

## LOGISTIC SUPPORT OF POLISH MILITARY CONTINGENTS – SELECTED ISSUES

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### **Abstract:**

*The logistics system of armed forces is a military organisation consisting of management units as well as logistic sections and facilities which are interrelated. It has infrastructure which is adequate to the conducted processes and possessed resources, it conditions the transformation of logistic resources into logistic processes. It allows particular logistic resources to efficiently use time and space and hence perform functions related to logistic support by a given system<sup>1</sup>.*

*The article titled “Logistic support of Polish Military Contingents – selected issues” focuses on general rules of logistic support, possible implementations, planning and coordination. The article gives a definition of logistics and its message. It also encompasses information related to inventory stocks philosophy and ways of keeping stocks. It also presents the characteristics of principles used in logistics in foreign operations.*

### **Keywords:**

*logistic system, logistic doctrine, logistic support and its conditions*

## INTRODUCTION

Active participation of the Polish Army in international efforts to establish and keep peace in various parts of the world can boast of over half a century long tradition. It was started in 1953 and its range increased with changes in the Polish foreign politics and political and military situation in the world. The character of military actions undertaken by Polish soldiers also changed. The current involvement in the process of peace actions of the military contingents of the Polish Armed Forces is increasingly

more related to fighting against asymmetric threats, good examples of such situations are the Iraqi and Afghan missions.

## 1. GENERAL PRINCIPLES OF LOGISTIC SUPPORT

Polish accession to the North Atlantic Treaty and the European Union obliged Poland to involve the Polish Army in various operations abroad. As a result the organisation of logistic support becomes more complex. The determinant which influences the effectiveness of the logistic system is the fact that actions are undertaken in various parts of the world, in varied climatic and natural conditions.

The general rules of the logistic support of the Polish Armed Forces are defined by e.g. the Logistic Doctrine. Being the most important document specifying logistic regulations in the army, it presents procedures necessary to manage logistics in the Polish Armed Forces, including cooperation with the logistics of NATO command, NATO member states and international organisations supporting the logistics of the Polish Armed Forces in the state of war, peace or crisis. It is also used in operations involving states which do not belong to NATO and operations conducted by the United Nations Organisation, the European Union and Organisation for Security and Cooperation in Europe.

The doctrine encompasses the following issues:

- logistics management;
- materials, technical and medical facilities; transport and movement of troops. It also encompasses procurement and contracting services, logistic infrastructure, financial management and logistic resources management.

The following principles are used in logistics:

- operation priority;
- responsibility;
- competence;
- cooperation;
- coordination;
- provision and sufficiency;
- flexibility;
- availability;
- up-to-dateness;
- frugality;
- transparency;
- synergy<sup>1</sup>.

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<sup>1</sup> General Staff of the Polish Armed Forces, *Logistic Doctrine of the Polish Armed Forces DD/4*, Warsaw 2004, p. 13-14.

*Operation priority* aims at ensuring that operations are conducted in accordance with commander's orders, as then logistics is integrated and makes a cohesive organisational structure with the operating unit by developing temporary logistic groups to meet the requirements of the current operating situation.

*Responsibility principle* means that member states are responsible for the logistic support for forces in multi-national operations, however, particular countries maintain responsibility for the security of the developed national forces and can define the way in which they should be fully protected, it is the so called collective responsibility which assumes that the commander accepts responsibility for the security of units in his disposal.

*Competence* aims at maintaining the combat ability of forces at the previous level, commanders need to have full powers allowing them to use logistic resources for the purpose of using the forces and maintaining their combat ability. This power of attorney must be consistent with responsibility, which means that if a commander takes responsibility for operation in a given area, he must have appropriate competences to establish the rules related to logistic support, this refers to both commanders from NATO member and non-member states.<sup>2</sup>

Due to the character of contemporary operations, an important principle is the principle of *cooperation* used in the national and multi-national system. It can encompass all aspects of logistic support including: finance, budgeting and contracting, this is especially important when operations are conducted in cooperation with non-members states, which requires a very precise division of responsibility taking into account national capabilities and legal provisions<sup>3</sup>.

Another rule is *coordination* whose goal is effectiveness of logistic support. It can be increased by coordination of operations at all levels, it may also be necessary to establish liaison teams at various organisational levels for the purpose of efficient information flow.

*Provision and sufficiency* are principles according to which the state has to ensure an appropriate level of logistic stocks to protect its forces. The national logistic stock levels must ensure combat capability.

One of the more important principles is *flexibility*. When developing an operational plan, one has to take into account that some events can change its concept and enforce a change of plan. As a result during the preparation of a plan it is important to quickly react to changes in the operational situation. The principle takes into account the introduction of unexpected and non-standard scenarios<sup>4</sup>.

