJDANEK, K.: *Miasto i wieś – główne pojęcia i teorie*, [in:] A. Giza, M. Sikorska (editor) *Współczesne społeczeństwo polskie*, Wyd. Naukowe PWN, Warszawa 2012, p. 143.

[25] GORLACH, K.: *Socjologia obszarów wiejskich. Problemy i perspektywy*, Wyd. Scholar, Warszawa 2004, p. 16.

[26] ZAGÓRSKI, K., GORZELAK, G. JAŁOWIECKI, B.: (editor), *Zróżnicowania warunków życia. Polskie rodziny i społeczności lokalne,* Wyd. Scholar, Warszawa 2009.

For the purpose of reminding, 70 % of respondents positively responded to the question of whether Poland is a safe country, whereas 24 % expressed the opposite opinion. In terms of the division into the city/countryside, the lowest sense of security in Poland was observed among residents of cities inhabited by 101 – 500 thousand people, followed by rural dwellers. Both residents of small towns and largest cities (over 501 thousand), mostly responded that Poland was a safe country to live.

In a 2013 survey, the percentage of respondents declaring that their place of residence is safe and peaceful was 89 %, whereas 10 % expressed the opposite opinion. Respondents living in the countryside felt the safest (96 %), and those living in cities with 101-500 thousand inhabitants felt least safe (77 %). Sense of threat of becoming a victim of a crime was the lowest among respondents who were urban dwellers (9 %), and the highest – among inhabitants of small towns with up to 20 thousand people (12 %). Respondents who were rural dwellers least often declared that they had been a victim of some crime in recent years (13 %). With inhabitants of large (101-500 thousand people) and the largest (over 501 thousand people) cities, the situation looked different – here respectively 31 % and 32 % of respondents were victims of crimes.

It's hard to establish whether there is a simple correlation between a type of a unit of settlement and sense of security, but certain interesting relations can be noticed. Generally, rural dwellers were less often victims of crimes, were least concerned about their personal safety, and felt safe in the place of residence. The city, on the other hand, seems to be a place where an individual may become a victim of a crime and, as shown in surveys, he actually does. Nevertheless, inhabitants of the biggest cities claim that Poland is a safe country to live. This may be due to the fact that in Polish „metropolises", the police, as a security institution, is a common sight, which impacts the sense of security of the inhabitants, or people living in Warszawa, Lódź or Wrocław think of such threats as part of the „landscape" of their cities and are not surprised by them.

6 SENSE OF SECURITY IN THE LIGTH OF QUANTITATIVE RESEARCH

According to Poles, ensuring security is a fundamental function of the state. Surveys show that this function is successfully fulfilled in Poland, as currently two thirds of those surveyed declare that the country in which they live is a safe one. Earlier, this sense of security was even more widespread, but in the 1990s the situation was different. It seems that currently the sense of security in our country is high, but this doesn't exclude the possibility of its decrease as a result of the crisis taking place in the East rother reasons.[27] The case of the 1990s reminds us that the sense of security in a country is determined not only by the situation on the international arena, but also by internal issues.

The attempt to answer the question about potential threat of terrorism led to different conclusions. Depending on developments in other countries and Poland's involvement in anti-terrorism coalition, the sense of security was lower or higher, but most respondents indicated that they felt threatened in this respect. This picture may seem surprising, if we take into account both indications of Poland's inappropriate preparation for terrorist threats and lack of attacks, incidents or other events on the territory of our country. The last survey on the threat of terrorism was conducted by Public Opinion Research Center in 2013. Results of surveys conducted later, given the various terrorist incidents in 2014 or information about detention of CIA's prisoners on the territory of Poland, may show the increase in the sense of threat of terrorism.

"Local Poland", i.e. place of residence, was assessed by Poles as an area where they are generally not exposed to any threats. These opinions are relatively stable, but it should be noted that they are constructed differently than those referring to national security or degree of protection against terrorism. In the case of security at macro level, it is the result of a range of factors among which direct experience is of slight importance, whereas in the case of security at meso or micro levels, our own experience is of key importance. Therefore, in this dimension, we should not expect serious fluctuations, but we cannot also exclude changes resulting from certain conditions.

