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EDITORIAL BOARD

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SECURITY AND DEFENSE

COMBAT POWER DETERMINATION METHODS FOR TACTICAL LEVEL MILITARY STRUCTURES

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Any military operation must be planned taking into consideration "quantity" and "quality" of forces. These forces must be "set up" and organised and used in operations according to their "combat power" at the specified place and time. Only if there is a correct analysis and "determination" of combat power these forces can have a chance to win.

Keywords: combat power; combat potential; distructive means; informational capabilities.

Combat power is a concept that must be understood and applied from the smallest tactical level military structure to the highest level, the strategic level. Generally, combat power, as a feature of a military force, is usually expressed through an index that is a refference element in relation with a similar military force from enemy forces.

Combat power is that physical condition of a military force given by organization, equipment, trainning level and the approach of tactics, tehniques and procedures applied at this level. A better explanation of the combat power concept is that it represents "the total means of destructive, constructive, and information that a military unit or formation can apply at a given time"[1].

Distructive Means

Combat power has eight elements: leadership, information, mission command, movement and maneuver, intelligence, fires, sustainment, and protection[2]. All these elements are contributing to form and increase the military forces combat power.

The level of military structure combat power refers to the fact that the military forces structures where the combat forces and combat support forces are used, combined, in an efficient manner, they can reach at a specific time or for a specific period of time, a certain physical and dynamic condition that will give the force the capacity of fight and thus it will accomplish its mission. In this way, the efficiency of a military structure can be quantified or evaluated using the *combat power* and *combat potential.*

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Going further, the combat power has an important element that is defining a military structure as a useful force, and this is its potential to fight. Each one of military structure element has a specific weight that is used to form for the force a specific combat potential.

The difference between the combat power and the combat potential is related to the manner they affect the fighting situation. If a military structure element is affecting the combat situation it is contributing to form the combat power, otherwise is just a combat potential.

The combat power of a military structure or force is generated from the right way of using the combat potential in the right moment and at the right place. The combat power must be applied in the weakest enemy point or area.

The combat potential[3] of a military force is an index that reflect in an agregated manner the lethality (the possibility of causing losses and destruction to an adversary force) of all weapons and vehicles from the force organization, taken as amounted and weighted.

The combat potential of a military force, in national and foreign military dedicated books, has two parts: the projected combat potential and the available combat potential.

Designed or *projected combat potential*[4] is a nominal potential based on how a force is designed and the environments and threats it is designed to be used against. The projected combat potential is a phisycally status of a combat capacity or a combat capacity with no damages resulted from an interractions with the enemies or other battle perturbatory events.

Available combat potential[5], incorporates all the real-life degradations to which a force may be subject to. All interractions of the military force with its opposite military force, factors, malfunctions of different systems or interferences among own military forces that may occur in the battlespace influence on its effectiveness combat capacity and most of the time through decreasing its combat power. These can include a large spectrum of variables like shortages of equipment and materials, less effective supplying system, low level of personnel morale, inappropriate way of applying the tactics or techniques in the battlespace and many other kinds. In other words, the available combat potential is the real power that a military force has before the actions, events or environments effects on it start.

The higher the available combat potential the higher combat power of military force is. Any decreasing of it must be avoided and if not possible the commnader must take steps in order to have it at the desired level. These steps can include both resupplying with manpower and equipments at that specific time and the tactics and tehniques that maintain the available combat potential and also the combat power at the planned level for accomplishing the mission.

The combat power level indicates the right time and place to use the military force in the battle and also the enemy force combat power that can be faced or fight against.

All the time of calculating the combat power index for our forces we must calculate or estimate in a realistic manner the enemy force combat power index. There are some risks in calculating the combat power index, especially is not provided the updated information on the enemy force in the time and place we want to fight against.

There are some methods to calculate the comabt power index for a tactical military force.

A tactical military force using the tanks forces and combat support forces in operation leads to an increased combat power for this force and as a result it will be used for a longer time than a usual force. As a plus the morale of this force will be at a higher level. As long as the tanks and the combat support forces are at a higher lever than the enemy ones, the combat power will be at a higher level and the possibility of succes will be higher.

As an example, a superiour combat power of a military force can be obtained trough the combining the tanks with infantry and the combat support forces in the military operations of land forces. Because the tanks, alone, cannot end in victory, they must be used together with other specialities like infantry and combat support forces, so that their mobility and firepower be at the highest value possible and battlespace controled by fire by all own forces.

If, for personnel is more difficult to calculate the potential and the combat power, for equipment and systems have been identified and developped, over time, some specific methods and tehniques.

In the military literature there are methods for determinating the military combat power at a tactical level. I suggest the analysis two of them, the *classical method*, using the *principle of force ratio,* that means the military force are configurated depending on the enemy force quantity. This method is based on the quantitive force ratio that must exist in planning a military force in a military action or operation.

The *principle of the force ratio* refers to the fact that in a military operation you have to ”accumulate” or have available a certain number of structures with a certain number of means of fire and military equipment which once used in battle are able to overtake the enemy's, respectively, to overcome the critical point of enemy forces and thus to ”survive” those of the enemy, and at the end to achieve success.

A written form that makes a better understanding of the conditions between the superiority or inferiority of forces and the tactics or techniques that can be used in the battle was given by Sun Tzu: ”It is the rule in war, if our forces are ten to the enemy's one, to surround him; if five to one, to attack him; if twice as numerous, to divide our army into two. If equally matched, we can offer battle; if slightly inferior in numbers, we can avoid the enemy; if quite unequal in every way, we can flee from him. Hence, though an obstinate fight may be made by a small force, in the end it must be captured by the larger force”[6].

More accurately, we can say that without having in a military operation an equal or greater number of forces and means of fire than the opponent has, we can not defeat the enemy. The defeat of the enemy can not be attributed to the luck, the inspiration of the commanders or the mere presence of the forces on the battlefield; it depends to a great extent on the number, quality and way of using the forces. Superiority, and above all, technical superiority or, better known, the quality of military forces is a prerequisite for achieving success on the battlefield, and between superiority in forces and means, and achieving success, a report can be established, even if it is at first sight empirical.

When organizing forces for battle, we must not consider exclusively when it comes to achieve success. Regarding the principle of force ratio, which is only a factor leading to victory, Clausewitz stressed that "/.../ This number will therefore determine victory. Now from the number of things above deducted to get to this point, it is shown that the superiority in numbers in a battle is only one of the factors employed to produce victory that therefore so far from having with the superiority in number obtained all,..." [7]. So, military planners must consider this principle as a component part of the use of forces in combat, and not as a main one. Of course this principle has its advantages and disadvantages.

This principle can be successfully used when the technical and tactical possibilities of their own forces are to some extent similar to those of the enemy forces. Here we are referring to the fact that national military forces are endowed with combat technology and weapon systems that perform well and compete with those of an hypothetical enemy.

As an example, we can take an offensive operation in which the enemy forces have at their disposal a number of *n* tanks and anti-tank assets. To be successful when planning an offensive operations we must calculate that for each number *n* of tanks and antitank assets forces of the enemy our force will be a military structure that has at least a number *n*x3 tanks and means of mobile fire antitank. Even so, due to the influence of terrain factors and weather conditions, it is possible that this number *n*x3 or more tanks and anti-tank assets available not be enough to achieve the desired final state. Over the time, several battle reports have been identified.

According to FM 5-0, 2010 edition, the historical reports that are considered in planning by US Army forces in military operations, are as in the Figure 1.

Own forces mission	Position	Own forces/ Enemy forces
Delay		1:6
Defense	Prepared or fortified	1:3
Defense	Hasty	1:2,5
Attack	Prepared or fortified	3:1
Attack	Hasty	2,5:1
Counterattack	Flank	1:1

Figure 1. *The minimum historical reports considered in planning by US Army forces in military operations*

In addition to planning this number of fire assets, we will have to "add" other forces to that force structure to meet our offensive objectives, including engeneering forces, land artillery, and air defense artilery.

As a conclusion, on the offensive operation, it is necessary to ensure the superiority of forces and means of fire in order to achieve the enemy defense breakthrough, and on the defensive operation is required a ratio of forces that allow rejection of the opponent's offensive and taking over the initiative.

In conclusion, the method of determining the combat power by applying the *principle of the force ratio* is used when the military structures of the force are approximately the same as those of the enemy.

The second method for determining the military structures combat power applies *equations* and *mathematical models* to configure the structure of military combat equipment and fire assets, sufficient quantity but, above all, qualitative for their successfully use in combat.

These equations and mathematical models, if properly applied, can guide both planners and military decision-makers in the decision-making process. These can be used when the parameters or factors to be entered into these equations or mathematical models can easily be determined or are already identified and quantified, and time at the disposal of forces is not enough to go through another planning method. These mathematical relationships can be applied to direct military actions executed by ground level tactical forces and give results based on a logical reasoning that is transposed into them. What is important for military planners is that they must get information about the parameters or factors that are taken into account from safe sources and not by approximation or estimation.

Among these, *the Lanchester*[8] equations that can guide planners and commanders with regard to the organization and use of forces, so that their combat power be greater than that of the enemy.

These equations are mathematically simple and represent the military concept of concentrating the effort and showing what happens when two military forces concentrate their forces and fight.

Thus, a Lanchester equation, modified and adapted by foreign military specialists, can determine at some point, in a direction or in a strip area, the ratio between the amount of tanks forces of their own and those of the enemy. This helps military planners to compare the combat power of their own forces to those of the enemy, and sets up an index called the model *of the correlation of forces*[9]. The size of this index will allow planners to understand better the tactical situation and choose the direction, line or ray where enemy forces are vulnerable, inferior qualitatively and quantitatively, so the enemy can not give effective resistance to own military forces.

This equation also provides an understanding of the benefits of the relative value of quality over the quantity in a battle. It can be applied in the process of mission analysis to battlegroups using tanks due to the fact that the parameters of analysis and comparison are their tanks and their own structures versus tanks and tank structures of the enemy. The value of this index must be, mathematically, greater than number one value in order to plan and successfully use tank-based battlegroups on a particular direction or strip area.

The following equation is a derivation, an extension of Lanchester's N-squared equation, where N represents the military forces that have tanks or other direct aiming firearms in the organization. This equation shows thre result of who will win a fight with a *direct engagement* with forces based on the size and full effectiveness of the opponents. Because it shapes direct fire aiming, it is known as *aimed fire model*[10]. The model of the aimed fire assumes that opponents can see each other, and therefore can engage fire and destroy.

The equation is represented as:

$$X = \frac{(n1 \cdot P1) \times N1^2}{(n2 \cdot P2) \times N2^2}, \qquad (1)$$

where:

- X is the force correlation index;
- $N1$ is the number of tanks for own forces and N2 is the number of tanks for the opponent;
- $P1$ și $P2$ are the opponents' probability of destruction (PK) (they are expressed in percentage form and simplified by 100 to ease the calculation, respectively, 0,8 means that the probability of destruction is 80%);
- $n1$ și $n2$ represent the maximum firing rate of the tanks cannons of each part (expressed as an integer representing the number of missiles executed per minute by a tank).

A calcul on the number of tanks necessary for own forces to be used against the opponent's forces is shown in the table below:

In Table 1, I calculated data for three variants of forces organization and the distribution of their own forces tanks to explain the force correlation index modification and implicitly the ratio of forces. Specifically, the more we increase the number of tanks of our own forces, the higher he index value is. Mathematical modeling and simulations are needed to be done in order to get the most realistic picture.

