

ASPECTS REGARDING BY THE NETWORK ENABLED LOGISTICS OF MILITARY STRUCTURES

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Abstract: *Network Centric Warfare* it is a new concept developed by the USA and adopted by other countries in the same way or under other name, like as: *Network Enabled Capabilities, Network Based Operations, Network Enabled Operations* and others. *Network Centric Warfare* concept considered as a compulsory requirement, aimed to realize a network supported and integrated logistic system, that would ensure the flexibility, agility and supporting required by the combat forces. Increasing the rate of operations execution during the late global conflicts, where it have been engaged small units (which have become more and more versatile) on wide areas, will have a major impact on future logistics, we believe, and those units must be supported in a various range of solutions. Logistic units might be heavily dispersed in wide areas, all along extended and integrated LOCs; that will boost and increase the Logistic Network process. In the near future, the efficiency of the logistic support management will increase in importance through the development of the command and control systems in the decision-making process, at the operational forces management level, which has to be effectively related and integrated with the informational, command and control systems of the combat forces, in order to accomplish the objectives of the military action.

Keywords: *logistics support, network centric warfare, network enabled logistics*

1. INTRODUCTION

The concept of NCW (Network Centric Warfare - NCW) appeared publicly for the first time in 1998, at the same time with the work "Network Centric War": its Origin and its Future" written by the vice-admiral Arthur K. Cebrowski and John J. Garstka, director for conceptions and operations within the secretary of USA defense's office for the force change [1]. Once published, the following main characteristics appeared:

- going from emplacement to network,
- going from an individual to a part of a system,
- going from information to knowledge.

Furthermore, there are two additional extremely important aspects that would subsequently prove essentially in other professional works [2]: Speed of Command and Self-Synchronization.

The concept of Network Centric Warfare, being a general and flexible concept could be adapted to an international level in the following way:

- The Canadian army considers that NCW does not fairly approach the issues that are connected with the military operations other than the war and at this moment, it excessively focuses on technologies of the COTS (Commercial of the self) type and it highly points out a larger space, Global Informational Grid.

- Great Britain developed the concept of Network Enabled Capability.

- In Sweden, the concept was approached under the name of Network Based Defense, and it notably focuses especially on the opportunities of being inter-cooperative within a future coalition in order to attend defensive military operations or within other operations except for the war.

- NATO adopted the term Network Enabled Capability –NNEC and initiated a program of grounding and development of the concept.

In developing of the Network Centric Warfare (NCW), the precision of the force is given by both the techniques and achievements of the fighter and the technological advantages of the new type of war. The new informational technology covers the infrastructure and network in progress, offering an increasing viability, which implicitly means a greater ability for spreading action, not only in the physical area but also in the communication field.

The essential tendency regarding the revolution in the military area is that the future war should be carried out with less lethal forces, having the ability to fire intensely and precisely by fitting the launching and effective detection systems, and the ability to share information.

More specific, the new operational concepts included in the defense strategy are closely connected with the development of the new technological dimension of the revolution in the military area by means of the superiority of information and technological innovation. Everything will be found within the inter-arms capabilities and the joint force. Having probed the nature of the future conflicts through the project Army After Next initiated by the US land forces (US Army), we have the general view of what this would be after three decades, around 2025.

Among the most significant vulnerabilities, we could mention those generated by:

- Relationship in cases of major conflicts.

- Instability in the process of the turning data (physical values, objects, people) into information (concepts with logical meanings) by means of analysis.

- Inaction in performing self – synchronization.

- Imbalances between relative high expenses of performing the Network Centric Warfare and the lowest expenses necessary to counteract it [1, 2].

2. THE REQUIREMENTS OF THE LOGISTIC SUPPORT COORDINATION IN NETWORK CENTRIC WARFARE CONDITIONS

Logistics and especially the structures in charge for logistics support of the armed forces in war seriously need to create the most capable system of communication. The leaders have to make sure before planning their military operations that logistic support is integrated within the network. There are taken into account many requirements for securing/ assertion of the logistic structures with mobile means that allow them to keep in touch with army on the move, in order to secure an effective logistics support in time. These have already meant something else than the logistic support based on the requirement or automatic detachment hereupon of the planned expenditures.