7 FINAL CONCLUSION

Safety, as one of fundamental needs of a human being, is situated in the area of responsibility of public authorities. In a democratic state, it is important that citizens not only are, but also feel safe. There is a range of factors that impact our sense of security – they include our personal experiences, experiences of our loved ones and acquaintances, and reports. Analysing public opinion surveys, we arrive at the conclusion that institutions responsible for security fulfil their functions, as Poles generally feel safe. Maybe the final conclusion would have been different, if the paper had addressed the issue of Poles' health security or

[27] Of importance are surveys of Poles' assessment of the influence of the conflict between Russia and Ukraine on security of Poland. Declarations show that over half the respondents are concerned about the impact of the situation in the East on security of Poland. Compare: *Zainteresowanie sytuacją na Ukrainie i poczucie zagrożenia w październiku*, CBOS, BS 144/2014.

social security, but it was not the subject of this discussion. Comparison of different surveys leads to a conclusion that the sense of public security in a broad sense was undergoing changes, whether in the context of political transformation or in connection with Poland's involvement in the conflict in Iraq, or in the context of joining NATO or the European Union.

The issue of the Crimea, Russia and Ukraine comes up in the opinion polls analysed, but – in the light of the results of surveys on the security of Poland as a country – it seemed to be temporal and did not affect the general perception of security. In comparison with 2013, the percentage of Poles who feel safe in their country has significantly increased. In September 2014, we know that the issue of Ukrainian-Russian relations has not been solved, thus there is still a question of how Poles will view the security of their country in next surveys.

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COMMON SECURITY AND DEFENCE POLICY – GENERAL FRAME WORK OF EUROPEAN COMMON SECURITY AND DEFENCE MANIFESTATION

Ovidiu-Gheorghe MOSOIU

Abstract: CSDP implies the existence of an operational capacity that starts with military and civil means, strongly reassured by the member states. EU could take action outside the European continent, not only for the benefits of the member states, aiming the pace keeping, the strengthening of international security and preventing the conflicts based on the UN Charter. Romania, as a member of NATO and EU has the obligation of complying and implementing the treaty provisions of which takes part in, within the internal laws.

Keywords: CSDP, treaty, policy, security and defense, missions, EU, OEU, military capacities, collective defense, forces and means.

1 INTRODUCTION

The phenomenon that unites and strengthens the European Community is EU integration through which EU Member States have decided to jointly exert some elements of their national sovereignty. The integration has been proved to be a lengthy process and involves community acquis application and following. Because of the legislative harmonization appearance presumed by community acquis, Member States or those wishing to join must implement the legislation: primary and secondary legislation adopted by the EU institutions, international agreements (EU being part of these), resolutions adopted by EU and never the least, the Common Foreign and Security Policy issue, published on the same time with the Maastricht Treaty (1992). CFSP allows member countries to come forward and to engage in full and common agreement in the world.

Europe's population has a good standard of living compared with citizens of other regions or countries from outside of the Euro-Atlantic area. People enjoy the external security and protection assured through the security system promoted by NATO and EU where the citizen safety is ensured by applying the common law of the decision makers[1] at the Member States level.

2 COMMON SECURITY AND DEFENCE POLICY – THE INTEREST'S EXPRESSION OF EUROPEAN MEMBER STATES IN THE PROCESS OF STRENGTHENING THE COMMON DEFENSE AND SECURITY

In EU, Common Security and Defence Policy is part of the Common Foreign and Security Policy, as that makes it possible to apply the principles of common security and defense. Although relatively new, it provides concrete ways of acting according to recent threats, dangers and duties established security institutions, in close contact with NATO actions and tasks of the allied states. Political procedures are intergovernmental, the political leadership is provided by the Heads of State and Government and financial problems are provided by national parliaments.

According to the consolidated version of the EU Treaty and EU Function Treaty, CSDP provides the existence of an operational capacity based on civil and military means, ensured by Member States through firm commitments. Multinational forces consisting of some Member States can be made available to the EU by the CSDP. EU act to the benefit of Member States but also outside of the continent in order to maintain peace, to strengthen international security and to prevent the conflicts in accordance with ONU. These undertaken external actions of the union respond for the political, economic and military strength, which define the global actors.