This index of forces correlation must be, mathematically, overhead number one value to allow the planned action to be performed with a good result. If it is under the value of number one value, the own forces must take actions to make the index positive or greater than number one. These measures consist of additional forces, the execution of maneuvers of forces and means at a higher intensity, long distance fire engagement by artillery with a higher level of accuracy, harassing enemy forces or other actions that diminish the enemy's combat power and the number of tanks. Once these measures are carried out and the value

Table 1

COMPUTATION OF THE FORCE CORRELATION INDEX

OWN FORCES		Offensive			Defense		
		Option 1	Option 2	Option 3	Option 1	Option 2	Option 3
n1	Shooting rate	6	6	6	6	6	6
P1	Probability of hitting	0.8	0.8	0.8	0.8	0.8	0.8
N1	Number of tanks	54	75	108	54	75	108
ENEMY FORCES		Defense			Offensive		
n2	Shooting rate	8	8	8	8	8	8
P2	Probability of hitting	0.9	0.9	0.9	0.9	0.9	0.9
N2	Number of tanks	30	30	30	90	90	90
X – Force correlation index		2.16	4.17	8.64	0.24	0.46	0.96

of the index is above number one value, we can proceed to the execution of the planned actions.

In table 1 we can see that the higher the numbers of tanks of our own forces is, the higher the force correlation index is and thus the possibility of success will increase. This amount of tanks will be increased as much as needed, so this way, we can create the economy of forces. We can also estimate, with the help of this equation the direction, the area of operation where own forces can be vulnerable and the enemy could have an opportunity to exploit. So we will be able to take actions on time to prevent the enemy from changing the direction of his main effort or tactical situation at a specific time.

Using the principles of mathematics, I propose to extend this equation of Lanchester and to introduce another parameter, that is, *the effective firing distance*, which dictates in the case of the aimed firing method. In my opinion, the effective firing distance is that distance in which the aimed fire of the tanks can have an impact on the enemy's tanks and other fire assets. Thus, the fire of a tank will be effective only after the tank has physically entered the limit of this effective firing distance that differs on tanks depending on the performance of the cannon and their ammunition. More precisely, if two opposing tanks have this different effective shooting distance when they can aim directly each other, they can fire but the projectile or missiles of the tank with less effective firing distance will not hit the opponent's tank. This results from the fact that ammunition can only travel some distance to where it can be effective.

I propose to introduce this parameter within this equation in order to have a higher accuracy in calculations and implicitly in getting a result to reality as close as possible.

The extended equation will be,

$$X = \frac{(n1 \cdot P1) \times N1^2 \times d1}{(n2 \cdot P2) \times N2^2 \times d2}, \qquad (2)$$

where:

- X is the force correlation index;
- N1 is the number of tanks for own forces and N2 is the number of tanks for the opponent;
- P1 and P2 are the opponents' probability of destroying (PK) (they are expressed in percentage form and simplified by 100 to ease the calculation; 0,8 means that the likelihood
- of destruction is 80%);
- n1 and n2 represents the maximum firing rate of the tank cannons of each part (expressed as an integer representing the number of missiles executed per minute by the tank).
- d1 and d2 represent the effective firing distances of the tanks of opposing sides (expressed a calculation of the force correlation index with this parameter is shown in Table 2.

As we can see, the introduction of this effective firing distance parameter leads to a reduction in the force correlation index and implicitly to a decreasing of the existing force ratio for that tactical situation.

As a result of introducting this real parameter that dictates on the battlefield for tanks, we can see, in table 2, that the value of the correlation index of

Table 2

COMPUTATION OF THE FORCE CORRELATION INDEX WITH THE EFFECTIVE FIRING DISTANCE PARAMETER

OWN FORCES		Offensive			Defense		
		Option 1	Option 2	Option 3	Option 1	Option 2	Option 3
n1	Shooting rate	6	6	6	6	6	6
P1	Probability of hitting	0.8	0.8	0.8	0.8	0.8	0.8
N1	Number of tanks	54	64	108	54	75	108
d1	The effective firing distance	1.70	1.70	1.70	1.70	1.70	1.70
ENEMY FORCES		Defense			Offensive		
n2	Shooting rate	8	8	8	8	8	8
P2	Probability of hitting	0.9	0.9	0.9	0.9	0.9	0.9
N2	Number of tanks	30	30	30	90	90	90
d2	The effective firing distance	2.50	2.50	2.50	2.50	2.50	2.50
X – The force correlation index		2.16	3.03	8.64	0.24	0.46	0.96
X1 – The force correlation index extended with the effective firing distance		1.47	2.06	5.88	0.16	0.31	0.65

the forces decreases due to the fact that the tanks of own forces are not comparable to those of a hypothetical opponent, meaning that own forces tanks can not effectively fire the enemy tanks, they can fire effectively only at a distance less than the effective firing distance of enemy tanks. Thus, military planners will have to find optimal solutions for organizing and using the forces available to fulfill the objective or mission received.

My argument for introducing this parameter is that although the tanks of own forces can fire with the cannon against enemy hypothetical tanks, this fire is only effective within the distance of tanks and ammunition performances. Thus, if enemy forces have a number of *n* tanks, own forces must supplement the number of tanks over the *n* number of enemy tanks to fulfill the mission. Also, own forces must take tactical actions to reduce the fighting power and the number of tanks of the enemy's forces.

As a theoretical example, we can use the extended Lanchester equation in the case of a mobile defense to estimate the minimum number of tanks required by our own forces to destroy the enemy in the mobile defense area. If the enemy can have a number of 60 tanks when he is stopped before the limit of the defense in the mobile defense destroying area, following this extended equation, our own forces must have at least 89 tanks for the offensive action to be successful and the enemy to be destroyed.

This modified Lanchester equation can also be applied to artillery forces during military action planning, and the result may be relevant due to the fact that artillery largely influences the final state of a military operation.

In conclusion, in order to achieve success in a military operation, we must use all possible methods and ways of determining the *combat power* of military structures. Among these, there are two methods analyzed above, the classical method which involves the configuration of a tactical military structure according to *the force ratio principle* and the method of determining the combat power by using some *formulas* or *mathematical models*. It is necessary to use and, if necessary, adapt the methods and techniques for assessing the combat power of the military forces formulated and used throughout military history by military theorists and commanders. One sequence would be to study and expand the mathematical possibilities, at least at the theoretical level, *of Lanchester's equations* for all the weapons used in current and future military operations, especially since within these mathematical equations can be introduced those parameters or quantifiable factors that exist in the battlespace that can be exploited by military planners and decision-makers for own forces advantage.

NOTES:

1 Headquarters, Department of the Army, *Field Manual 3-0*: Operations, Washington DC, Department of the Army, December, 2017, pp. 2-21.

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3 Cpt.eng. Vasile Păun, *Raportul de forțe în viziunea sistematică – Modelul de letalitate*, Editura AISM, Bucharest, 1997, p. 17.

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5 *Ibidem*.

6 Sun Tzu on the art of war, *The Oldest Military Treatise In The World*, Translated from the Chinese By LIONEL GILES, M.A. (1910), Published by Allandale Online Publishing 2 Park House, 21 St Leonards Rd, Leicester LE2 1WS, England, 2000, p. 9.

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MARITIME STRATEGIES BASED ON THREATS

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Threat-based maritime security strategies, depending on nation and culture, geopolitics and political-military developments at a given moment, can be interpreted differently, and it is important to know the entire theoretical spectrum and the historical-causal evolution of concepts that are interdependent. The presence of an explicit link between maritime security, threats and geopolitics is measured by the unequivocal emergence of the concept of geopolitics and the certainty that threats affect maritime security. The direct influence of threats and geopolitical factors on maritime security objectives is measured by the emergence of risks to maritime geopolitical interests and geographical positions when it comes to maritime safety objectives.

Keywords: maritime strategy; asymmetric threats; geopolitics.

Maritime strategy is designed to protect the state's maritime interests in peace and war. In addition, it has the potential to support national objectives, particularly in foreign policy. From a legal point of view, naval forces protect decisive points or, why not, centers of gravity. Using the term maritime strategy, at least historically and legally, shows us the direction toward a crisis or war situation.

Milan VEGO, in his book *Maritime Strategy and Sea Control: Theory and Practice*[1], describes *sea control* as the concept that, after the Second World War, gradually replaced the concept of *command of the sea*, which seemed to be too absolute in significance. The *command* term seems to tend in semantics perspective towards an absolute situation, while *control* extends somehow the meaning of the concept. *Sea control* is limited in space and time. During a crisis situation between two super powers, no sea power will assume being able to *control the sea*, in a sea or region of it, for a long period of time, by none of them, simultaneously.

A simple definition of *sea control* would be the following: "the ability of a state to use the assigned sea / ocean region and associated airspace for military and civilian purposes and to prohibit the enemy in case of war to use them. However, this definition does not take into account the fact that sea control has different forms and levels of implementation". This does not mean that enemy means and forces do not act in the area but that the enemy cannot use them to create a military or civilian advantage. An area of action can be considered under control when its own naval and air forces can operate unhindered and when maritime traffic can be safely executed without being attacked by the enemy without taking a considerable risk.

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Sea control is defined by U.S. legislation thus: "A naval force has command of the sea when it is so strong that its rivals cannot attack it directly. Also, sea control is a dominance that can apply to its waters at a small distance from the seashore or it can extend far into the oceans. Having control of the sea, a country (or alliance) can ensure that its own military and commercial ships can move freely, while its rivals are forced either to stay in the port or try to execute masked actions. Sea control also allows amphibious operations to be executed at any time that expands the strategic options of land forces"[2].

NATO's definition of the control of the sea is: "The condition that exists when someone has the freedom to act in an area of the sea for their own purposes for a period of time in submarine, surface and air environments"[3]. As we can notice, there are different definitions with multiple points of view, control of the sea being either a condition existing at a given moment, or a state characterized by evolution over time or a proper action.

Corbett defines maritime strategy as "the part that determines the actions of the fleet when the strategy has determined the role that it (the fleet) has to play in relation to the action of the land forces"[4] and its main role to "determining the mutual relations between the land forces and the naval ones in a war"[5]. He identified that there was no Navy that had fulfilled all its missions. By defining the command of the sea as the local control of maritime communications, for military or commercial ships, Corbett appreciated the importance of *local command of the sea* as the immediate objective of peace and wartime strategies. Thus, "naval war is composed not only of the methods that will lead to the accomplishment of the local command of the sea, but also of the methods by which we can use this command for strategic objectives"[6].

Maritime strategy is an integral part of great strategy and the relationship between the two is defined by John B. Hattendorf: "In its broadest sense, a grand strategy is the comprehensive direction of the power to achieve certain national goals. ... The maritime strategy is the direction of all aspects of national power that is related to the interests of the nation at sea .... Maritime strategy involves other functions of the state power that include diplomacy, safety and protection of trade at sea, fishing, exploitation ... and the defense of the exclusive economic zone, the defense of the seaside, the security of the borders, the protection of islands, participation in regional and world concerns about the use of oceans, its related airspace and continental shelf"[7].

Corbett identified the common war by stating the following: "We are accustomed, sometimes from convenience and sometimes because of the inability to think scientifically, to talking about naval strategy and military strategy as distinct branches of knowledge that have nothing in common. War theory is the one that highlights their intimate relationship ... ... the combination of the two is a more complex strategy that regards the fleet and the army as a single weapon that coordinates their action and indicates the lines that each should act in order to achieve the full power of the two"[8]. This principle was fully proven by the UK in the Falkland War, when the proper and balanced application of maritime and land forces, in a synchronized campaign resulted in the British victory. In the Gulf War, the maritime component, aircraft carriers, and airborne components carried out perfectly synchronized missions against the Iraqi air force.

