

NATIONAL AND INTERNATIONAL SECURITY IN A TIME OF GLOBALIZATION AND GLOBAL FINANCIAL CRISIS

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Abstract: The global security situation has significantly changed since the end of the Cold War and the bipolar division of the world. The fundamental changes in the global security environment have brought, besides a lot of positives, also a number of deformations, which have gradually started to assume the form of various asymmetric security threats. Occurring against the background of globalization and the ongoing global economic crisis, the emergence of new military and non-military threats is directly linked to the growth of requirements for national defense and security. As a result, national defense security, independence, sovereignty, combined with the protection of citizens' lives and property, belong to the basic roles which every state still needs to fulfill. For this reason, the author of the article deals with new security threats and analyzes the trends unfolding in the area of national and international security under the negative circumstances of globalization and the global economic crisis.

Keywords: Global security situation and environment, national defense, protection of citizens, military and non-military threats, globalization, global economic crisis.

HYBRID POWERTRAIN CONCEPTUAL DESIGN FOR UNMANNED GROUND VEHICLE

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Abstract: The paper presents conceptual model of powertrain system for UGV (Unmanned Ground Vehicle). The paper presents results of processed work in the own research feasibility study finished at TRL 2-3. UGV is designed for use in non-military crisis situations or in the military and security operations. Examined UGV (Unmanned Ground Vehicle) uses the modified TATRAPAN chassis. Serial hybrid powertrain with ZEBRA batteries is the main power source of UGV. In a series-hybrid system, the combustion engine drives an electric generator instead of directly driving the wheels. The generator provides power for the driving electric motors. In short, a series-hybrid is simple, the vehicle is driven by electric motors with a generator set providing the electric power. Engine is designed to perform across a wide range of operating conditions. The vehicle is equipped with two electric motors and can operate on and off road. The vehicle can carry a payload of up to 500 kg. The UGV can carry a wide variety of sensors, including video and thermal cameras. UGV can also be manually controlled by remote control system. Simulations were realized with presented powertrain.

Keywords: UGV, serial hybrid, powertrain, smart control system, sensors.

SUPPLY CHAIN OPTIMIZATION MODELS IN THE AREA OF OPERATION

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Abstract: Main idea of this paper is to choose both suitable and applicable operations research methods for military logistic support in the area of operation. Proposed model is based upon Combined Joint Task Force-7 data as the interim U.S. military formation in Iraq between June 2003 and May 2004.

Keywords: Supply chain, optimization, operations research, heuristics.

SECURITY IN EASTERN EUROPE FROM THE PERSPECTIVE OF THE EUROPEAN UNION

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Abstract: The European Union, having a common external border with the countries of Eastern Europe, i.e. Russia, Belarus, Ukraine, Moldova, is interested in not only the security of its borders, but also stability in the region. Hence the interest in the problems of Georgia. This article attempts to approximate the practical actions taken by the EU for the stability and security in Eastern Europe. The problems presented constitute a selected portion of the EU activity, taken in the interest of both the states of the region and the whole Europe.

Keywords: European Union, Eastern Europe, global and regional security.

ON THE SHIFTING BALANCE OF COMMAND AND CONTROL: A TALE OF THE GENES AND XENOPHON

Zoltán JOBBÁGY

Abstract: Despite Clausewitz's warning that the deduction of effects from their causes in war is always difficult, focusing on causality has always been at the heart of strategic thinking. Similar to the endless combination of possible cause-and-effect relationships in war also the properties of gene mutation can result in an almost infinite field of variants. In order to comprehend this problem biologist Sewall Wright introduced the *theory of shifting balance*, which has commonly become known as the *fitness landscape*. In this article the author takes advantage of Wright's evolutionary theory and reinterprets command and control (C2). He proposes three options for C2 such as *Confidence and Competence*, *Coping and Co-evolution*, and *Creativity and Change*. In order to support his argument the author goes back in history two and a half millennia and refers to Xenophon's famous book, *Anabasis*. By concluding on the findings he reflects this evolutionary approach to C2 on the background of the current technology orientation found in most Western armed forces.

Keywords: Causality, deduction, gene, mutation, biology, command, control.

MULTICULTURALISM IN THE MULTINATIONAL DIVISION CENTRAL-SOUTH INTERNATIONAL STABILITY OPERATIONS IN IRAQ (2003-2008)

Dariusz KOZERAWSKI

Abstract: In the report was presented the phenomenon of multiculturalisms occurring in the Multinational Division Centre-South in the Republic of Iraq in progress of activities of the Polish military contingent in years 2003-2008. The problem of the multiculturalism was introduced with reference to the national composition above-mentioned divisions, the environment of the local population with the regard of his influence on the cooperation within the framework of coalition forces and their relation with authorities and the local population in the area of the operating-responsibility. In the article were talked over also reasons of such juncture and the relation of themselves participants (soldiers) of the stabilization operation to this problem based on unique results of researches conducted by the author in the Republic of Iraq.

Keywords: Multiculturalism, social communication, Polish soldiers, international stabilization activity, local population, Iraq.

MODELS OF FORMING/ DEVELOPING THE INTERCULTURAL COMMUNICATION COMPETENCE. MODELS RELEVANT TO THE ROMANIAN MILITARY HIGHER EDUCATION

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Abstract: Forming the relational dimension of Romanian military personnel and not only of participants in international missions, represents a requirement for developing *l'esprit de corps* (fundamental characteristic of their professional profile), lay at the foundation of forming and strengthening convictions, contributes to shaping/reshaping military staff personality, its adaptation to various acting situations (including intercultural environments) and to the accomplishment of complex missions. Starting from these considerations, we found it useful to review the models of forming/ developing the intercultural communication competence, for a future formative design where the directions of developing the communication competence become evident. Byram's model inspired an adequate model of forming, the military system of education being easy to expand to the prefigured dimensions (knowledge, skills, attitude, education). This step must be continued with life-long training courses, respectively adequate selection and training of military personnel for international missions, together with position requirements and the development of cultural frame.