The current legal system does not yet provide the establishment and functioning of a common EU army, which, in my opinion would inevitably lead to the creation of a European federation. But things are ongoing and treaty provisions shows that gradually, considering the European Council decision, a Common Defense Policies can be harmonized separated for supporting the formation of an european army. Currently, each Member State has its own security and defense policy, whereby each state participates or does not participate to NATO common defense. CSDP does not intervene to modify these relations, therefore only common European missions are subject to EU policy, to which each states participate according to it ability, but in an organized and planned framework, with equipped forces, trained and evaluated according to commonly accepted rules. CSDP is compatible and complementary to NATO defense policy.

In the unlikely event when a Member State is attacked or represents the subject of military aggression on its territory, all other states under CSDP

[1] Judicial authorities, national and border police, constabulary and custom officers.

are required to support and assist it with all available means, respecting the ONU Charter, article 51.

The CSDP allows EU Member states, the most advanced in terms of fighting possibilities and pledged for performing more demanding tasks to realize a military permanent structured cooperation. Those states must apply in writing to the European Council and EU High Representative for Foreign Affairs and Security Policy, the willingness to cooperate under the circumstances. Council decision sets up this type of cooperation and establishes the participating states. Subsequently, depending on the specific situation, each Member State which notifies in advance its intention to be analyzed by the Council can participate at structured cooperation activities.

To accomplish a safeguard mission for EU interest, only a limited number of member states can participate. Missions which can be executed under the CSDP, anywhere in the world, are included in the Lisbon Treaty 2009 (and in the consolidated version of the EUT and EUFT): missions of combat forces in crisis management; missions for conflict prevention and peacekeeping; peace-building missions; disarmament missions; humanitarian and rescue missions; missions to provide advice and assistance on military matters; post-conflict stabilization missions; assignments given concrete support to third countries on their territory specialized counter terrorism forces. All these tasks can be executed with military and civilian forces and means available to the EU.

Any decision taken by the European Council that involves the use of common European forces and means has as a clear algorithm of adopting, using similar decrees of NATO Alliance, on a proposal of the member countries or the EU High Representative for Foreign Affairs and security. Later as the mission is in progress, its coordination is the responsibility of the EU High Representative and the political and military structures specially constituted (Political and Security Committee, Military Committee, Military Staff, the European External Action Service, etc.). Member States which have offered and which perform the action on the field regularly inform the European Council about the status and mission requirements to meet deadlines and mandate, eventually to supplement with forces and means if is necessary. Specifically, the military or civilian leadership process represents the subject of a detailed analysis separated.

The importance of the CSDP and the necessity of strengthening the European common security and defense was emphasized in the European Council framework during the winter period, 19-20 December 2013. With this occasion the call for Member States to reinforce cooperation in defense was repeated, in order to increase their capacity and ability to carry out military and civilian actions set out in the basic EU treaties.

The European Security and defense of states is currently based on NATO Alliance actions. This contribution focuses on individual Member States effort according to the possibilities and the percentage of GDP set. In the new geostrategic context, the US, the main contributors to NATO capabilities is reorienting their interest by Asia-Pacific, European common defense and security issue should focus on individual effort of Member States, by creating a defense policy which derives from the CSDP and becomes compatible with NATO policy.

The insufficient resources and lack of coordination of Europeans actions during military actions stood out during the Libya action in 2011, when these had to be completed by Americans although the initiative was European.

Common European security is similar to NATO and includes among others the security of citizens, cyber, energy, marine, economic, border, etc. This strong European security and defense ensures stability and peace in Europe's neighborhood but similarly influences the same things in the world in a multipolar world. Issues related to globalization, economic crisis, shrinking budgets for defense, crisis amplification in the vicinity of EU and NATO, terror attacks inside the Union[2], many European markets for different defense and equipping of Member States armies, are all causes that affect European reaction capabilities and possibilities in critical cases, showing also the necessity of a common defense policy consistent and effective.

Providing sufficient funds for investment system in the defense sector and modernizing specific technique, along with adequate training lead to the current revival of CSDP and civilian and military action. In this context, the European Council in December 2013 established more actions to be implemented in the final conclusions, organizing them in the following directions: "effectiveness, visibility and impact increase of CSDP; increasing development capabilities and strengthening the European defense industry."

EU honors its international obligations and commitments by participating in several civil and military operations[3] where many Member States are contributing.