There are states or state actors who may try to exploit the sea for their own benefit by exerting deterrence or limiting the freedom of navigation. At the same time, other nations, through a permanent and active presence at sea, with modern forces and means, can carry out conflict prevention missions. Population growth, migration, rising energy demand, climate change, continued globalization, rapid urbanization and the exponential rate of change of technology are challenges of the maritime environment.

Maritime strategy is an extension of the land strategy and serves it. The strategic maritime objectives must be set in accordance with the objectives of the national policy. The nature of naval wars must be taken into account in the context of national and international policy. A navy cannot achieve a total victory in a battle, it must work closely with the ground forces, so that they can jointly fulfill the political purposes of a war. Given that people live on land rather than at sea, the final decisive battle must be on land. A successful maritime strategy must attach importance to the relationship between land and naval forces. Only through proper balance and proper use of the two can a victory be achieved.

Nearly a century after Mahan revealed the concept of sea power, during the Iron Curtain era, Admiral S.G. Gorshkov, CINC of the Soviet Military Navy, wrote in 1976 *The State Maritime Power*[9]. Admiral Gorshkov argued that the fundamental difference in the understanding of the sea power by the Soviet Union and the imperialist powers stems from its "class essence". Sea power "also determined the objectives, the missions and the means of implementation ... especially the naval forces, which in the imperialist states had the role of world domination"[10].

For the Soviet Union, the main objective was to build communism, and sea power was one of the important factors in consolidating its economy and strengthening its ties with its (communist) friends[11]. Like Mahan, Gorshkov pointed out that geography, economy and leadership determine sea power. He defined sea power as "the ability of a state to explore the oceans and to capitalize on their wealth, to use the commercial and fishing fleet and their ability to meet the needs of the state, and to coordinate the navy, so that it to meet the requirements"[12].

The importance of a powerful navy is a predominant theme in Gorshkov's writings. He considered the navy as a guarantor of security. According to him, the state's sea power is a system characterized not only by the links between its components (military fleet, commercial fleet and scientific or fishing research, etc.), but also by the inseparable union with the ocean. In his strategy, Gorshkov constantly compares the elements of the Soviet sea power with the imperialist ones, especially with the American ones.

US Maritime Strategy – A Cooperative Strategy for the 21st Century Seapower: Forward, Engaged, Ready (CS21R)[13]

For the US, as a maritime nation, sea power is the most useful means of responding to crises, thus promoting its own and allies' security, while keeping threats at distance so that it might fulfill its own interests. A naval defense requires a maritime strategy. The US faces a complex range of risks and threats to its own security. To continue to build US power and influence and to maintain an international order capable of overcoming the challenges of the 21st century, the United States have developed, besides the *National Security Policy*, another 21 strategic documents[14].

We believe that the most relevant document that we need to further consider is *The Asia-Pacific Maritime Security Strategy: Achieving U.S. National Security Objectives in a Changing Environment*[15]. It is obvious that starting even with title we can easily identify all the fundamental geostrategic elements that need further analysis. Of particular geostrategic importance is the fact that even the title answers the questions that any strategy needs to answer: who? (USA), what? (what it wants – Reaching National Security Objectives), where (Asia-Pacific), when (changing environment has here a temporal character, change can be assimilated to the passage of time).

As national security is increasingly tense, there is a need for a strategy to show the necessary actions (ways) to connect the ends with the means (the financial resources and the forces and the naval means to be built – means).

Colonel Art Lykke of the United States Army War College expressed strategy[16] as an equation, namely: "The strategy is equal to the Goals - Ends (those goals that we propose fulfilled) plus Ways - Manners - courses of action) plus Means (the means by which a certain purpose can be achieved)"[17].

After several decades of uncontested world leadership, the United States once again faces a two-world competition, China and Russia, which is increasingly under constraints and limitations imposed on maritime trade, and of world finances. Both China and Russia are improving and renewing their naval forces, acting aggressively simultaneously against neighboring countries[18]. In addition, both nations turn their attention to naval operations executed far from their own coasts designed to promote national interests that are in contradiction with those of international organizations or the United States.

Since the introduction of the US Maritime Strategy, the importance of maritime Asia for world trade and the economic growth of the whole region has been mentioned[19]. The Asia-Pacific region has a key role for the US Navy, for regional peace, stability and security, remaining out of the conflict for years, and allowing all nations to benefit from the maritime sector[20]. The South and East China Sea is the place where, due to huge quantities of fish, petroleum and natural gas, many nations have territorial disputes and / or claims of natural wealth. For example, in the South China Sea there are three major disputes over territories. The first is the dispute between China, Taiwan and Vietnam over the Paracel Islands, the second is the Taiwan - Philippine contest on the Scarborough reef, and the third is the multinational struggle over the island of Spratly for which China, Taiwan, Vietnam, Brunei, Malaysia and the Philippines are fighting[21]. In the East China Sea, China and Japan have disputes regarding the delimitation of the continental shelf. In the Indian Ocean, there are also disputes between India and Pakistan regarding the delineation of the border along the Creek River[22].

The Maritime Security Strategy has a fundamental role to play in meeting the US objectives[23] in order to eliminate all types of threats. The US Department of Defense, in cooperation with its partners and allies, is engaged in a comprehensive maritime security strategy, focusing on four lines of effort, namely:

strengthening US military capabilities in maritime domain, increasing the allies and partners' maritime capacity, stimulating military diplomacy to reduce risks and enhance transparency, and strengthening the development of an open and efficient regional security architecture. The main line of effort is to strengthen military capabilities to successfully discourage conflicts and to respond to any threat when necessary.

The US Department of Defense is increasing US capabilities to project sea, air and under water power[24], and considers investment of any kind, but especially in the Asia-Pacific military capabilities, to be of strategic importance for its own interest. The Maritime Strategy has highlighted the fact that the United States will maintain its military presence and capabilities, to protect its own interests and those of its allies and partners against potential threats, to maritime Asia and to respond decisively when needed. The Department of Defense modernizes and develops the best aero-naval capabilities anywhere in Asia in order to operate where international law permits, and invests in flexible capabilities, that will allow a rapid and effective response to the widest possible range of potential maritime challenges.

Spykman, a prominent representative of geopolitical realism, is found in this strategy, particularly through the balance of power US want in the Indo-Asian region. David Shear, the assistant secretary of security for the Asian-Pacific Security Affairs, told the Pentagon on the occasion of promoting the US Maritime Security Strategy that "the US is strengthening its military capability in the region to discourage conflicts and to respond decisively when it is needed"[25].

Spykman emphasized that US security is aimed at preventing a hostile power or a coalition of powers dominating the Old World, and that the ocean would become a highway rather than a barrier (economic, political or military). According to him, America's main concerns about security were in *Rimland*. This region comprises the majority of population and resources and is connected through marginal seas. The US Maritime Security Strategy supports the idea that the most serious threat to the overall balance of power would arise if a single power or coalition of powers were to dominate Rimland.

From the analysis of this Strategy we could easily infer that it is trying to stay one step ahead of the evolution of the maritime security environment in the Asia-Pacific region in order to guarantee the continuity of freedom of navigation, to discourage conflicts and to promote respect for international laws and standards. From the Indian Ocean to Northeast Asia, the US seeks to strengthen its military capability to promote stability and quick responses to threats, to address its allies with the challenges of the region, and to enhance the use of civilian and military diplomacy to promote confidence, stability, and capacity building for regional organizations to addressing maritime security issues in common.

Maritime Doctrine of the Russian Federation until 2020[26]

The Russian Navy[27] is more and more challenging in performing shows of force. In 2017, a navy exercise took place in the Baltic Sea in common with Chinese Navy ships and Russian navy sent the largest war ship, Kirov – class battle cruiser Pyotr Velikiy and the world's largest submarine, Dmitri Donskoi, from the Baltic to participate in the Russian Navy Day parade on, July 30[28]. Vladimir Putin approved a new Russian Maritime Doctrine[29] just a few days before the celebration of the Russian Navy Day[30]. The doctrine promotes a vision of a resurrected Russian Navy capable of maintaining its superiority over the new sea power, China, and even posing a serious threat to the American Navy in certain combat environments. This doctrine seems to be optimistic, with an endowment program that is more than ambitious (in the conditions of an economy that would hardly support it) and with an ambition level at the limit between unrealistic aspirations and palpable desires[31].

From a geo-strategic point of view, the Russian doctrine highlights the ambition of some countries, mainly Washington and its strategic partners, to control blue waters, the Arctic Ocean, and to show overwhelming superiority with their naval forces[32]. Other threats relate to territorial claims on maritime and coastal areas, the efforts to stop Russia's access to the natural resources of the continental shelf and oceans, and trying to fade Russian control over the Arctic and North Sea.

Three potential threats are listed in the document. The first is a sudden fall in the political-military initiative that leads to the use of military force in maritime areas that have a strategic interest for Russia. The second is the deployment of high precision strategic non-nuclear weapons and defense against ballistic missiles inside of the territories and maritime areas adjacent to Russia. The last one is the use of military force by other states in ways that threaten Russia's national interests. In addition to the Arctic, the document emphasizes the relevance of securing free access to oil in the Middle East and the Caspian Sea, expressing concern about the negative impact of regional conflicts on international security, and emphasizes the piracy danger in Guinea Bay, Indian Ocean and Pacific Ocean. Strengthening the Black Sea Fleet and the Russian forces in the Crimea, as well as maintaining a steady naval presence in the Mediterranean are considered the most critical geographical priorities for the future development of the Russian Federation Navy.

The doctrine seems to focus in particular on the role that Navy can play as a deterrent. Russian leadership is particularly concerned about the militant US Military Prompt Global Strike, which would use hypersonic sliding vehicles to reach targets anywhere in the world about an hour after launch.

For Moscow, special attention is paid to the geostrategic field that could be of great importance to Russian decision-makers. The first and probably the most important geostrategic area discussed is the Atlantic area. Here, Russia's policy is conditioned by the *unacceptable* movements of NATO to develop a military infrastructure up to Russia's borders and plans to carry out global missions in the area.

The Atlantic region is broadly defined, comprising the maritime area from the Baltic Sea, the Mediterranean Sea to the Black Sea. Very little attention is given in the document to the North Atlantic, an area of action that would require a blue ocean naval forces to affirm Russia's interests. The doctrine focuses on areas closer to Russia highlighting the need to further develop the economic and natural potential of the Baltic resources.

Particular attention is paid to Black Sea and Mediterranean Sea. There is a wide range of objectives in the Black Sea, including the strengthening of the military forces in the region to ensure Russia's sovereignty over Crimea, accelerate efforts to exploit offshore natural resources, reintegrate Crimea into the Russian economy, and support the development of a robust shipbuilding industry in the Crimea.

In the Mediterranean, the message of the doctrine is exclusively of a military nature. The Arctic is important because of the role it plays to ensure Russian Fleet access to Atlantic and Pacific Oceans. The region's natural resource reserves and exploitation potential, as well as the importance of the North Sea lanes of communications, highlight the military dimension of the Arctic[33] in order to reduce threats to national security and ensure strategic stability in the Arctic.

Russia considers the US aspiration to dominate the Planetary Ocean as a threat to its national security. This thesis is included in the *Fundamentals of State Policy of the Russian Federation in the Field of Maritime Activities until 2030*. Article 24 of this document[34] states: "There are new risks and threats to the Russian national security in the Planetary Ocean, the main of which being: the desire of some states, especially the (USA) and its allies, to dominate the World Ocean, including the Arctic, and to gain overwhelming superiority of their naval forces".