- **The general unique image of the situation.** This aspect can become crucial for securing the command of the operational objectives within the integrate range of the performed military operations that took place in a continually changing area.

For a further improvement of the Network Enabled Logistics (NEL), the general unique image has to be kept and should have access to the historical data of the situation and of the whole context of the past operations.

- **Management capability force.** The outlook of the future logistics specialist as manager of the capabilities of the future military structures will be that of integrating the objectives of change the modes in which they will operate in the future. He will also appreciate the parameter of the force capability as the sum of all modular components of effects devices, missions, tasks that are actively organized in order to accomplish the superior's intention.

- **Logistics precisely dimensioned.** The unique image allows a global perspective of the battlefield including the non-combat military operation related to the CO's intention. Furthermore, this can lead to the development of the local optimization of the logistic support by means of rules and flexible dynamic relations, implemented by the Network Enabled Logistics operators as logistics precisely dimensioned.

- **The command and control adjustment in the dynamic of Network Centric Warfare.** This allows the whole activity of the command structure and control to be fitted in with the operation activities, information and logistics. This makes the dynamic adjustment of the evolution of the superior's intention to the tactical, operational, strategic situation, to the medium and also to the dynamics state of the army, the logistic capability and resources. When they are applied in military operations, these flexible, dynamic activities can be suitably coordinated, work together and communicate among themselves, and can also significantly arise the capability of the army. Thus, they can answer to the events and changes in: status; environment, the state of the army, the CO's intention.

- **Speed and effectiveness versus quantity and effectiveness.**

- **The full visibility over the whole logistics patrimony.** NEL will create, maintain and make use of information/ standard records regarding materials, and the interrelationships among them in order to gain a development of the logistics resources database.. The NEL extensions towards a full visibility and through transit of the patrimony determine the logistics information level for the development of their own spectrum of potential resources.

- **The cognitive support of the decision.** NEL covers the cognitive support of the decision belonging to both: logistics operators and its operators through the system capacity to turn data and logistics information into relevant and comprehensible knowledge.

- **The proactive anticipatory logistics.** It covers the demand and the logistics support detachment towards the users. It is directed by the events, data, information analysis, accumulation and procession of knowledge.

- **Kinetic and potential logistics: the capability to support the whole range of military operations.** NEL must support the current operations, as well as those that are unpredictable. This proactive logistics support, adjustable for the whole range of military operations, whether in time of peace, war or crises, for all the forces that are involved, fully or in transit, is indicated as kinetic logistics- in transit, otherwise said as linking logistics [3].

3. CONCEPTS OF THE NETWORK ENABLED LOGISTICS

A recent review elaborated by the Office of Force Transformation-OFT of the US armed forces marks the fact that nowadays, there is an actual debate among military experts to determine the possibilities of the logistics of sensing and responding (the Sense and Respond Logistics Capability SRLC).

These concepts, that support SRLC, try to focus on what is expected from the logistics, namely, the replacement of the linear delivery chain with one in the network that should easily solve the communication difficulties from the area.

- **Solid and reliable logistical support.**

In this respect, one considers that there is an imperative need of taking into account of certain innovative solutions for dealing effectively with the logistics support necessary for the fighting troops. The decision factors of the logistics area must identify and minimize all the risks of commercial failure, as a consequence:

- of high centralized distribution,
- reliability of some considerable delivery sources,
- the overestimated trust in a major supplier.

In this respect, when the dependence on the date distribution and the information appeared there, it must be developed a technique for protecting them in order to secure trust in the operational structures of command.

- **Logistics support management.**

During preparing and performing the military operations, the role of the logistics support management consists of stocking according to types of materials for securing logistic support of the army forces. The necessity of logistics support derives from the need of maximizing the efforts in certain directions that are considered essential in the economy of fighting actions.