The principle of *availability* ensures the flow of logistic information and should be characterised with simplicity and explicitness, it should minimise the occurrence of

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<sup>2</sup> Ibidem, p. 13.

<sup>3</sup> Ibidem, p. 13.

<sup>4</sup> Ibidem, p. 13.

misunderstandings and ensure that operation is conducted according to the commander's expectations.

The development and efficient implementation of working logistic structures requires coordination and planning, and this in turn is provided by the next principle – *up-to-dateness* which states that the most important phase of logistic support is preparation and beginning of operation as well as early dispatching logistic elements to the operation area, before positioning operating forces.

A very important principle is the principle of *frugality* which aims at collecting resources in amounts necessary to meet operating requirements and using them in an efficient yet economic way. The need to develop a system to collect, analyse, process and synthesis data as well as ensure their controlled flow between military and civilian organs can be satisfied thanks to *transparency*.

The last principle is *synergy*, i.e. a combination of a few logistic rules simultaneously, this allows to achieve the best results. Multi-national logistic support in an operation should be directed to maximum use of the logistic capabilities of states – operation participants. The efficiency of multi-national logistics requires cooperation of the states participating in it<sup>5</sup>.

As part of allied and multi-national operations the system of logistic security of armed forces can act in multi-national logistics. As a consequence a part of this system will be devoted to logistic functions in a multi-national system, which is in accordance with the interoperativeness principle of logistic elements and structures. The size of logistic potential which will accompany the forces will depend on the composition land forces units and its goal is ensuring task performance regardless of situation<sup>6</sup>.

## 2. LOGISTIC SUPPORT CAPABILITIES IN PRACTICE

The logistic doctrine of Land Forces described a number of possible ways of ensuring logistic support for a mission. Basic possibilities are presented in Figure 1.

The capabilities of international logistic support will be determined by time-related situation assessment and the planning process.

The first element in logistic support is *national responsibility*, i.e. taking responsibility for ensuring the security of the army. The rule applied immediately when the troops are moved, when this is the only possibility to guarantee the logistic security during the initial phase of the operation. In subsequent phases, if only there is such a possibility, the system should be transformed into a multi-national one, even if the state sending troops implements this logistic support element only as an option of national responsibility, the NATO commander is responsible for the coordination of the whole logistic support of the operation<sup>7</sup>.

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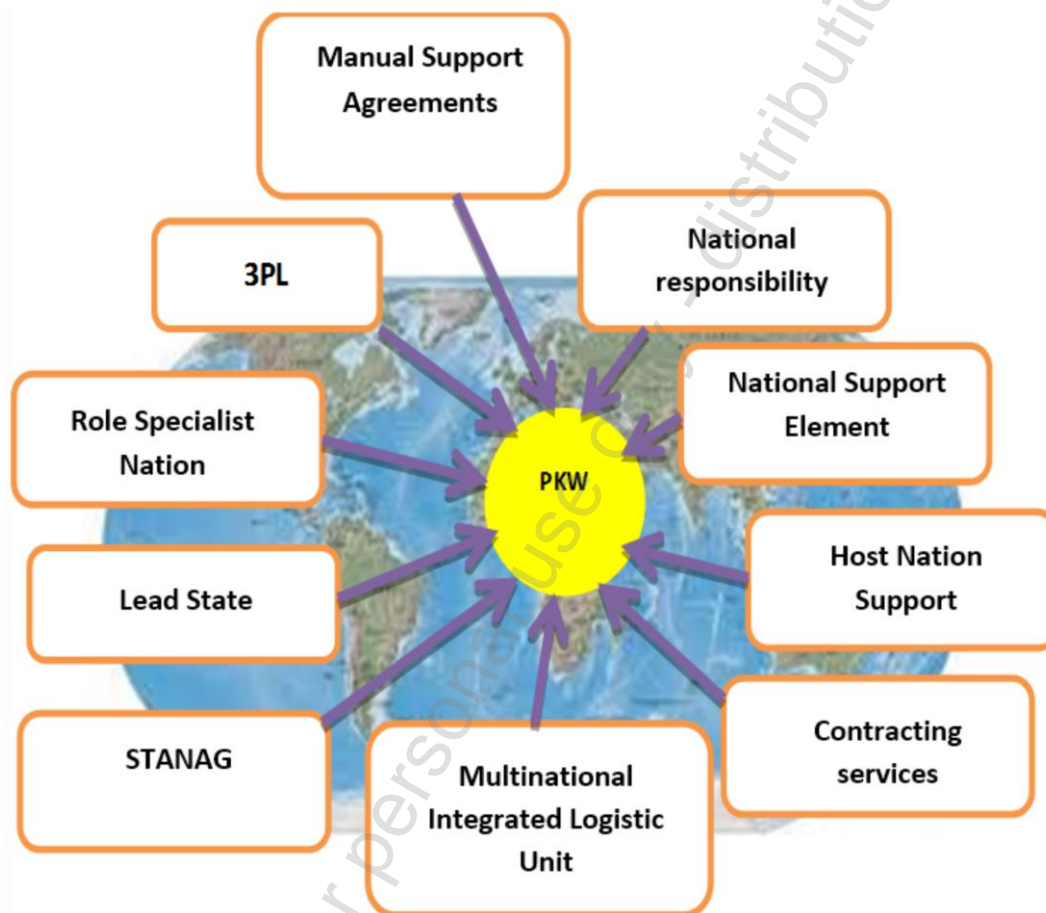
<sup>5</sup> Ibidem, p. 12-13.