A geostrategic assessment of this document is highlighted in Article 27, which mentions that the need for the Russian Federation's naval presence in strategic areas of the World Ocean is determined on the basis of several threats. These include: increasing the number of countries wishing to access the hydrocarbons resources in the Middle East, the Arctic and Caspian basins; the negative impact on the international security of conflicts in Syria, Afghanistan, Middle East, South Asia and Africa; and the possibility of escalating the existing and emergence of new interstate conflicts.

Other threats to Russia's security include: territorial claims of some states regarding coastal areas and areas adjacent to the Russian Federation's seacoast; increasing the number of states with strong naval forces, proliferation of weapons of mass destruction and new generation missile technologies; limiting Russian Federation's access to Planetary Ocean resources and vital shipping communications; and, international economic, political, legal, and military pressures on the Russian Federation to reduce its effectiveness in the Planetary Ocean and to weaken its control over the maritime routes in the North Sea, which, according to tradition and history, are established as being the Russian National Federation's SLOC's[35].

In this doctrine, a strategic evaluation is observed reaching all three elements of the equation: *Strategy = Objectives + Action + Means*. Thus, strategy becomes more of an art than a science. Russian strategy can follow a rational formula, but maintaining this doctrine requires the intuitive sense of an experienced supreme commander in integrating all elements of Russian national power, social and political consensus, and the compromise between an impotent economy and grand navy ambitions.

The relationship between means and goals is essential but, for Russian critics, there is a clear disparity between stated ambitions and real naval capabilities. One should therefore take into account the extent of the financial and technological constraints that could impose limits on Russian naval capacities in the future. Although the pace of economic growth in Russia has slowed down in recent years[36], total Russian military spending has risen rapidly as the modernization of Russian armed forces has become a key political priority. Against the backdrop of an ambitious plan to modernize equipment used by Russia's military forces (incorporated in the State Endowment Program 2010-2020), military spending was directly proportional to Russia's GDP, with an average of 58 billion dollars.

Conclusions

The paradox of the Russian strategy is that, after a profound analysis, one can deduce that one side of the Russian naval forces is built and adapted to the specifics of the cold war, and the other side is strategically directed towards a new approach, namely on the projection of the sea power. Thus, the Russians are positioned in a major discontinuity between goals and means. A recent statement by the Russian Ministry of Defense[37] shows that four Bulava inter-continental ballistic missiles have been launched.

First of all, the need to continuously develop the technology foundation to ensure the exploration and exploitation of the Arctic's fuel and energy reserves is expressed by the desire to develop a nuclear icebreaker and a modern infrastructure for their use. Moscow believes that all four of Russia's main Fleets will have to be equipped with modern and capable warships as well as supporting ships. Thus, the four Fleets should have the capabilities to perform long-range operations at long distances far from oceanic seashores, both in peacetime and in crisis situations. Starting this new type of fleet, which will meet Russia's ambitious goals, will always be a challenge, given the severity of spending cuts. The state armament program to run from 2011 to 2017 but extended until 2020[38] provided for the construction of new models of corvettes, frigates and submarines, and the modernization of obsolete ships and submarines. Until the mid-2020s, it is predicted that nuclear and diesel-electric submarines, as well as destruction, frigate, corvettes, could be launched. Such a fleet would provide Russia with such capabilities to meet its strategic objectives in the maritime strategy.

To summarize, the Russian maritime doctrine is an ambitious and ample, surrealistic and unrealistic documentary that includes, besides the elements of state power, political and social objectives related to Russia's maritime policy, which extends from the Arctic Ocean to the Antarctic Ocean and Atlantic Ocean at Indian Ocean, Mediterranean, Baltic and Black Sea. However, although these regions are on an equal footing, there is a sense of prioritization in this doctrine. By correlating this document with other official security strategies and foreign policy strategies published in recent years, much of the military threat to Russia is presented as originating from the western direction, especially from Black Sea and Mediterranean Sea. The Arctic Ocean is also identified as an area where military conflict may become more likely in a more or less distant future. Analyzing it more closely, we can say that the doctrine suggests that Russia's fundamental interests are projected near its shores.

Great thinkers, though seemingly outdated, still find resources to keep their works close to the truth of the modern age in which we live. Mahan and Corbett's opinions contain strong points and weak points as well. The different stages of history seem to validate or question different parts of their theories and their arguments. Their reputation changes with time, but Mahan and Corbett are and will remain outstanding figures in the history of strategic studies, with both strategies having redundant points of view.

Maritime Security Strategies are crystallized when the global maritime context is undergoing a profound transformation, driven by global geopolitics, threats and the emergence of a multipolar global order. The emergence of new emerging powers, the increasing economic interdependence and the shift of the geostrategic pivot to Asia ensure a maritime security context radically different from that of the time or after the cold war. In view of the increasing intensity of asymmetric threats, sea power, more than ever, focuses on securing critical global flows.

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REDUCING THE LOGISTIC FOOTPRINT – A DESIDERATUM OF PAST AND FUTURE MILITARY OPERATIONS

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With the technologizing and modernization of the armed forces, the emergence of fuel-consuming self-propelled means of transport and weapons systems of all ammunition-consuming gauges, the logistical challenges were not delayed, the logistics footprint grew, the support of military operations involving resources more diversified, more voluminous and requiring an increasingly systematic and integrated approach to the concept of the operation as a whole.

The logistics footprint in the military operation consists of the whole of the organizational entities, the resources managed by them and the activities carried out in order to achieve the logistic support of the fighting and the fighting support units so as to ensure the living conditions and the freedom of action necessary to achieve the objectives.

Keywords: *logistic footprint; technical or procedural innovations; logistic resources.*

The logistic support of military actions has been, from ancient times, an essential decision-making element in the planning, organization and execution of operations. At the same time, the logistics structures and their activities represented and still represent a stone in the boots of the commanders; movement speed and lower mobility are just a few features that require caution and increased attention in carrying out armed conflict-specific activities with effects on configuration, time and space demarcation, supply chain and battle stocks management.

As a logistics officer, I have always wondered how the military campains over two millennia ago, such as Alexander the Great, the Persian or Roman Empire, were organized in terms of supporting the troops. The logistic support related to them was related to providing food (for humans and animals) and equipment, as well as to movement and transportion of forces. The efficiency of any logistics system as perceived today is limited, among other things, by the ability to communicate and transmit messages, orders and requests in a short time, and that capability could not be sufficiently developed given the distances at which the information had to be reached. That is why the campaigns were planned so that the forces engaged in the struggle would benefit as much as possible from the existing resources in the conquered territories, especially the food and water, avoiding the winter or unfavorable times and focusing on the intervals in which harvesting were carried out on agricultural crops. War pillages and catches were an important source of supply.

With the technologizing and modernization of the armed forces, the emergence of fuel-consuming self-propelled means of transport and weapons systems of all ammunition-consuming gauges, the logistic challenges were not delayed, the logistics footprint grew, the support of military operations involving resources more diversified, more voluminous and requiring an increasingly systematic and integrated approach to the concept of the operation as a whole.

Trying to understand the concept of logistic footprint in the military operation, we can say that it consists of all the organizational entities, the resources managed by them and the activities carried out for the logistic support of the fighting and fighting support units, so as to ensure the living conditions as well as the freedom of action necessary to achieve the objectives. The specifics of the operations conducted and the size of the force are the main factors that impose the dimensioning of the logistic footprint so that essential requirements of logistical support, such as the sufficiency and continuity of resource provision, flexibility and mobility of the logistic system, can be ensured by existing capabilities.

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And yet, given the increasing need of the past decades to limit resource consumption and make it more efficient to use it in all areas of everyday life, especially in the military area and armed conflicts, as well as the ever-increasing scale to which the current military operations take place, with the involvement of multinational coalitions, there is an arduous interest in reducing the logistic footprint in the theaters of operations, while ensuring a superior quality level of support for the operation. In other words, the current political and economic context requires achieving higher goals, using quantitatively reduced resources. We therefore discuss in terms of efficiency and effectiveness in logistics.

Analyzing from this point of view some of the armed conflicts of the last century and especially the logistic support associated with them, we could extract some attempts to reduce the logistics footprint through technical or procedural innovations, some even successful and able to decide the success of the operation or at least shorten the duration of the conflict and considerably reduce the costs and resources involved.

In the *Korean War* (1950-1953), US logistics relied mainly on material resources from the Second World War. Without their existence, this conflict in the Korean Peninsula probably would not have taken place or would have been conducted without the contribution of the United Nations or the United States[1]. However, the existence of much of the material resources did not generate the lack of logistic difficulties and challenges. These mostly occurred in the field of labor supply in the area of logistic responsibility, both in the peninsula and at the points of reloading of materials, especially in the logistics bases on the territory of Japan. In order to provide labor force requirements, the US would have to supplement the service staff involved in the conflict with several hundreds of thousands of people, from material manipulators to engineers and motor mechanics, which would have led to a significant increase in costs and would have generated another set of difficulties related to the deployment and self-sustaining of these categories of staff.

The solution to overcoming these difficulties was to identify and engage in addressing the administrative problems of the indigenous workforce. Only in Japan, in the absence of local employment to provide supply and campaign services, it would have been necessary to supplement American logistics with more than 200,000 workers.

On the Korean territory, the US hired over 107,000 workers across the area of operations without which it would have been impossible to carry out the activities of supplying the combat forces or executing the many infrastructure projects needed to ensure the communication and supply/evacuation routes. However, all these activities could not have taken place without careful supervision and monitoring of Korean workers. At the same time, American logisticians lacked the necessary expertise to employ, use and monitor the indigenous workforce and there were no clear procedures related to this process[2].

In this context, at the level of the US Logistics Command in the Area of Operations, a school was originally set up to provide Korean workers with information on US work methods, by field of activity. Later, however, this move turned out to be inappropriate, and the school became an institution for American logisticians who needed to gather information and learn the skills needed to monitor the Korean labor force[3].

Even if locally employed labor was also used on a much smaller scale in other previous armed conflicts, the conflict in Korea was a debut for awareness of the need to include indigenous workforce in the planning and execution of a military operation and, at the same time, for initiating procedures for the development of doctrines and procedures applicable to the contracting, training, organization, use and monitoring of workers.

The use of the outsourced workforce gained new valences in the *Vietnam War* (1961-1975). The particularly hostile territory in which the combat forces were operating, the lack of transport infrastructure, ports and airports, and the technological advance of the military equipment used, generated the need for highly qualified personnel to carry out the necessary infrastructure projects (from warehouses for materials and ammunition to landing sites – ports and airports, bridges and hospitals), the maintenance of weapons systems and aviation equipment and, last but not least, the provision of more and more base camp operations and services.

In this context, the first modern origins of contracting work and services to support military operations emerged. American companies such as RMK – Raymond Morisson Knodsen or BRJ – Brown & Root Jones, alongside the US Army and US Navy engineers units, have had outstanding achievements in terms of infrastructure projects carried out by 1969. Through sustained efforts, they managed to complete the construction and operationalization of 6 ports including 29 berths with different destinations, several airports, 20 hospitals and military bases that could accommodate 450,000 soldiers. In order to understand the rhythm of events, we can point out that in 1962, RMK had hired nearly 2,900 Vietnamese workers and, due to the large number of projects assumed, merged with BRJ in 1965, forming the construction consortium RMK-BRJ, which reaches in 1966 to have 52,000 employees, both Vietnamese and other neighboring countries, being involved in works in 50 locations in Vietnam[4].