Keywords: Communication competence, intercultural communication competence, models of forming/ developing the intercultural communication.

CREATION OF NEC AS PART OF THE PROCESS TO IMPROVE THE QUALITY OF COMMAND AND CONTROL SYSTEM

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Abstract: It is important to understand the reasons which are behind the creation of Network Enabled Capability (NEC) as well it is important to know what were the historical reasons which led the decision makers to begin to look at the use of modern information technologies in the development of the command and control system (C2 system). This article is providing the view on the similar concept in the US Army named Network Centric Warfare (NCW) which is considered as one of the responses to the application of the intensively developing information technologies in the command and control system while seeking the better effectiveness and quality of C2 system. The article is as well attempting to explain the basics of NATO transformation and its impacts on the application of modern technologies to the Armed Forces.

Keywords: NEC, NCW, information age, effectiveness, EBAO, force capabilities.

THINKING ABOUT DECISIVE FACTORS OF THE ARMED FORCES DEVELOPMENT

Ján SPIŠÁK

Abstract: There exists a close connection between the security environment and relevant capabilities that the armed forces will have to demonstrate in future operations. Some thought of this article point on several decisive factors such global environment, threats and challenges that have had significant influence and impact on development of the armed forces. Between others there are security and operational environment with persisting asymmetry that in principle dictates the way of the training the armed forces need to follow to succeed in future operations. Nevertheless, primary role to cover all security challenges embodies in politicians, their comprehension of difficultness of current environment and taking optimal precautions for security policy of the state and society.

Keywords: Security policy, armed forces development, operational environment, asymmetry.

MODELING OF CHARPY TEST FOR STEEL C30E

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Abstract: In the paper it is presented an approach to simulate Charpy notch toughness test and estimation of toughness for steel C30E. A finite element program LS-DYNA was used to model the Charpy hammer together with specimen and power law material model for various temperatures. The material properties of the steel were determined by uniaxial pull test on standardized specimen and material model parameters were fit to the experimental results. The simulation results are compared to experimental results for accuracy.

Keywords: Notch toughness, Charpy test, failure mechanism, FEM.

GUNSHOT EFFECTS SIMULATION

Mário ŠTIAVNICKÝ, Peter LISÝ

Abstract: In the paper it is presented an approach to simulate gunshot process and its unmasking effects together with means to suppress it. A finite element program LS-DYNA was used to model gun barrel with the bullet in the air environment. Arbitrary Lagrange-Euler (ALE) formulation is implemented to describe the behavior of gases from powder propellant.

Keywords: Muzzle device, suppressor, gunshot, FEM.

ASPECTS REGARDING THE ROLE OF AIR FORCE IN COMBATING GLOBAL TERRORISM

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Abstract: Global terrorism poses a growing threat to the international community. The political, economic, and informational instruments of power play primary roles in addressing and eliminating the root causes behind asymmetric extreme risk events, but the military instrument will prevent some attacks and retaliate for others.

Air force (AF) is one of the primary components of the military instrument in the battle against terrorism and contributes to current counterterrorist (CT) capabilities by providing global mobility for special operations forces, air superiority to protect those forces, and precision strike capability to target terrorist infrastructures. It also provides intelligence critical to deterring, preempting, and answering terrorist attacks, and provides psychological operations support to help erode terrorist will and popular support.

The traditional role of AF in combating terrorism in different steps of application is presented. The analysis of possible future improvements in AF is essential to enhance the CT capability effectiveness.

Keywords: Global terrorism, Air Force (AF), counterterrorist (CT) capabilities.

KEY PRIORITIES FOR PUBLIC POLICY FOR THE ENVIRONMENTAL SECURITY IN THE ARMED FORCES OF UKRAINE

Inga URYADNIKOVA

Abstract: The main priorities of state policy of the Armed Forces of Ukraine in the field of environmental protection. Established that the environmental safety of Ukraine is not possible without the improvements of the organizational, legal, socio-political and economic mechanisms for environmental management, which should be based on modern methods of information and industrial technologies. It is shown that great attention should be given to training in the field of environmental safety for the stabilization of the ecological situation in Ukraine.

Keywords: Ecology, environmental security, the Armed Forces of Ukraine, the peacekeeping mission, environmental education.

ON CHINA'S INTERNATIONAL AND REGIONAL STATUS

Petre DUȚU, Cristina BOGZEANU

Abstract: In International Relations' area, states have different statuses depending on their economic, military, diplomatic, political and cultural power. Nowadays, emergent states, inclusively China, claim a new international status as a consequence of the changes which have taken place during the last decades in their economic, military and political development. A high international status implies assuming multiple responsibilities in all the areas on regional and international levels. As it has become the second world economic power in 2010, China considers that its regional and international status has to be acknowledged as a great power.

Keywords: Power criteria; impact; International Relations; economic power; military power; international status.

NATO IS SIXTY YEARS OLD

György SZTERNÁK

Abstract: In connection with the sixtieth anniversary of the foundation of NATO several remarkable articles and study papers have been published both by Hungarians and foreign experts. The objective of these works is to introduce the structure of the Alliance and its political and military activities in the past sixty years and the actions taken by NATO for strengthening European security. The present study paper is aimed at making an effort to present the political, economic, and military circumstances after the Second World War.

Keywords: Second World War, Truman Doctrine, Marshall Plan, Soviet Union, Berlin crisis.