<sup>6</sup> Ibidem, p. 13.

<sup>7</sup> Ibidem, p.16.

Another possibility is the National Support Element which is responsible for the coordination of tasks related to materials for the contingent. "It can be positioned in or outside the Joint Operations Area for the purpose of creating a connecting link between the Lead Nation and the furthest extended troops. The nation sending troops must guarantee that NSE activity is consistent with the NATO commander's intention and the concept of operation".<sup>8</sup>

The Host Nation Support (HNS) is civilian and military help offered by the host nation during peace, crisis and war. Help is rendered to allies and organisations which are positioned and conduct operations in the host state or are transferred across its area. Such actions are conducted pursuant to agreements between the host nation and nations sending troops and/or NATO<sup>9</sup>.



**Fig. 1.** Ways of ensuring logistic support for a foreign mission

Source: Own study based on DD/4.

<sup>8</sup> Bodziany M., Czuba R., *Logistic Support of Polish Military Contingents – Organisational and Procedural Aspects*, [in:] "Zeszyty Naukowe Wyższa Szkoła Oficerska Wojsk Lądowych im. gen. Tadeusza Kościuszki Journal of Science of the gen. Tadeusz Kosciuszko Military Academy of Land Forces", No. 4 (146) 2007, p. 193.

<sup>9</sup> Dictionary of National Security Terms, Warsaw 2008, p. 169.

*Contracting services* is a necessary tool used to provide armed forces with weaponry, materials and services, it is conducted based on plans. A typical situation occurring in operations conducted outside Article 5 of the Washington Treaty is the situation in which local provisions are limited or even using them is forbidden and coordination rights related to using these resources in a given state are also limited. Forces positioned in the military operation theatre can be burdened with obligations to sign contracts with local or non-local suppliers of services or other benefits for the purpose of using all available supply sources<sup>10</sup>.

For the purpose of performing specific functions the *Multinational Integrated Logistic Unit (MILU)* is formed when two or more Sending Nations agree to act under the operating control of the NATO commander to provide logistic assets to multi-national forces. The unit is organised to perform specialised functions assigned to particular national forces or which can be performed better according to the logistic support plan of a given operation. This option is preferred when one of the sending nations is able to ensure the main elements of the unit with the command system, the units can later be added to other subunits to form one whole entity<sup>11</sup>.

An important role in support capabilities is played also by the *Lead Nation (LN)*. The state which plays the key role in preparing HNS arrangements, which form a part of the planning process, together with other involved states. The Lead Nation is responsible for the management and coordination of particular functions or actions involving the forces of two or more countries or commands during the performance of tasks.<sup>12</sup>

*The Role Specialist Nation (RSN)* encompasses distribution and supply of a certain class of provisions or logistic services for some or all international forces. Such responsibility is taken by one state which reports to the commander of forces for performing a given logistic support related function for all or some international forces. The unit organising these functions, regardless of its subordination in the international chain of command, should be treated as a unit of international forces and should be subordinate to at least tactical command of a given NATO commander.

Another possibility related to logistic support is a contractor, i.e. *Third Party Logistic Support Services*. It is defined as “using previously planned civilian contracts to perform selected functions of logistic support. The goal of introducing a commercial partner is assigning some logistic support related tasks to another entity, which guarantees that the Commander will perform his task and it also optimises the use of supply sources which thanks to this can be used efficiently and economically<sup>13</sup>.”

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<sup>10</sup> Hajt S., *Optimisation Concept of Logistic Support Processes in the Polish Military Contingent – the Use of Synergy and Optimisation*, [in:] “Zeszyty Naukowe Wyższa Szkoła Oficerska Wojsk Lądowych im. gen. Tadeusza Kościuszki Journal of Science of the gen. Tadeusz Kosciuszko Military Academy of Land Forces”, No. 4 (146), Wrocław 2007, p. 183.