In addition to the companies involved in the infrastructure projects, other specialized economic agents provided part of the base camp services as well as the maintenance of generators, pumps, under-pressure equipments and refrigeration units of all types. Of these, we can remember PAE – Pacific Architects and Engineers Corporation, which has reached 24,000 employees in Vietnamese territory during the war[5].

Throughout the war, in Vietnam there were active approximately 35 different economic agents, with between 130,000 and 150,000 employees, of which less than 5% were Americans, most of them being Vietnamese (about 83%) and other countries like Thailand, the Philippines, Japan or Taiwan (12%). Their use was a cost-cutting measure as well as an effective tool for supporting combat forces by using the expertise of both highly skilled and unskilled labor outside the military system. As a result of the experience gained in this conflict, in 1985 the LOGCAP – Logistic Civil Augmentation Program was set up in the US Army, which clearly states the possibilities of using civilian contractors both in peace and in crisis and war. In this way, their importance and involvement in military operations of all kinds grew more and more, as in the 1995-2004 peacekeeping operations in Bosnia, to operate one civilian for each US military, while in Afghanistan, in the years 2015-2016, their number reaches 3, for each service man[6].

In the absence of the use of this type of workforce in all areas of logistical support in operations, the military effort would have been enormous, consisting, among other things, in:

- the selection and additional recruitment of hundreds of thousands of soldiers, with all the shortcomings and implications of these activities, from the time required to carry out the procedures to the need for their actual funding and the payment of recruited staff;
- training the military in the simplest areas, such as the maintenance of a washing machine or a refrigerator and more complex ones, consisting in the design and construction of a port or the maintenance of electronically controlled weapon systems or combat aircrafts;
- deploying staff in theaters, with extensive implications for transport organization, reception, staging, onward moving to the final locations and integration into the planned logistic structure;
- planning and organizing work, monitoring workers, solving health and safety issues, providing work and safety equipment, etc.;
- rotation of staff in the theater of operations, redeployment and repatriation;
- solving the social, family and health problems of the soldiers both during and after the operation, including aspects related to reintegration, recovery and post-traumatic syndrome.

The human, material and financial resources needed to carry out these activities, as well as the time needed to execute them, would certainly have exceeded both the resources actually consumed by the contractors and the existing military means at that time.

Analyzing logistic support in military operations and related logistics footprint from another point of view, namely *supply*, there is to be taken into account one of the most innovative methods of fuel distribution, used and improved over time in the modern armies – distribution through pipeline systems from refineries or ports to logistic support lines serving combat structures.

This approach to fuel supply has been used since the Second World War by the US Army in the theaters of operations in North Africa and after landing in Normandy. In North African campaigns, over 1,600 kilometers of pipelines were installed in Algeria and Tunisia, while for landing in Normandy, six pipelines were planned to be set up from Cherbourg port, enough to carry 90% of the fuel used for the fighting forces to advance to Germany. In addition, in order to bring the fuel into the port, the PLUTO - Pipe Line under the Ocean system was set up, a system that crossed the English Channel, and a structure specifically designed for the management of pipeline systems in Western Europe was fully operationalized[7].

The system designed and used in the Second World War was later used in the same configuration in both Korea and Vienam, and only in 1983 underwent some changes designed to make it more mobile, efficient and easy to install. The old system consisted of 6 inch diameter metal pipes of about 6.1 meters in length and 85 kilograms, and the joining of them was made by bolts and nuts. Pipes in the new system configuration retained the diameter of 6 inches, but were only 5.8 meters long and 53.5 kg, their advantage being the lower weight – the material used was aluminum, the length – which made it possible to package the system in standard ISO-20 containers as well as the effective way of joining them using only one bolt, each pipe having an inner gasket to prevent leakage at joints. At the same time, the system as a whole gained in terms of the maximum allowable pressure in the plant, from 600 to 740 psi[8].

Following the completion of its research, testing and operationalization activities, the new system, called IPDS (Inland Petroleum Distribution System), was first used in operations in 1990 in Iraq, but proved its usefulness and efficiency only from the beginning 2003, also in Iraq, as part of Operation Iraqi Freedom. Initially planned to be built only on the Kuwaiti territory up to the border with Iraq, 164 kilometers of pipelines were built on two parallel routes, linking the Kuwait commercial fuel transport network to the US storage and distribution terminal positioned just 8 km away from the border with Iraq. With the two parallel systems fully operational, the storage and distribution terminal could have reached about 6,000 liters of fuel per minute, this ultimate terminal in Kuwait having a storage capacity of over 16 million liters, quantities that could convince any commander that the need for fuel for initiating the offensive operation was assured. With the entry of coalition forces in Iraq, the next stage of IPDS construction was initiated. Thus, from 20 March to 6 June 2003, the system was expanded with over 180 kilometers of pipelines, 10 pumping stations and 3 storage and distribution terminals with a total storage capacity of over 31 million liters[9].

The difficulties encountered in the operationalization and maintaining the transport capacity of the system were among the most diverse, starting from the landscaping, testing the pumping capability and verifying the tightness of the joints, to guarding and protecting it permanently, the system being often the object of sabotage or even theft of aluminum pipes.

The advantages of using the fuel transportation system are evident, with over 227 million liters of fuel being transported over the entire period of the conflict, equivalent to 22,700 10,000-liter tanks for which it should have:

- to arrange and maintained communication routes;
- to recruit additional staff for operation;
- to ensure maintenance, with all its implications, from spare parts to specialists in motor mechanics and for the special part of tanks;
- to provide additional fuel for operation (over 2 million liters);
- to ensure the management, guarding and defense of convoys, etc.

Another advantage of the system is that after the conflict, its components were largely recovered, maintained, preserved and stored, pending a new deployment in the theater of operations. At the same time, in addition to the considerable reduction of the resources involved and implicitly the costs, the use of this modern transport and distribution system made it possible to manage the fuel supply chain by a single structure for the whole theater of operations as well as respecting the principle of continuity of logistic support and the principle of sufficiency of resources necessary to achieve the objectives of the operation.

Analyzing the elements of the logistic footprint in the military operations reviewed, we can conclude that its reduction can not be attributed to a single entity in the organic military system. Only teamwork, intensive cooperation between all the structures and their involvement in peacetime research, innovation, operational testing and training can make the logistics of future military operations efficient and effective.

By addressing the logistics of the future and trying to figure out how the logistic support lines could look, including in their configuration specialized organizational entities and cutting-edge technologies, we find that the goal of reducing logistic footprint in military operations can be achieved, among others, through:

- efficient and effective stock management;
- effective and efficient management of supply / evacuation / repair chains;
- use of alternative energy sources;
- cooperative and shared use of resources.

Efficient and effective stock management in future military operations can be achieved primarily by knowing accurately and instantly the needs of forces in theaters of operations. Involvement in the information logistic system of artificial intelligence through the implementation of data monitoring and integration systems up to the smallest team or crew type on a combat machine that will continually and automatically transmit information related to the number of kilometers traveled, fuel, ammunition use, and even the need for spare parts for the next planned maintenance work will generate major changes in logistics support approaches. Thus, after a single order, the commander will know precisely, at each moment, the level of logistic support, the urgency and the supply priorities for all classes of materials, the ultimate purpose being to relieve the fighting units of the logistic bureaucratic responsibilities, to ensure on time the needed assets and only in the quantities strictly necessary to achieve the objectives, avoiding the creation of unnecessary stocks at their level.

At the same time, the removal of intermediate links in the supply chain will lead to a reduction in the logistics footprint by creating a slim logistic system, minimizing financial pressures, suppressing supernormal stocks, responding more quickly to the requirements of the beneficiaries, and mitigating the impact of possible malfunctions before their occurrence[10].

From the *supply / evacuation / repair chain management* point of view, a noticeable impact will have the implementation of the distribution-based logistics (DBL)[11] concept. Also, the widespread use of the drones with increasing autonomy and transport capacity will increase existing logistics capabilities. In future conflicts, with the use of advanced precision weapon systems capable of striking long-distance targets, effective maneuvering of fighting and supporting units will be decisive. For this reason, supply operations will have a different dynamics, and the development of capabilities that can distribute certain quantities of material, food, water or ammunition in hard-to-reach areas at high speed and without endangering life and integrity of the operator, is not only necessary but even imminent.

As early as 2016, the JTAARS – Joint Tactical Autonomous Air Resupply System was launched in the US Army, a capability consisting of logistic transport drones with the primary mission of supplying the tactical subunits isolated or in contact with the enemy with 150 to 300 kilograms of various materials. Decentralizing the use of these assets from higher hierarchical levels and integrating them into the logistics companies' structure is a desideratum that will bring benefits in terms of mobility, vulnerability and capacity to use every opportunity to supply in a hostile, dynamic and ever changing environment, characteristic of future military operations [12].

The use of unmanned aerial systems of all types with size, autonomy and variable transport capacities in logistics operations will have an impact not only on the supply but also on other aspects of supply / evacuation / repair chain management, such as: evacuation of wounded and sick persons, surveillance and investigation of communication routes and crossing points, including chemical, bacteriological, radiological and nuclear research, transmission of mail or postal parcels, etc[13].

But the influence of the technological achievements of recent years on the logistical support of military operations and supply, evacuation and repair chain management, does not stop here. Certainly, the military logistic system will evolve, following the pace of technological advancement, by implementing other innovations, such as:

- the leader-folower convoy system with the first vehicle driven by an operator and up to 10 other vehicles that, using sensory-based artificial intelligence, track the leader to the final destination;
- using 3D printers as a source of supply of different kinds of hardware and spare parts for the battle technique, with important effects related to shortening supply lines and performing repairs on the spot without evacuation or lost time waiting for the necessary spare parts;

• using video maintenance through drone-assisted videoconferencing systems that transmit video information from the defective vehicle to a specialist hub that can guide the operator to repair faults by repairing or replacing the defective subassembly with an existing or three-dimensional printed spare part.

And how would all these elements be shown in the logistic support lines of a military operation if they were autonomous or semi-autonomous in terms of energy? *The use of alternative energy sources* (solar, wind energy, hydropower or tidal energy, geothermal energy) and the implementation of procedures and means of obtaining it in military operations may seem for the time being too optimistic and daring, but the benefits thus obtained would translate in terms of mobility and broader freedom of action on the part of combat forces on the one hand, and on the other hand, the economy, efficiency and effectiveness of the logistics system by obtaining a supple logistic footrprint, in the absence of supply, storage and distribution of conventional fuels as the main source of energy.

Exceeding the technical and technological innovations, I have also stated that a reduced logistic footprint can be achieved by *cooperative and shared use of resources* at its disposal. We understand through this concept, streamlining structural and procedural organization, especially within a joint/ multinational forces, in order to allocate the existing logistics resource, regardless of its origin or nationality, to all the components and nations involved. For this, the resources involved, regardless of their nature, must respond primarily to the principle of the single command, so that the commander can dispose of the maneuver and its distribution to the subordinate entities without restrictions and at the same time, there should be clear responsibilities for realizing the integrated logistic picture of the theater operations in its entirety. Modern structural entities, adapted to the current context, are in the process of integration and development, both at NATO level (JLSG - Joint Logistic Support Group) and at national level. The use of the resource in this way, manifests its necessity especially in the field of movement and transport, not only at the strategic level, but also at the tactical level for the supply and replenishment of the units.

All technical or procedural efforts aimed at achieving efficient logistics support in current military operations will certainly reflect on the success in achieving goals and sizing logistics footprint. Setting up flexible logistic support lines, in addition to cost advantages, generates real operational benefits in facilitating command and control activities as well as mobility, security of operations and the protection of logistics forces.

