

DESIGNING A VIRTUAL PLATFORM FOR ARMORED VEHICLES THROUGH THE PLM USING THE IDEF0

Vasile CARUTASU, Daniela CARUTASU

Abstract: Designing a virtual platform for armored vehicles aims to optimize certain stages of the plm (product lifecycle management). The most important objective of this study is to optimize (maximize) the value of the weapon system potential, one of the performance indicators that can be used to provide an optimum cost-effectiveness ratio. The IDEF0 method and the software igrafx allows us the representation of the design stages and the links between them, starting from the general ones to the detailed ones, no matter the order of depth.

Keywords: Virtual platform. PLM system. IDEF0 method. iGRAFX software.

BATTLE DAMAGE REPAIR ORGANIZATION UNDER COMBAT OPERATIONS

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Abstract: The paper presents a concept of a battle damage (expedient, temporary) repair organization under combat operation. The proposed concept was drawn up on the basis of allied and nation regulations and the study of battle damage repair systems which occur in the other NATO armies. When creating the mentioned concept there an assumption was made that battle damage repair system will be set in operation of current standard maintenance system.

Keywords: Logistics systems. Combat service support. Battlefield maintenance. Battle damage repair. Expedient (temporary) repair.

OPERATIONAL RELIABILITY AND THE SURROUNDINGS EFFECT

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Abstract: Operation of devices and machinery under various climatic conditions has an impact on determination of operational reliability parameters in designing, projecting and construction of devices and machinery. The work deals with determining the criteria of the special technique (selected electrical parts) operation under extreme conditions. The end of the work summarizes experiences by servicing and repairs of the special technique (selected electrical parts) under climatic conditions out of Europe.

Keywords: Reliability. Failure-free operation. Diagnostics. Climatic conditions.

CHOSEN ASPECTS OF MILITARY EQUIPMENT MAINTENANCE UNDER COMBAT OPERATIONS

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Abstract: The paper introduces a container workshop project of performing maintenance of The Czech Republic's land combat vehicles under field conditions. The presented workshop consists of two ISO 1C size range containers with special equipment. The first container is called a "working unit" and the other one is a "special purpose unit". During combat activities the containers would be arranged in L shape with rolled out roof. The article presents organization and technical conditions essential for implementation of the system of military equipment temporary repairs for military technical support's functioning. Furthermore, the article mentions such issues as unification and adjusting the equipment in a design and production processes, pro-active diagnostics, procedural conditionings, technology and temporary repair. Each issue is discussed considering possibilities and needs of temporary repairs system implementation.

Keywords: Logistics. Operation system. Field repairs of the military equipment. Telemetry maintenance system. Temporary repair. Container workplace. Battle damage repair kit. Combat service support. Maintenance of vehicles. Field repair.

MODELING AND APPLICATION OF THE ELECTRIC GENERATOR DRIVE THROUGH A VEHICLE MICROTURBINE FOR MILITARY SYSTEM

Viktor FERENCEY, Juraj MADARÁS, Martin BUGÁR

Abstract: Work describes current situation in field of use electric generators in military vehicles and systems. Describes real and concept applications of the combustion microturbines for drive electric generators. The main part of the work is focused on the cooperation of the combustion microturbine and the electric generator for military system, which represents Unarmned Ground Vehicle. The geometrical model in the program CATIA® environment designed is. Model, simulation and control algorithm for this serial hybrid drive is designed in Matlab/Simulink environment. The results of simulations and graphical outputs are evaluated.

Keywords: Combustion microturbine. Generator. Electric energy. UGV. Operation time.

ANALYSIS OF BLAST LOADED STRUCTURES

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Abstract: The paper deals with the analysis of structures subjected to blast load. Firstly are mentioned the sources of blast loading. It requires to know parameters of blast pressure wave, its effect on structure and to know the tools for the solution of dynamic analysis. There is described standards and codes background used for such loaded structures.

Keywords: Blast resistant. Blast wave. Blast load on buildings. Critical infrastructure. Dynamic analysis.

MODEL OF UNMANNED GROUND VEHICLE SUSPENSION COMPONENT FOR DYNAMIC LOAD

Ján DANKO, Martin BUGÁR, Juraj MADARÁS, Tomáš MILESICH

Abstract: The paper is focused on creating computationally effective dynamic model of suspension system damper mounting of unmanned ground vehicle, which contain all elastic properties corresponding to the real component. The first part deals with experimental measurements of damper mounting, which is excited by different frequencies. Modified Bouc-Wen model is used to modeling force-displacement characteristics. Mathematical models of the damper mounting are created according to the measured experimental data in Matlab/Simulink. In the conclusion the models characteristics are verified and evaluated by the measured data.

Keywords: Damper mounting. Silentblock. Bouc-Wen. Spencer.

INSURGENCY AND COUNTERINSURGENCY

Martin NIČ, Peter SPILÝ

Abstract: This paper analyzes a possibility of sending military forces of crisis management to the crisis territories on which activities of the insurgents take place. In addition, it analyzes insurgents' skills and tactics. This paper also deals with counterinsurgency principles and required skills of coalition troops to be sent to these territories. Moreover, the authors of the paper also analyze possible consequences of the operation for the Armed Forces of the Slovak Republic.

Keywords: Insurgency. Counterinsurgency. Security. Crisis management. Globalization.

LEADERSHIP IN THE MILITARY ORGANIZATION: HOW TO CHANGE THE RELATIONSHIPS IN VALUABLE INTANGIBLE ASSET

Piotr MALIOWSKI

Abstract: Throughout centuries leadership in military organizations has been a decisive factor as far as outcomes of military actions are concerned. However, in the age of massive armies and wars waged at the

beginning of the previous century its significance had been unfavorably reevaluated. Only the changes within military arrangement ending the previous century and expansion of relations with other armed forces of the democratic countries prompted the comeback of the old and proven values. It has been confirmed through attempts to transform the system of commanders selection, their education, development and perceiving leadership as intangible asset which significantly influences achieving goals set out for military organizations.

Keywords: Leadership. Tangible assets. Military organization.

SUICIDE IN POLISH POLICE FORCE IN BETWEEN 2008-2012

Piotr ZALEWSKI

Abstract: Main goal of this article is to present the phenomenon of suicides in polish police force in between 2008-2012. Problem is presented accordingly to a category of occurrence, age of the victims, seniority, type of corps service, manner and scene. Author touches on preventative measures the polish police force take in this matter.

Keywords: Suicide. Prophylactics. Police.