Military and civilian capabilities set by the Headline Goals 2003 and 2010 should be improved and maintained in a state of efficiency. European rapid reaction force and battle groups should continue its training to enhance interoperability and probably should be used in the actions in order to assess their possibilities. It should be paid more

[2] Take into consideration the terrorist attack agains the newsmen of a magazine in France in 07.01.2015.

[3] EU operations happening around the world = 12 civil and 4 military.

attention to the same conditions for interoperability to improve the structures involved in decision-making and management / control of operations / missions. Option C2 (command and control) existing must be improved so as to increasethe contribution variant involving their use of EU autonomous. Given the CSDP issues, we conclude: in this stage, due to an increase crises tend to encircle the territory of EU countries, is necessary to improve the existing European military capabilities and establish new ones than those for NATO. The trend of gradual smoothing endowment European armies, EDA can have a positive effect on national defense industry by producing equipment, weapons and military equipment according to European requirements, in close cooperation with European partners.

3 DEVELOPMENTS IN TERMS OF ESTABLISHING CSDP

To better understand the situation CSDP (formerly ESDP) must describe the key moments that led to its base. This form of cooperation first Western European states to form a force with military purposes was established with the signing of the Treaty of Brussels on 17 March 1948 by Belgium, France, the Netherlands and the UK. Program on defense cooperation signed in September 1948 as a result of the Treaty, assumed the fight integrated air defense capabilities of signatories and a joint command structure.

In troubled times after the war, when people began to cluster around power poles, the great statesman Winston Churchill was the first politician who had a vision of a common army to support European integration. His view, was emphasized in the speech of August 11, 1950: "We must send a message of confidence and courage of the House of Europe to the whole world. Not only must reaffirm, as we requested, our membership in the United Nations, but we must make a gesture of practical and constructive guidance by declaring ourselves for our immediate creation of a European army under a unified command and which must play a admirable and honorable role". (Churchill, Duke, 2000)

Later, in 1950, the project European Defence Community (EDC) idea by René Pleven[4] appeared, in order to form a pan-European defense force as shield expansion and possible defense against armed confrontation with the USSR. This project should be part of Federal Republic of Germany, France, Italy, Belgium and the Netherlands. Unfortunately the French Parliament has not ratified the EDC project in 1952, as a result it was abandoned and the idea of a common European Security and Defence was postponed for a long time.

An important step in promoting the development of common defense in 1954 was the creation of a new organization - the Western European Union (WEU), which came into existence after the Paris Agreements, signed in October 1954. Basically after the Accession Conference of Germany and Italy the Treaty of Brussels, in September the same year, they set the coordinates of the new organization - the WEU. For the occurrence of WEU was especially involved UK which followed that the Association of European security and defense line to continue the line of intergovernmentalism, keeping the influence of important national interests in the main of defense and common foreign policy. Also the British retained their influence in European integration issues.

The Paris Agreements established the following objectives: to create in Western Europe a solid basis for economic development; mutual assistance in case of aggression against the territory of any of them; supporting the progressive integration in the Western European states (Department of Defence Policy and Planning, 2009). However these agreements expressed the Germany freedom of association, the finish line to the occupation imposed in the aftermath of the second world war for this country considered defeated.

After creation, the WEU had an important role in the cooperation process and to restore confidence between Member States after the war; has contributed to the integration of the Germany in the WEU and NATO; imposed in the control arms on the continent; engaged in solving the diplomatic process between France and Germany on the Saar region (now Land of Germany); continued to work until the appearance and official debut of CSDP, on the same time with decisions taken of the European Council held in Cologne (Koln), June 1999 and the European Council held in Helsinki in December 1999.

Maastricht Treaty, 1992 meant among other things setting a legal framework of the common defense and security by creating default CFSP, ESDP, the second pillar of the European construction, which had to be operationalized. Of course WEU had to react to the new provisions of the Treaty and in the same year, in June 1992 at the Hotel Petersberg in Bonn, Germany, the Foreign and Defense Ministers of WEU member sign joint statement setting out the famous missions organization type Petersberg: *humanitarian and rescue tasks, peacekeeping and tasks of combat forces during the course of crisis management operations.*

On the other hand, talks take place between representatives of the WEU and NATO to ensure during the transition, logistical support and C2 capabilities, needed to conduct independent operations by the EU while NATO is not involved. Arrangements have evolved so that adapting the concept of European

[4] President of the Council of Ministers of the French Republic in 1950.