NOTES:

1 T.J. Gough, *U.S. Army Mobilization and Logistics in Korean War – A Research Approach*, Center of Military History, United States Army, Washington D.C., 1987, p. 28.

2 C.R. Shrader, *Contractors on the Battlefield*, Landpower Essay Series, No. 99-6, May 1999, p. 7.

3 *The Long Haul: Historical Case Studies of Sustainment in Large-Scale Combat Operations*, Army University Press, Fort Leavenworth, Kansas, 2018, pp. 84-85.

4 C.R. Shrader, *op.cit.*, pp. 8-9.

5 *The Long Haul: Historical Case Studies of Sustainment in Large-Scale Combat Operations*, Army University Press, Fort Leavenworth, Kansas, 2018, p. 100.

6 *Ibidem*, pp. 104-106.

7 https://www.combinedops.com/pluto.htm, accessed at 09.04.2019.

8 *The Long Haul: Historical Case Studies of Sustainment in Large-Scale Combat Operations*, Army University Press, Fort Leavenworth, Kansas, 2018, pp. 182-183.

9 *Ibidem*, pp. 184-191.

10 Gh. Minculete, *Abordări moderne ale managementului logistic*, "Carol I" National Defense University Publishing House, Bucharest, 2015, p. 112.

11. *Ibidem.*

12 https://www.army.mil/article/197243/autonomous_aerial_resupply_in_the_forward_support_company, accessed at 25.02.2019.

13 Benone Andronic, Gheorghe Minculete, *Abordări relaționale ale sprijinului logistic al diviziei de infanterie în operația de apărare pe litoral*, "Carol I" National Defense University Publishing House, Bucharest, 2019, pp. 150-153.

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ORGANIZING AND PROVIDING CAMPAIGN OPERATING SERVICES OF THE MECHANIZED BRIGADE

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During an operation, the logistic support necessary for the armed forces is realized according to the following functional areas of logistics: supply, movement and transportation, maintenance, medical support, infrastructure, campaign services, contracting, Host Nation Support and related fields.

The field of campaign services is currently the most complex area of logistical support as it covers a wide range of services, it requires cooperation between military bodies and various institutions, entities involved in their ensuring, and it prompts logistics planning and leadership promptness in solving immediate problems that may arise.

Keywords: operation; ensuring; logistic support; campaign services.

According to the definition given by the Romanian Explanatory Dictionary, the action of organizing has the purpose of "making a social group, an institution, etc. to operate or to act organically (giving assignments and coordinating them according to an appropriate plan); to establish and coordinate technical, economic, and administrative means so as to allow for the best possible execution of a process"[1].

In the military sense of the term, the organization of logistic support involves sending missions to subordinates and implementing measures to meet the provisions of the logistic support plan. This organizational process usually takes place after the validation of the logistic support plan, but when the short time available requires some organizational measures, these should be taken in parallel with the logistic support planning process.[2]

From the perspective of providing campaign services, "organizing ... includes the actions taken to efficiently use specific resources, determining, enumerating and grouping activities to meet the objectives of each campaign service, that is to say, correlating the efforts of the logistic support bodies to achieve the proposed goal"[3].

Starting from the above-mentioned definitions, I believe that the *organization*, from the point of view of providing campaign services, takes into account the activities carried out by the management structures to identify, establish and assign the specific tasks of each campaign service to the execution structures, so that their actions support the accomplishment of the missions of a mechanized brigade structure in operation in the most efficient way.

The organization of logistic support and implicitly of the campaign services at the level of mechanized brigade is done on the basis of the Logistics Support Order / Logistic Supplement Annex to the Operational Order of the Echelon, and providing is executed by the logistics forces from the brigade, on basis of the commander's decision[4].

By ensuring timely and unambiguous campaign services, the logistics support structures of the mechanized brigade contribute significantly to ensuring the necessary conditions for the fighting structures to carry out the entrusted missions.

As a general concept of achieving logistic support in *NATO-led operations*, while each nation assumes responsibility for providing logistic support to its own forces, as a rule, for operations outside the national territory, campaign services can be provided through both its own forces (with the support of the economic operators and the international contractors available in the area of the operation) and with multinational support. Multinational support can be provided by the Leading Nation, through the Nation with a specialized role, through mutually supportive / cooperative agreements between participating

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nations, or through Host Nation Support, where these options are available and are considered more suitable[5]. Host Nation support and contractors are primarily provided in the rear zones of the operation area, outside the areas where their own militaries are in contact.

For *offensive operations*, providing campaign service is based on the anticipated support needs of each subordinate structure. Campaign services will be integrated into the mechanized brigade management scheme to ensure synchronization of operations and to avoid interfering with probable or planned maneuvering actions.

The specific activities carried out to provide the campaign services will, as far as possible, take place in (natural or artificial) hidden, camouflaged locations. Decision points will be planned to enable or disable collection points based on the movements or actions planned by the mechanized brigade. In order to ensure promptly the campaign services, the personnel involved will always know the missions and locations of the structures / subunits and the technical means that provide these services. Other equipment (engineer or CBRN) may be used to replace the necessary equipment to provide campaign services (bathing, laundry, etc.) in order to reduce the logistic footprint of the structures involved in the operation. During offensive operations, some of the campaign services are temporarily suspended, being ensured during the training or after the operation is complete. The exception is funeral services, which are given special attention due to the larger losses estimated for this type of operation.

During *defensive operations*, establishing logistic support patterns (by planning different activities carried out on day different days, at different times) is to be avoided in order to reduce the vulnerability of logistics structures to enemy actions. Also, routine logistics activities will be planned to take place overnight or during periods of reduced visibility.

The logistics structures will be available in the area of operations in locations positioned as far back as possible but at a distance that will allow appropriate support for the maneuvering units. It will also be avoided to arrange these in the flight paths of the enemy aviation, in areas vulnerable to artillery attack or CBRN attack. For this, it is necessary to coordinate the S-4 Logistics module with the S-2 Information and S-3 Operations modules, which control the maneuver so that the logistic maneuver is integrated into the brigade maneuvering plans.

Periodically, generally every 72 hours, based on the known threat level, it is necessary to move the structures that provide campaign services to reduce their vulnerability to detection. It will maximize the use of covering, natural camouflaging, dispersion and protection provided by the land (trees, ditches, other natural camouflage forms). Also, the military from logistics structures or contractors will not discuss with the locals about the future movements of logistics structures.

In order to ensure the campaign services necessary for the deployment of the defense operation, it is necessary to cooperate with the engineer structures for logistics to prepare the locations of the structures for feeding, bathing and washing the linen (drainage channels, domestic water evacuation, concrete platforms for location of logistics equipment, etc.) and water supply (digging wells).

In the case of *stability operations*, in the initial phase, the campaign services provided by the military structures are widely used. Subsequently, the footprint of the military logistics structures is reduced, depending on the possibilities offered by the area where the operation takes place, the campaign services being passed to civilian contractors or to Host Nation Support (HNS). During these operations, joint, multinational or intergovernmental support requirements may arise. As a peculiarity, it will be taken into account that logistic assistance to one party may affect relations with other parties involved.

In *support operations*, as in the ones of stability, the campaign services provided by specialized military structures are used at the beginning of the operation. The transition to the provision of these services by civilian contractors depends on the period of the operation. During these operations, there may be requirements for logistic support at the common level or for interagency.

In *multinational operations*, logistics acts to provide campaign services to combat forces as well as combat support targets actions such as local contracting or Host Nation Support. The aim is to reduce the costs caused by the movement of staff or specialized economic operators from the countries of origin of the structures involved in the operation through the local recruitment of the labor force able to provide certain campaign services.

In NATO-led operations, NATO and participating nations are responsible for providing campaign services to support operations. This collective responsibility should encourage the establishment and joint use of cooperative logistics capabilities and resources to effectively support multinational force. However, each individual nation has, ultimately, the responsibility of providing logistic resources for its own forces.

Regarding the provision of campaign services in multinational stability and support operations led by the Alliance, the NATO nations and NATO (due to common responsibilities) agreed to be assured either individually or through memoranda, technical agreements or mutual agreements.

Depending on the type of operation involving the mechanized brigade and other factors that can influence the provision of campaign services (the climate, environmental conditions in which the operation takes place), some of the services can be more important than others. For example, in the case of operations in a desert climate environment, the provision of military equipment for bathing or washing of individual equipment can become a priority for the commander of the force.

However, although military theorists have attempted to make a hierarchy of campaign services, the experience gained in the operations carried out by the Romanian Army structures outside the national territory has shown that these services cannot be hierarchized in terms of importance, each of them having the appropriate weight of maintaining a high morale of their troops.

In the following pages, we will present some theoretical aspects that regulate the way in which the operating campaign services are organized and ensured.

Feeding the Military Forces

As a component of campaign services, feeding the military forces in quantity and quality standards provided by the instructions directly influences the health of the military and contributes to maintaining their high morale.

At the level of the mechanized brigade, but also at the level of each battalion in its organization, the planning of the nourishment for the military is the attribute of the logistics module manager and of the officer responsible for feeding the forces.

During the operations, the organization of feeding the mechanized brigade staff the following shall be taken into account: the degree of providing of existing agro-food stockpiles on the structures and the possibility of their completion; the role, the place and the missions of the units that form the mechanized brigade; the possibility of adapting the feeding regimen to the tactical situation; the means of preparing the existing food and the possibilities of supply; the possibilities of using mechanized means; rationalization of consumption in the event of limitation or disposal of resources at long distances; the possibilities of providing drinking water necessary for the preparation of food; limited feed-in capabilities for staff conducting isolated fighting; the possibilities of transportation of the prepared food, so that it can reach on time and under healthy and hygienic conditions in the military.

Regarding the process of organizing the feeding of troops, it consists of: establishing the feeding regimen, depending on the mission and effort; drawing up menus and table of distribution of agri-food products; organizing the storage, distribution and processing of agri-food products; organization of food preparation; transporting and distributing food to fighters; organization of food serving.

Depending on the tactical situation of the units and subunits of the mechanized brigade, the mechanized brigade commander, at the proposal of the chief of the logistics mode, establishes one of the following feeding regimens, with three meals in 24 hours: normal feeding regimen with hot food when there is a possibility of the thermal preparation of the food products, for the three daily meals), regimen of fighting with individual rations (when fighting actions) and regimen of feeding with cold food, when warm food cannot be provided.

Feeding is done with respect to the calorie and value threshold, according to the food norms provided for each category of soldiers. Foods provided by the food rules to which the military is entitled are granted free of charge.

In situations where certain units or subunits perform isolated missions, the commander of that structure, depending on the concrete situation, may change the feeding regimen of the troops that he leads.

For units and subunits of the mechanized brigade which are part of the immediate hiring force and the supporting force, the feeding of the troops is accomplished differently during the preparation and conduct of the military actions. During the preparation of the operation, this activity is carried out under the hot food regimen, and during the operation of the operation as a battle ration.

For units in the subsequent hiring force and the logistic support unit (subunits), feeding can be performed both during the preparation and during the hot food operation for all three meals.

The feeding of the wounded and hospitalized patients within the disposition districts of the medical treatment facilities is carried out in compliance with prescribed diets by the physician without exceeding the amounts of food prescribed by the rules.

Water Supply of Troops

The organization of troop water supply is a complex process requiring specialized expertise from at least three distinct domains (engineer, medical, logistics). At the level of the mechanized brigade, the organization of this complex process requires the involvement of three decision makers within the brigade headquarters: the engineer specialist officer for drilling the water wells, bringing them to the surface and purifying the water; the chief medical officer for drinkable water quality permit and the head of logistics for storage, transport and distribution of water to units and subunits in the organization chart of the great unit[6].