<sup>11</sup> Ibidem, p. 183.

<sup>12</sup> Dictionary of National Security Terms, Warsaw 2008, p. 97.

<sup>13</sup> Hajt S., *Optimisation Concept ... op. cit.* p.184.

The option which comes one before last are the *Manual Support Agreements (MSA)*. It is usually connected with HNS, this option is beneficial when the sending nation has a small contingent positioned with the forces of the state which has capabilities to perform a given function to its benefit. Thanks to joint logistic activity as well as sharing resources and services, the states can achieve economic benefits on the scale of the logistic operation. Such a benefit can be for example simplicity of signed agreements and their fast implementation. It is essential that NATO commands have general knowledge about agreements so as to enter into them as part of the general concept of the developed logistic support plan.<sup>14</sup>

A very important element in logistic support is *Stanag NATO*. Incorporation of the national logistic support system into the multinational system requires the agreement to share control of important logistic support functions with NATO Commanders. As a result it is necessary to be technically interoperative in logistic support areas, this agreement shows a solution related to NATO members politics and standards. It creates an environment for logistic support areas.<sup>15</sup>

The participation of Polish military contingents in foreign operations means that logistic services have to meet high expectations. One should pay special attention here to material support whose goal is ensuring continuous supply and well-being services.

There are five supply classes in the Polish Armed Forces:

- class I – food consumed according to established standards regardless of local changes in operational conditions, e.g. terrain, it encompasses fresh food, tinned food, drinking and utility water;
- class II – supplies standardised by position, entitlement tables and regulations defining the amount of combat assets and materials for the so called registered numbered equipment – uniform elements, weaponry and electronics, vehicles, technical materials;
- class III – fuel and lubricants for all purposes except aviation;
- class IIIA – aviation fuel, oil and lubricants;
- class IV – supplies such as construction and fortification materials;
- class V – combat assets<sup>16</sup>.

The basic documents which defined the principles of logistic support in NATO operations are: *Allied Joint Logistic Doctrine AJP-4 (A)* and the *NATO Principles and Policies for Logistics – MC 319/1*. Pursuant to the above mentioned documents, the above principle is binding also in situations when joined responsibility for the whole logistic task conducted in allied operations is taken by NATO command and managements organs as well as the participating states.

<sup>14</sup> SG WP, *Logistic Doctrine ...*, *op. cit.*, p. 18.

<sup>15</sup> *Ibidem*, p. 18, 19.

<sup>16</sup> *Ibidem*, p. 26.

The goal of activity related to materials supply is ensuring that the forces receive weaponry and military equipment, combat and material assets, they must also be provided with logistic material services which are necessary to perform particular tasks. The rules of materials supply are based on general military logistics principles as well as particular rules such as: supplies delivery, supply flexibility, using local resources, restocking, local supplies<sup>17</sup>.

Technical support is purposeful activity aiming to use efficient or even faulty equipment to create such organisational and technical conditions which will allow to weaponry and military equipment in the most efficient way<sup>18</sup>. It encompasses servicing, reconnaissance, repair, weapons and military equipment evacuation, spare parts and exploitation materials management. The above tasks are started and continued after the contingent reaches its operation destination as long as the movement of forces from their host country to the area where they are supposed to perform tasks is conducted wholly by rail, air or sea<sup>19</sup>.

According to primary sources regardless of allied and operating conditions, the process of technical support has the following universal characteristics:

- the lowest organisational levels (battalion, company) provide technical services allowing to repair faults which can be removed by a repair platoon (repair team/section) and prepare faulty equipment to be evacuated to repair centres;
- full-time repair sections develop particular logistic equipment and their evacuation structures are assigned to raise repair funds;
- surplus repair funds are evacuated to higher repair organs.

The direct organisers of technical support for military units belonging to the Polish Military Contingent at all levels of command are technical sections which are a part of troops (departments, units) J(G)-4, S-4 as well as logistic commands and sub-unit staff. The circulation of documents related to materials turnover and supplies for the Polish Military Contingent troops having particular service, repair and evacuation capabilities.<sup>20</sup>

Transport support for PMC is one of basic elements which ensure timely movement of troops and their positioning in the operation area, supply continuity and logistic services.

The need to coordinate the planning process of the movement of troops as part of the alliance results from the following conditions:

- limited availability of strategic transport means leading to the necessity to make joint efforts to meet operational needs;

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<sup>17</sup> Ibidem, p. 28.