Security and Defense Identity (ESDI) in NATO alliance was approved as a measurement of adaptation in the context of world events that marked the world. Also it is put into practice the concept of the Multinational Combined Task Force (CJTF) in order to facilitate implementation of operational measures to support the WEU and ESDI with NATO belonging military means.

Taking into consideration the latest news and changes that followed, the Cologne European Council was considered the strength of onset ESDP (CSDP). Coincidentally or not, in the same year but in December 1999, following the European Council held in Helsinki, the historic decision was taken for establishing an European military and civilian capabilities in the EU under the name Headline Goals ESDP 2003 - that Helsinki Headline Goal (HG 2003) to implement the Petersburg tasks using the EU Rapid Reaction Force that had to emerge until 2003. Things have evolved positively and commitments have been met in terms of quantity and quality correction will be made in terms of equipment. Meanwhile the US events of 2001 take place, the war against terrorists starts and EU-NATO relations acquire new meanings throughout the adoption in December 2002 of the EU-NATO agreements in Copenhagen (the "Berlin plus"), which facilitate EU access to NATO assets and capabilities in order to pursue independent missions and leadership by Europeans. Specifically these agreements are predicted: ensuring EU access to NATO planning capabilities in to conduct an operation; presumption of availability to the EU of NATO's collective capacities and capabilities; identification of European command options during the course of an operation DSACEUR EU recourse to NATO assets and capabilities. (Berlin plus agreements)

Following these agreements EU starts in 2003 and successfully conducted its first military operation known as Concordia in FYROM, and during the following year in December it is engaged in Althea operation in Bosnia-Herzegovina.

The beginning of XXI century is beneficial for EU security and defense because since 2003 the European Security Strategy (ESS) is developed, which increases the range of tasks to be fulfilled by EU forces in ESDP providing operations of disarmament and military assistance to prevent conflict and post-conflict stabilization operations. However it is emphasized the question of strengthening the international order and security including expansion in Europe's neighborhood. Subsequent to the development ESS, European Council in June 2004, it sets up rapid response capabilities (Battle groups), through the new global EU objective (Headline Goal 2010). It sought to improve the quality of structures for military action and their adaptation to new realities notified by ESS.

During the 2000s strategies regarding the fight against terrorism, internal security, human health were developed and in 2009, the Lisbon Treaty was signed, which brings significant innovations including the establishment of the President of the European Council chair, which is currently occupied by the former Prime Minister of Poland Mr. Donald Tusk and the High Representative of the union for Foreign Affairs and Security Policy, responsible for external representation of the Union, provided by Ms. Federica Mogherini, former Italian foreign minister.

4 CONCLUSION

The fragility of the system of regional security and even global, is highlighted by the crisis in Ukraine (started in 2014), a very important country for its geostrategic position.

The current challenges generated by the terrorist attacks in the heart of Europe (representing the radicalization of elements fundamentalist extremist actions), those in Paris, France - January 2015 show many question marks on the ability of EU countries to react to these types of attacks on the civilian population, respectively ensuring the safety of citizens. The novelty of this terrorism is that attackers aren't outside Europe, they were French citizens of Algerian origin who were educated in the spirit of Islam, Muslim but who were recruited by extremist organizations. The crisis that erupted in France can be a crisis throughout Europe which lately has not been given attention due to decreased level of alertness and budgetary allocations for defense sector the EU terrorist defence.

Is it possible to find a real conflict between the progressive Euro-Atlantic civilization and ultra-traditionalist Islamic civilization, under strong ethnic conflict. In Romania, legal instruments and laws called "big brother", relating to safeguard the individual conversations, PrePay cards, returned in the discussion to the competence institutions such as DNA, SRI, MI, DIIOCT, based on the events from France. By joining NATO and EU, Romania and other European countries undertook both benefits and risks arising from such membership.

Even if there are not currently identified major threats to national security, unconventional and asymmetric risks will require monitoring and effective countermeasures, in close cooperation with European partners and NATO. The vocation of the Romanian security provider will be manifested throughout its involvement in achieving regional stability, with the integration of Southeast European in the continental and Euro-Atlantic security architecture.

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