In order to organize the water supply of the forces during the operations, the following measures shall be taken at the level of the specialized structures of the mechanized brigade: the existence of facilities for water supply from public or private sources shall be evaluated; recognizing and evaluating other water sources previously uncovered to extract water from both surface and depth sources; examining the water quality and deciding whether the water is potable or it requires purification; purifying the water using the water purification system; determining whether the water is potable after the purification process; storing purified water; transporting and distributing water to the units of the mechanized brigade organization.

The sources used to provide water to the forces in operation are as follows: existing sources (water networks, wells, underground water abstractions); surface sources (rivers, rivers, ponds, lakes, seas); groundwater sources; atmospheric precipitation (rain, snow and ice from the ground or underground).

The water supply is preferably made from the public water supply system or from local sources. When there are no such sources in the military action area or when water supply is disrupted during the operations, the logistics engineer forces must be able to meet the needs of drinking water and domestic water, to maintain operational capacity through emergency water supply from its own resources[7]. Specialists in the field of logistics engineer play a major role in the production and purification of water, contributing directly to the filling of the water deficit found at the level of the mechanized brigade.

In this situation, the available underground sources are considered in the first instance because they require a minimal process of purification or directly provide drinking water. The water from these underground sources is obtained by drilling down to the groundwater wells. The wells will usually be drilled by the drilling group of the engineer company part of the engineer battalion structure of the division, in the layout area of the mechanized brigade units, upon request.

If the underground sources are missing, emergency water supplies are made by specialized structures in the brigade battalion organization or in the upper echelon, using other sources such as: surface water, precipitation water or even wastewater, the latter only for obtaining water technology.

For the provision of drinking water, surface sources will be exploited to a limited extent and will operate until the groundwater is brought into operation; these sources will be used, however, in order to procure water for technical, decontamination and fire fighting purposes[8].

Drinking water must meet the quality standards set for water in the public water supply system. In emergency situations, a minimum quantity of 5-7 liters per day per person must be ensured for a period of up to 7 days.

The necessary information on the existence, availability, location and type of water sources (developed – public and private water supply networks or underdeveloped water – springs, groundwater, freshwater, saltwater, surface water) are obtained by the research engineer subunits of the company's engineer combat organization or the organization support companies of the fighting forces of the brigade, and details of the quantity of water that can be supplied, the flow, the facilities for capturing, extracting, storing and distributing, transporting and securing water, are established by the specialized units (engineer logistics, logistics, medical) of the major unit[9].

Verification of water quality is performed, both with the means of verification existing at the level of the specialized structures, as well as in the specialized laboratories, by analyzes performed on water samples collected daily through the medical service. Water is only consumed after chemical, bacteriological and radiological (CBR) testing, and after receiving the medical opinion from the chief medical officer of the recipient unit / major unit[10]. The determination of water quality in terms of contamination is carried out as a result of the CBR verification performed by the specialized structures in the organization units of the mechanized brigade.

Other storage capacities available in the logistics area of the brigade may be used during water operations, or they can be run with the support of engineer logistics structures, well-covered and adequately covered ponds, the capacities of these tanks being determined according to storage needs.

Viewed from the perspective of the logistics bodies of the units of the mechanized brigade, the water supply needs regard the water needed for the preparation of the military, the drinking, the personal hygiene, the medical service needs, but also the household needs such as dishwashing, washing linen or for technical needs (filling up liquid in the cooling installations of the technical equipment). All these needs involve major water consumption and show that water supply is essential especially to meet the individual needs of the military.

The drinking water and the preparation of the food will be ensured from the sources authorized by the military and territorial sanitary bodies, in compliance with the drinking standards.

At the level of the mechanized brigade, the person directly responsible for organizing the water quality assurance tests for consumption, obtained from surface or deep water sources, with the tasks of permanent monitoring of its quality and interpreting the results of the performed tests, is the chief doctor of the major unit. In order to approve the distribution of water required for the feeding of troops, funeral services, bathing and bed linen laundry, the logistics structure will cooperate and coordinate alongside with the preventive medicine specialists.

The preparation, timely and hygienic distribution of food to the military staff depends on how the drinking water supply is provided to the mechanized brigade.

Also, the activity of troops bathing and laundry washing is directly influenced by the existence of water supply sources and the quantity of water that can be provided to the mechanized brigade.

Troops Bathing

Bathing of troops of the mechanized brigade units and subunits is usually performed in relation to the tactical situation in which the structures are located. As a rule, the bathing of the soldiers is executed on two days, and if the situation does not allow, weekly, in permanent or mobile facilities, especially designed.

At present, in the mechanized brigade organization chart no specialized structures are provided to ensure the bathing of the major unit's troops. The specialized guidelines in force state that bathing of troops is organized and is usually carried out by its own forces, but it is specified that, if this is not possible, the units may conclude contracts with the economic operators in the military actions area which have these services as their object of activity.

In special situations, when the tactical situation or the time available does not allow the bathing of the troops by one of the above-mentioned modalities, the shower and disinfection facilities fitted on the decontamination vehicles equipped within the CBRN protection sub-units can also be used.

During logistics recognition, specialized personnel participating in the activity will identify the bathing possibilities available in the logistics responsibility area of the mechanized brigade in order to allocate them to the subordinate structures through the logistic support order.

Selecting the location of facilities for military bathing or linen washing and cleaning equipment is done taking into account the number of soldiers who will benefit from these services, available locations and time constraints. The layout location should be as close to the supporting structures as possible, the ground should be slightly inclined (to facilitate waste water evacuation), be close to a clean water source and close to communication routes and provide natural coverage and masking. Also, in order not to contaminate the underground surface, domestic wastewater should be discharged through a dredged ditch or using an exhaust system available in the area.

If the water available in the area is not drinkable, for bathing and washing it is also possible to use contaminants-free non-drinking water, which has previously been disinfected with chlorine.

In order to keep proper hygiene and to avoid illness, it is necessary to change the linen after bathing.

Washing linen and equipment cleaning

Washing linen and personal equipment are essential services in maintaining high morale and an appropriate level of personal hygiene for the military. The changing of the military linen is usually done within 2 days, and if this is not possible, no later than 7 days.

As it is the case with bathing, although linen washing and equipment cleaning can be provided by their own forces, there are no organic structures specializing in providing these services at the level of the mechanized brigade. If they cannot be accomplished by their own forces, there is the possibility of concluding contracts with economic operators (laundries and cleaners) in the area of military actions, which have as object of activity these services, as mentioned.

Another way of organizing the provision of these services at the level of the mechanized brigade is the installation in the disposition districts of the subordinate units of the brigade, when the situation permits it, of the laundry room within the division's support battalion organization. Installation of this laundrette involves the existence of natural land coverings that provide good masking conditions and flowing water sources with a sufficient flow rate to allow it to operate in good condition. The laundry room will operate after a program developed by the logistics module and approved by the brigade's chief of staff.

When the situation requires it, as an alternative to the aforementioned solutions, an improvised laundry can be set and washing the linen can be executed with staff provided by the local public administration bodies in the area of responsibility of the mechanized brigade.

Under special circumstances, with the commander's approval, washing the linen can be performed using the engine machine for equipment decontamination existing at the CBRN company of the mechanized brigade[11].

Washing the linen of the sick or wounded soldiers is carried out by the care of the medical structures they are hospitalized in, inside the laundries that these structures have at their disposal. Where medical facilities do not have such laundries, the washing of the linen is carried out at upper level medical facilities or civil laundries in the dispensing area.

As a general rule, when the intensity of military activities is reduced, these services can be easily provided by the local contractors available in the area of the operation. If the intensity of military activities is increased, as a rule, the washing services are assured, at the presence of the opponent, by their own forces or by specialized military structures, and by contracting specialized economic operators for units in the second echelon.

Postal and courier services

Depending on the territory in which the operation takes place (on national territory or outside the national territory) and the type of operation involving the mechanized brigade, the way of providing postal and courier services has certain peculiarities. In general, postal and courier services are organized through the national postal service, the private agencies, the Lead Nation or the Role Specialist Nation where a state has been appointed to provide this service or when the service is included on the list of those offered by another state with which Romania has previously entered into a technical agreement on theater support.

Pursuant to the *Convention on Postal Services for Military Units at Peace, Crisis and War* (original title *Convenției privind asigurarea cu servicii poștale a unităților militare pe timp de pace, în situații de criză și la război*) concluded between the Ministry of National Defense and the Ministry of Communications and Information

Society, approved by Order of the Minister of National Defense number M-61 of 02.06.2009, the preparation of the national postal system for defense is ensured by the Service for the Ensuring the Continuity of Postal Communications and materializes through the Mobilization Plan of the National Company Posta Română S.A.

In operations carried out on the national territory, in order to provide the military postal services, the military units shall be registered in the postal units based on the request. With this request, the structures signal the presence in the area, and may request the opening of a post box. At the regional transit centers, county post offices and regional post offices, the head of the particular postal sub-unit shall keep and update the records of the military units in their areas of responsibility, respecting the confidentiality policy.

Under the conditions of establishing the state of siege, emergency and war, the postal items which contain only the indications of the military units without mentioning the localities are mapped, with the support of the military postal structures at the National Center of Transit Brasov and redirected to the national postal network as provided for redistribution in accordance with the specified dislocations.

Upon declaring the state of crisis, in time of war, the sub-units of the National Company Posta Română S.A. will allow establishing and functioning of the military postal units in the spaces owned by them. In the case of the eviction of institutions in the operation areas, the offices of the postal offices will be taken over by the military mailboxes operating in that area on the basis of a delivery receipt form.

When deploying in the theaters of operation on the territory of other states, the postal services of the military units and their personnel are as follows: from the country, the correspondence is carried through the care of the Romanian Company Posta Română S.A. to the nearest point of service of the postal administration with which the Romanian Postal Service has commercial relations; from this point, the transfer of the postal items is made according to the agreement between the military unit and the postal administration in that country after the registration of the military unit deployed to the nearest working point in the postal network of the respective country. The National Company Posta Română S.A. will ensure anti-terrorism verification of these postal items.

The postal services are provided through the postal sub-network, as well as by the military postal services or the persons empowered in the military units. Military post offices ensure reception at / from the postal subunits where each military unit enrolled in order to be served.

In the NATO system, at the level of the armed force commander, a structure is organized to co-ordinate, in particular, postal and courier services.

Each nation is responsible for organizing and controlling its own military system for postal and courier services. For the provision of courier services, among other specific responsibilities, nations are responsible for providing security measures to prevent terrorist access to mail, security checks, physical processing of items by scanning, to detect chemical agents, biological agents, explosive substances, or improvised devices and by ensuring the quarantine of suspect items.

In order to meet the security requirements and to operate appropriate facilities, it has been agreed that a Member State's military and courier postal services operating on the territory of another Member State should benefit from a number of facilities, among which the establishment and the operation of military post offices.

Units or detachments that do not have their own post office of forces will be served by the postal office of the forces operated by the responsible nation for the provision of services in the location / settlement area of those structures.

The person in charge of the postal services of the organization managing the area is responsible for preparing the necessary arrangements for this. On the basis of reciprocity, the personnel of the NATO forces benefit from the forces postal office of the same privileges enjoyed by the personnel of the nation's armed forces operating this office.

Transfer points for correspondence transferred between the armed forces and the civilian postal authorities will be established following discussions on the basis of agreements between the parties involved.

Each nation involved will provide the means it deems necessary for the transport of mail. However, whenever the situation requires shared use by NATO nations of limited means of transport, this will be done fairly.