<sup>18</sup> Ibidem, p. 29.

<sup>19</sup> Bodziany M., Czuba R., *Logistic Support ...*, op. cit. p.192.

<sup>20</sup> *Materials Management Regulations in the Polish Military Contingent*, No. 1016 of 6 March 2002, p. 8.



- multinational character of contingents positioned in the in the area of operation;
- necessity to ensure flexibility of operating connections participating in the operation, which contributes to the increase of the quick troops movement ability<sup>21</sup>.

In accordance with the rules which are binding for NATO members, the state which assigns troops which become a part of multi-national forces is responsible for ensuring for them means allowing them to be positioned in regional bases, regroup and position in the area of the operation as well as withdraw after it is over. To achieve this goal, agreements are signed with the NATO military authorities and there are also detailed coordination agreements between the allied states during the operating planning.

There are similar procedures in the case of operations organised by the European Union. However, in operations conducted by the United Nations Organisation each state covers transport expenses and they are later returned form the organisation budget.

The tasks in particular encompass the following:

- coordination and management of regrouping allied contingents to the operation area taking into account the agreements and requirements made by its commander;
- preparation of necessary agreements;
- management of selected transport and civilian facilities used to move the allied forces<sup>22</sup>.

Transport i Movement of Forces is an element of the logistic support of armed forces, it encompasses all actions related to the movement of forces and loads excluding transport tasks connected with accepting, reforming related and further movement of forces<sup>23</sup>.

The planning and management of the movement of forces during a crisis or war fall under the responsibility of the Joined Movement Coordination Centre. It can be supported (if necessary) with the representatives of military and civilian organisational units. The centre coordinates its tasks in agreement with competent transport institutions<sup>24</sup>.

Medical support of the forces during a military conflict encompasses:

- preventive treatment;
- treatment and evacuation;
- sanitary and hygienic tasks;

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<sup>21</sup> Ibidem, p. 10.

<sup>22</sup> Ibidem, p. 11.

<sup>23</sup> Logistic Doctrine of Land Forces (DD4.2), Warsaw 2007, p. 53.

<sup>24</sup> General Staff of the Polish Armed Forces, *Logistic Doctrine of the Polish Armed Forces DD/4*, Warsaw 2004, p. 33.

- sanitary protection of soldiers from the consequences of using mass destruction weapons;
- medical equipment and materials supplies<sup>25</sup>.

Medical evacuation (MEDEVAC) is a transport of the wounded and ill and providing them with qualified medical care at particular levels of care *Role*. The operation environment, the length and quality of evacuation roads as well as the availability of evacuation means are determinants of the construction of the medical evacuation system<sup>26</sup>.

In the MEDEVAC answering system a very important element is proper assessment of the condition of the injured (in a situation when there is a larger number of wounded it is necessary to have segregation rules and priorities) and the very beginning of the action is most often conditioned by preparation and ensuring the security of a helicopter landing area. The whole procedure is based on appropriately formulated and unified report, usually nine pages long. The MEDEVAC report defines:

- coordinates of landing and accident place;
- frequency and cryptonym of a radio station at the landing place;
- number of injured;
- specialist equipment;
- number of patients to be evacuated;
- landing area security;
- landing signage;
- nationality of the injured;
- area contamination resulting from the use of weapons<sup>27</sup>.

### 3. PLANNING AND COORDINATION OF THE LOGISTIC SUPPORT SYSTEM

*Planning* is a management element consisting in taking decisions on actions, which would not exist independently of planning, and are related to particular phenomena.<sup>28</sup> The phenomenon in all operation types, during peace, war or crisis, always follows the same procedures. This refers to both functioning in a multi-national system and in a national one in one's own country.<sup>29</sup> A number of issues are taken into account in planning, some more important ones encompass involvement of civilian and military authorities, using materials, logistic services and means of transport belonging to them as well as HNS.

<sup>25</sup> Ibidem, p. 34.

<sup>26</sup> Ibidem, p. 74.

<sup>27</sup> Milewski R., Stankiewicz G., *Medical Evacuation – MEDEVAC*, [in:] "Zeszyty Naukowe Wyższa Szkoła Oficerska Wojsk Lądowych im. gen. Tadeusza Kościuszki Journal of Science of the gen. Tadeusz Kosciuszko Military Academy of Land Forces", No. 3 (149) 2008, p. 26, 27.

<sup>28</sup> Comp. Coyle J.J., Bardi E.J., Langley Jr. C.J., *Logistics Management*, Polskie Wydawnictwo Ekonomiczne, Warsaw 2007, p. 134.

<sup>29</sup> GS PAF, *Logistic Doctrine ..., op. cit.*, p. 53.