- **Logistics support command.** The early getting into action will determine intended forces for this purpose to be made up only military personnel. This requirement focuses on the level of proficiency is able to integrate within the Defense Supply Chain.

But the adopted solution must keep the armed forces in action, having the abilities in this regard, to be quick and to be gradually efficient and to be operational and make up of modular elements.

- **The support capability of the challenges due to the planning suppositions.** The need of logistic support of the operations undertaken simultaneously by the forces dislocated in the same Joint Operational Area performed in competition with the logistics support requirement necessary for the forces that are dislocated in other Joint Operational Area will become private challenges for logistics.

Representing a minimum, this fact will impose the storage of a certain stock of capabilities that will be able to assure the need of logistical support in this particular situation. This feature is relevant for logistic support of many forces which develop operations in JOA, separated at the same time for keeping an integrity of the defense supply chain in more Joint Operational Area simultaneously.

- **Network –enabled capability (NEC).**

The foundation of NEC is represented by the unit marked within the process of command and control, using sensors in order to gather, communicate and use information to allow the system of attack to work fast and “to deliver” the appropriate effects.

NEC shares the doctrine opinions of the American concept about NCW that is ready to translate the superiority of information into power force. At the same time, NEC does not try to place the network into the core of the capabilities through doctrinal plan that involves it.

NEC is more concerned with the development of the capabilities through the achievement of a coherent structure of interconnection of the sensors with the decision makers and the battle systems. NEC is going to maximize the military capacity by the means given by the superiority of the information. In this respect, NEL represents the logistics community contribution of logistics community to NEC.

The attributes and the strong points of the logistics network focus on the following aspects [4]:

- The logistic support within the network should be dynamic
- Relations should be permanently negotiated
- The network is hard and it is difficult to attack
- NEL supports the reconfigurable operations.

4. THE EVOLUTION OF THE LOGISTIC SYSTEM IN THE ROMANIAN ARMY

Lately, especially after our country has been accepted in the North Atlantic Alliance, the Romanian army, in its whole and especially the logistic structures have been crossed a period marked by deep changes and transformations, in which the outstanding features given by the process of the adaptation of its own structures to the NATO requirements. In the logistics area, the purpose of harmonizing the relationship between the management structure and the execution one (joint logistics commandment, logistics structures belonging to the army forces and the military teaching institution) was to debate on the conceptual level and to make a military logistics system operational, rigorous in functioning, that is going to become a modular one, capable of offering to the armed forces all that is necessary for fighting, when the Romanian army became more and more part of the military operations of the North Atlantic Alliance [3, 4].

5. CONCLUSION

The essential aspects, for the logistic integration of the Romanian army in the future architecture of the network that would be achieved are:

- The necessity of achieving fighting structures by offering logistics and fighting support of modular type, adjustable and flexible and maneuvering, with a great capacity of reaction, as well as, keeping the units operational during peace and providing the necessary resources for the state of the war.

- A continuous development process of the military logistic system so that it becomes integrated itself, flexible, functional, and able to provide the logistic support at the appropriate place, in required timeframe, as easy as possible and the lowest cost, as well as the requirement to ensure inter-operability with logistics system of other NATO members.

- Making external activities that are defined by the functional field of the military campaign.

- Making progress in co-operation and co-optation in technical modern programs and military equipments of some companies from industry which have remarkable performances in this area.

- Achievement of a strong, effective and fine management in the logistics area.

According to the tasks assumed by our country, as a member of the North Atlantic Alliance, it is possible that the future would impose attending military operations at significant distances. Thus, it would be necessary for the forces that will act in the Joint Operational Areas, where they should reply to many asymmetrical challenges, provided by the operative and tactical areas, different from those of typical war known up to now and to distribute the logistics support within the network.

In this context, it is obvious that it should take into account the evolution of the Defense Supply Chain, if this can demonstrate enough flexibility and swiftness to the troops' requirements, if such complex operations can be supported, and if it is fair to reanalyze the structure of the logistics support.

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