The logistic planning process is started already in the preparation phase of contingent movement to the planned peace mission and it is continued over the period of the mission until the decision to finish the mission in a given region is made and the forces are to return to their country. Planning encompasses: logistic and economic reconnaissance, logistic situation assessment, drafting security plans and IT services.

*Logistic reconnaissance* is aimed at collecting as much information on logistic infrastructure (hotels, warehouses, workshops) as possible. This information can be during a mission. Another important element is the economic situation, i.e. a possibility to purchase goods on the local market, possible tax allowances.<sup>30</sup>

One more crucial element in the planning process is *situation assessment* which allows to define to what extent national logistics can use the help of other contingents participating in the mission. However, financial matters related to the mission are tackled by the financial and banking support. It deals with remuneration, purchasing, travel expenses, financial advice and soldiers' insurance. Such matters can be pursued on the territory of a third state which offers favourable regulations and conditions related to taxes, customs, procedures and exchange rates.

In civilian logistics the journey planning process should take into account a logistic perspective of supplies, manufacturing and distribution. There are various definitions of supply in literature and they can be interpreted in a few ways especially from the action perspective. Its basic definition encompasses gaining raw materials, other materials, intermediate products necessary for the manufacturing process (in a manufacturing enterprise) or finished products (in a trade enterprise).<sup>31</sup>

When talking about supply in a wider meaning of this word, one should also take into account supply with investment goods and everything that is necessary in an enterprise for its proper operation.<sup>32</sup> Another factor in the planning process is production, i.e. using various raw materials, other materials, technical equipment and services to make products satisfying the needs and requirements of customers.<sup>33</sup> The goal of this process is ensuring an optimum flow of materials and information in the manufacturing process. The increase in the importance of the customer's role in manufacturing processes results in a change of an earlier rule: „make a product and look for a buyer” into „find a buyer and manufacture to meet their needs”. This is why two systems were created: Just-in-Time and kanban (Japanese: signboard or billboard).<sup>34</sup>

The Kanban system is based on the necessity to maintain high quality of components and finished products, it maximally reduces the time of preparation and finishing

<sup>30</sup> Bodziany M., Czuba R., *Logistic ...*, *op. cit.*, p. 194.

<sup>31</sup> Comp. Kowalska K., *Procurement Logistics*, Akademia Ekonomiczna w Katowicach, Katowice 2005, p. 9.

<sup>32</sup> Comp. Dembińska-Cyran L., Jedliński M., Milewska B., *Logistics – Selected Issues to Study the Subjects*, Uniwersytet Szczeciński, Szczecin 2001, p. 104.

<sup>33</sup> Comp. Sztucki T., *Marketing Encyclopaedia*, Agencja Wydawnicza Placet, Warsaw 1998, p. 14.

<sup>34</sup> Comp. Jansen R., Hertlein M., Kurs 2000 – Logistics in the 90's – Requirements and Solutions, *Storage and Transport Issues* 1992, a special brochure.

phases and also minimises the number of production batches. The system is based on the sucking rule and uses two types of Kanban cards. The first of them is the *flow card* (movement and transport). It is a signal to move one bin from a sending nest (manufacturing) to the receiving nest (using). One card is responsible for a standard number of parts (components, products) defined for a given bin and two nests cooperating with each other. The other card is the *Manufacturing card* which signals immediate manufacturing of a certain defined number of parts (components, products).<sup>35</sup>

Logistic decisions refer to adopted development plans for production, inventory policy, ordering process, selecting transport and locating storage bases.<sup>36</sup> Planning in an enterprise is performed by managers or the most experience employees. Planning in a supply chain requires basic knowledge of stock levels, storage, transport, manufacturing, supply and distribution, so as to be able to look form a broader perspective at correlated planning decisions, assess risk and possible consequences and impact on the financial result of the enterprise.

A very important goal of planning logistic decisions is: reducing capital input, customer service level and cost reduction. Starting with reducing capital input into investment, one can achieve shorter return on investment periods in the planned undertakings. A frequently used method here is the “*just in time*” method (JIT) which aims at increasing the efficiency and flexibility of the manufacturing process through maximum reduction of stock levels before and during production, maximum shortening of the production cycle.

The JIT method considers a technological process as one element in a chain whose parts form a whole organised from the perspective of the last element of the logistic chain.<sup>37</sup> Customer service which requires decisions connected with product sales is significant in this system. It encompasses cash sale, internet banking, credit cards, instalment purchases, sale with a trial period during which a client can return the product and pick another type of a product. Other forms of making products available to customers, such as leasing or lending are also taken into account. A client should be informed about product specifications, its unification and any additional accessories.

A client needs to be informed about product servicing which should encompass a guarantee period in case of some hidden defects which were not noticed during a product acceptance procedure and also support offered during the use and operation of a product. If service is by company own service centres, the logistics department will have to supply them with spare parts, exploitation materials, etc. It will also be necessary to ensure service information circulation.<sup>38</sup>

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<sup>35</sup> Comp. Banasiewicz W.M., *Manufacturing Logistics Management*, PowerPoint presentation.

<sup>36</sup> Comp. Gołemska E, *Logistics ...*, *op. cit.*, p. 30.

<sup>37</sup> [online]. [available: 06.02.2010]. Available on the Internet: <http://piotr-kuras.w.interia.pl/jit.html>.

<sup>38</sup> Dwiliński L., *An Outline of Company Logistics*, Oficyna Wydawnicza Politechniki Warszawskiej, Warsaw 2006, p. 35.

Cost reduction means minimising variable costs related to movement and storage of products. The best strategy is searching for the best localisation for storage facilities or transport service forms.<sup>39</sup>

In the planning process each part of this system is related to the company strategic plan, each activity is performed at three levels: strategic – longer than one year, tactical – shorter than one year and an operating level: daily, hourly.

In each case the basis of planning are four factors defining the key logistic activity, they encompass: characteristic features of a service or product, demand volume and structure, logistic costs and supply prices policy.

The characteristic features of a product encompass its weight, shape, package type or value. From the point of view a consumer facing a shelf in a shop, packaging should allow to easily recognize a product and its specifications. For a manufacturer fighting to increase his market share it is also equally important to distinguish his product from other ones or – in the case of dishonest competition – making it similar to a selected brand. When decisions are made the informative and promoting functions are most important to build a credible relationship between the manufacturer, the product and the target customer group.<sup>40</sup>

The volume and structure of the demand for logistic products are particularly important when making strategic decisions related to the distribution of storage facilities. It is enough if there is uneven distribution of demand in sales points within one year to cause a significant cost increase in one or a few elements of the supply chain due to improperly used storage area.<sup>41</sup>

Logistic costs include labour input expressed in money, means and objects of work, financial expenses and other unusual events caused by the flow of material goods in a company or between companies as well as stock level keeping.<sup>42</sup>

The significance of price politics at the stage of supplying raw materials and components results from the fact that it takes into consideration negotiations related to including or not including transport costs in the price of goods, these costs are transferred to the subsequent elements of the supply chain, however, most of the participants want to influence their level.<sup>43</sup>

Logistic coordination in the military system is defined as negotiating the efforts of various units or subunits on an operating or tactical scale for the purpose of more efficient performance of joint tasks. The essence of the coordination of actions is integration and unification of the efforts of all forces subordinate to a given commander in a particular area in the right order, this integration consists in taking maximum advantage of

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<sup>39</sup> Comp. *Ibidem*, p. 30.

<sup>40</sup> [online]. [available: 06.02.2010]. Available on the Internet: <http://www.swiatmarketingu.pl>.

<sup>41</sup> Comp. Gołemska E., *Logistics ...*, *op. cit.*, p. 33.

<sup>42</sup> [online]. [available: 09.12.2009]. Available on the Internet: <http://www.easylogistyka.com>.

<sup>43</sup> Comp. Gołemska E., *Logistics ...*, *op. cit.*, p. 36.

all opportunities of particular forces, contractors to achieve a specific goal. It also encompasses determining the right contractors and dividing tasks between them according to their specialisations and potential. Coordination must meet the following conditions: organisational units must be hierarchically subordinate to supervisory command which will have the necessary authority over subordinate units, actions must be performed by forces consisting of minimum two organisational units and the supervisory command.

An element which is closely connected with coordination is synchronisation, i.e. coordination of the efforts of the forces in time and space, its essence is performance of particular tasks within one grouping to achieve a particular goal. All actions require precise coordination and synchronisation for the purpose of rational use of all available forces and combat assets for mutual support in combat. Achieving smooth logistic support and avoiding incurring mutual losses are two factors which integrate the efforts of forces conducting operations under one command, application of both of these factors in operations leads to the attainment of the planned goals.<sup>44</sup>

Coordination also defines tasks for each element of a grouping according to their capabilities and action specifications, it forms a platform for cooperation between different elements of a combat group. It is achieved through elements of coordination of actions, such basic elements are: lines, objects, points and regions.

The goal of coordination in civilian logistics is optimisation of the whole supply chain, starting with the supply stage and finishing with delivery to recipients. It is necessary to make plans for units and conduct an ongoing inspection of their performance. Coordination should provide all information necessary for the company management. Most often to achieve the improvement of logistic activities some attempts are made to minimise the number of suppliers and storage facilities, analysis of own transport fleet (it is often cost-effective to resign from one's own fleet and outsource transport services) or also product standardisation. Entrepreneurs hope that coordination will help them to maintain the right inventory levels, transparent costs and results as well as minimisation of logistic costs.<sup>45</sup>

The most important controlling functions encompass: planning, cost control, deviation analysis, purchasing management planning, transport, movement of materials, building financial indices structure, manufacturing and sale planning, manufacturing control. Logistics is related to the whole activity of an enterprise, this is why the right analysis of this element of company management gives an opportunity for real improvement company operation.

Coordination of logistic activity should have a twin-track character: the first track is lateral coordination focused on suppliers, company and clients. The other one is vertical coordination between all planning, management and performance levels.

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<sup>44</sup> Land Forces Command, *Regulations of Land Forces Operations*, Warsaw 2008, p. 265.

<sup>45</sup> [online]. [available: 06.02.2010]. Available on the Internet: <http://www.controlling.info.pl>.

According to Weber there are two groups of factors influencing the range of coordinating activities. The first are complexity factors, i.e. the number of materials, manufacturing levels of a given product, activities related to their manufacturing, number of customers on the market. The other group encompasses dynamic factors which define the degree and frequency of changes of the above mentioned values.<sup>46</sup>

The role of a logistics inspector is developing such mechanisms which will allow to maintain balance between the lowest possible costs and efficient achievement of the whole company's goals.

Adopting a new logistic system is the basis for its implementation, it is necessary to develop an implementation plan, most often radical changes in the existing logistics service are not introduced so as not to interfere with day-to-day operation. Preparation of a new logistics system requires appointing a person who will manage the whole implementation. This person should create a working group. Implementation stages will encompass changes in the organisation of logistics service and the way of performing tasks. The plan should include the goals of the subsequent implementation stages. After each stage one should assess results and if there is such need, the implementation plan should be amended. Reasons for differences between goals and results should be analysed as this will significantly facilitate avoiding failure in later work. Implementation of such a plan often requires organisational changes in a company. Many organisational units of the existing logistics service can become a part of a new system, however, divisions, tasks and relations between these units must be re-established<sup>47</sup>.

Reorganisation of the logistic system can be conducted using *business process reengineering*, i.e. a business concept assuming introduction of radical changes in business processes. The goal of these changes is achieving maximum efficiency of the organisation and cost reduction. The goals of reengineering are similar to the logistic ones which aim at improving ancillary processes in a company, BPR is directed at basic processes. Logistics provides resources for basic processes from client's perspective, however, it does not participate in them itself.

Reengineering means not only improvement of basic processes, but also logistics, which is often connected with the introduction of a new logistic system in a company. It is necessary to persuade employees that there is a need for changes and that they will improve their situation and the company. The most important element in this process is the client who does not know the company organisational structure, how it operates or its management methods and can only see products and services he or she receives. The client agrees to pay for work which shapes the quality of products and services. These are exactly the clients to be a decisive factor in company's survival, hence they should be offered the highest quality products and services. After the implementation of a new logistic system, it is necessary to compare goals with results, as very frequently not all goals are achieved, so it is necessary to find the differences and

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<sup>46</sup> Comp. Griffin R.W., *The Basics of Organisation Management*, Wydawnictwo Naukowe PWN, Warsaw 1998, p. 584.

<sup>47</sup> L. Dwiliński, *An Outline ...*, *op. cit.*, p. 49.

assess if the newly implemented system needs improvements and if yes then what improvements would be needed<sup>48</sup>.

## CONCLUSION

The issue of logistic support of the military troops of the Polish Armed Forces abroad is becoming very significant. It is one of the key requirements connected with the operating and strategic capabilities of troops participating in peace and stabilisation operations. Tasks of this type have become a part of the catalogue of actions the Polish Armed Forces have to always be ready for. Soldiers do their service in extremely difficult conditions – not only geographic and climatic ones but also psychological ones – they are far from their homes and relatives in countries representing different customs and culture where every gesture or word must be made or uttered with great caution and where danger is everywhere. First and foremost one should know their military job, be courageous and have knowledge of the surrounding world. A soldier going on a mission is the ambassador of Poland in the world and after coming back home – the ambassador of the world in Poland<sup>49</sup>.

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<sup>48</sup> Ibidem, p. 50.

<sup>49</sup> Comp. Paszkowski M., *Officers of Dispositional Groups – National Security Aspects (professional staff in peace operations)*, Wrocław 2008, p. 118.



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