In operations conducted under the aegis of the UN and the UN order, the postal and courier service can be provided on the basis of HNS through the existing postal service in the country of military action. Correspondence arriving from the country for the military personnel in their own quota is delivered free of charge, insured from the national postal authorities.

In order to increase or maintain the morale of the troops, every effort will be made to ensure the delivery of the personal correspondence of the subordinate troops. The logistics system of the brigade can provide postal services for units hired through the supply chain. The delivery network must maintain, through postage and daily courier activities, the link between the command of the mechanized brigade and its subordinate units.

Funeral Services

Considering the participation of our army in the past few years to more and more international missions and knowing that this participation also involved the loss of human lives among Romanian soldiers, the funeral service has gained increasing importance through the influence which it has on the morale of troops and on public opinion.

According to the national legislation currently applicable, the funeral services are in national responsibility and presuppose "the burial of the deceased soldiers in the area of operations after their evacuation from the battlefield by teams belonging to the non-combatant formations, … with the provision of the religious confession corresponding to the confession to which they belong, once they have been gathered, identified and registered"[12].

Formalities in case of death are national responsibility, and each nation must have their own specific instructions in this respect. In general, services of graves recording include all stages, starting with the search and recovery process of the deceased person's remains until the emergency funeral on the battlefield or returning them to their close relatives.

Responsibilities in line of the evidence of graves begin with the unit where the death of the soldier takes place. The units will recover their deceased people and evacuate them to the nearest point of collection and evidence of graves. Situations of tactical emergencies may require urgent procedures in this regard[13].

The burial of the soldiers from their own forces or those of the enemy who died in the area of the operation shall be executed according to the regulations in force, with the assurance, where possible, of the religious assistance corresponding to their confession after they have been gathered by the personnel designated by the unit commander, identified and registered.

The deceased soldiers who are part of the Allied armies operating on the territory of our country, with the approval of the senior echelon, depending on the situation, are surrendered to their representatives or buried by the commander of the unit, keeping their records.

Deceased militaries of the enemy's armed forces are identified, entered into a separate record, drawn up by the great unit in the line of which they have been found and buried in separate, individual places, except in cases of force majeure requiring a collective burial place[14].

The evacuation of the deceased from the operations area of the mechanized brigade to its place of origin shall be done on especially designed transport circuits. Transport of the deceased from the assembly area to the established cemeteries will be done with other motor vehicles than sanitary.

The places where deceased soldiers are buried are written on maps or plans and marked with visible signs. These maps or plans are entered into the archive of the mechanized brigade that carried out the burial.

Contaminated deceased people from the operations area of the mechanized brigade will be evacuated or buried temporarily with the consent of local authorities, and their temporary burial site will be indicated on a special map.

The personal belongings of the deceased soldiers who have been identified are dispatched through the normal logistics support channels to their families, or, in the case of the deceased military belonging to the enemy, to the competent national authorities.

According to NATO's logistic doctrine for land forces, the organization of this service requires each nation to have specific instructions in this respect, detailing the entire process, from searching for and recovering the remains of the deceased people to the emergency burial on the battlefield or returning them to their close relatives.

Our national legislation makes very brief references to these services, and at present, at the level of the Romanian Armed Forces, there are no specific instructions elaborated on this complex process of managing the deceased personnel during the military actions.

Moreover, although funeral services fall under national responsibility, at our army level there are no specialized personnel or structures in such services. That is why I believe that it is necessary to take immediate measures on this line in order to regulate with greater clarity the funeral services.

Taking into account the experience gained by the military of our army in the joint missions with other NATO member states, I think that a starting point and a possible solution at hand in solving this problem is studying, understanding, adapting to the requirements of our army, and then the adoption of a viable model used by one or more of the NATO member states to organize and provide funeral services.

Conclusions

An integral part of the operations plans, the logistic support of the forces involved in operations is fundamental to ensuring the success of the mission. Achieving logistic support and campaigning services to the military call for increased attention to the changing conditions of the battlefield.

As a result of this permanent dynamics, the system through which campaign services are provided must be flexible and able to support decisions of force commanders.

It is also necessary that the provision of the campaign services be the result of a forward-looking process, the appropriate solving of the logistical tasks being one of the basic missions of the logistics structures.

NOTES:

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ANALYSIS OF EXISTING CONSTRAINTS IN THE ARMED FORCES INFRASTRUCTURE

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The inclusion of our country among NATO member countries has led to the restructuring and reshaping of the Romanian Army, starting with the abolition of the compulsory military service and the establishment of a professional army, leading to the modification of the functional requirements that the barracks infrastructure must respond to for the smooth functioning of the deployed structures. In this respect, a new conceptual approach is needed to bring about the systemic reconfiguration of all elements of infrastructure in order to provide the necessary facilities military structures. Infrastructure Project Management could describe the procedures and mechanisms for military commanders to draw up plans by military commanders to avoid addressing ad hoc or fragmentation of military infrastructure work to barracks in administration or that they use.

Keywords: *evolution; military construction; charity troops; military structures; planning.*

The appearance of constructions and disposition of military troops is lost in ancient times and can be identified with the military history of the Romanian people, and the history of military construction is an essential component of it. The level of development of troops or armies and their requirements for the defense and shelter of troops and resources have always dictated the evolution of military constructions, their complexity rising in relation to the state of improvement of combat tactics, weapons, tools and forces necessary to fulfill military construction.

Unlike the evolution of other military specialties, the military construction activity and troop accommodation was marked differently by the postwar years and the events of the two world wars when all the financial and material efforts were directed either to meet the needs of the battlefield, or for the recovery of the economy. We have found that in austerity situations, not only new buildings for the army are given away, but also maintenance and repair work that go beyond what is strictly necessary. Taking into account the exposed ones, we considered the historic segments of the years 1830, 1859, 1877, 1918, 1940, 1945, 1989 and 2004.

Between the events of these years, the military construction and troop accommodation had different developments for each of its components: construction, patrimony management, energy supply, and troop accommodation.

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The Evolution of Military Buildings and Charities

In the fourteenth and nineteenth centuries, the Romanian people fought against the domination and expansion of great powers of the time: the Mongols, the Kingdom of Hungary, the Kingdom of Poland, the Habsburg Empire and the Ottoman Empire. The external conjuncture had a major impact and significantly influenced the evolution of the military system. The leaders of the Romanian countries have properly formed the armies, command and organizational structures, their training and endowment, as well as the arrangement of the defense constructions.

Between the fourteenth and sixteenth centuries military defense constructions experienced several stages of development and were dispersed throughout the Romanian territory from borders to center, remarked by the ingenuity and the multitude of technical solutions adopted according to the problems identified due to the configuration of the land and the materials available at that time.

Following the Russian-Turkish War carried out in 1828-1829 and the favorable situation following the Adrianople Peace Treaty (1829), regulations were drawn up for each of the two principalities. As a result of mutual consultations, the two regulations contained identical rules of organization, management and administration, but also some insignificant features.

The organization of national militias was detailed in a separate chapter containing detailed provisions on the recruitment, endowment, organization, training and resources of the troops, their role and missions, as well as the deployment of each subunit or unit.

The problems of construction and accommodation were not so explicit as those concerning technical endowment, equipment, feeding or health care, but it was stipulated that "a specialized law will lay down the duties of the inhabitants for the military accommodation and their obligation to obey it until the barracks of the state are built or the armies will find the means for these accommodations"[1]. The establishment of the Romanian National Army, which was constituted by units with stable organization and dislocation, led to the necessity of constructions that would provide suitable conditions for carrying out specific activities such as: feeding, hygiene and rest of troops, housing of animals, storage of material goods, order, security, etc. Because of the poverty situation, at first, the main form of assurance of the necessary buildings was the requisition of spaces that satisfied at least the minimal needs, then, in the urban area, available constructions were rented and adapted.

As far as new constructions are concerned, they were made especially for the sanitary cord (quarantines, barracks and pickets) in temporary buildings made of light materials (hut or hutments with walls made of fence of rods covered with mud, roof of reed or straws) which assured the necessary constructions before the end of 1838.

The difficulties encountered in ensuring the living conditions, the building and maintaining of troops' discipline, as well as some negative consequences for the life of the citizens where the units were deployed led to the beginning of the construction of some barracks and places corresponding to the specific needs of the army. The task was assigned to "Departments of Internal Affairs" on which the armies depended administratively and which comprised a "section of engineers" that ensured the design and construction of public buildings, including those for the army. The regulations of that period did not contain provisions specific to the maintenance and repair of military constructions; they were taken by orders of the commanders according to their household spirits.

Maintenance and repair work were largely executed by the army, and the most important of them by specialized civilian contractors employed through public procurement. The execution of the new constructions and the arrangements made during the occupation of the Romanian Principalities by the Tsarist troops used specialized personnel from the occupation army to guide and design the necessary works.

From the information at the time, we find out that the construction projects were first made, then analyzed by the army staff that was publishing the auction. The private entrepreneurs wishing to execute these works participated in the auction and the construction was entrusted to the one who offered the most convenient conditions. Finally, the work was received by a committee of specialists, after which it was handed over to the commander of the beneficiary unit.

The influence of the Tsarist army's specialists in constructions ceased with the withdrawal from the Principalities and the assumption of the tasks related to the design and realization of the military constructions came to the specialists from the "section of engineers" who were engineers, architects or construction technicians with studies in Vienna, Berlin or Paris who, although they did not know the achievements for the army of the great powers in Europe, had solid theoretical and practical knowledge[2].

The concept of the structure of the barracks and the internal organization of each category of buildings formed in a long time; the first barracks had a pronounced experimental character, with functional shortcomings, some of which remained unique. Buildings built between 1842 and 1859, from a constructive point of view, had durable structures that allowed many major repairs, adaptations and improvements. Testimonies of these are today the buildings of the former Malmaison barracks, the building for the Central Military Hospital, and the barracks (Host's Palace) on Copou Hill in Iasi, which are still in use.

Considering that until 1859 a small number of barracks and places were deemed necessary and sufficient, their realization and management could be done according to the rules used for any public construction, consequently the persons responsible for the problems of the military constructions had other tasks in the field of administration and logistics services. Preserving the hygiene and functionality of the construction by performing maintenance and repair work was ensured from the global amount allocated from the budget for each unit at commanders' will.

After the unification of the principalities, along with the measures for the development of the army, there was a need to create specialized bodies and clear and unitary regulations for the construction and administration of the military barracks and

a – *view from inner yard, year not mentioned*

b – *current view*

Figure 1. *Malmaison barracks, Plevnei road, Bucharest*

Source: *https://armyuser.blogspot.com/2009/06/cazarma-malmaison.html*

Figure 2. *Central Military Hospital, Bucharest*

Source: *https://jurnalul.antena3.ro/stiri/observator/spitalul-militar-va-avea-un-nou-corp-de-cladire-cu-12-etaje-heliport-si-centru-de-arsi-749922.html*

a – view from 1900

b – view from 2000

Figure 3. *Host's Palace, Copou Hill, Iași*

Source: *http://www.bg15mc.ro/?page_id=116* si *http://wikimapia.org/22986395/ro/Palatul-Ostirii*

In figures 1 - 3 are represented some important buildings, with remarcable historical value, which once belonged to the Románian army, some of them still being in its patrimony nowadays.

fields. Specialized activity on military construction was entrusted to the fourth military branch created in the Romanian army after infantry, cavalry and artillery: engineers. For the coordination of construction activities, through the High Command no. 83 of 12.11.1859 the "General Staff of the Romanian Army of the Romanian Principalities" was constituted, which among others attributes had those regarding "all the works related to the construction and repair of military buildings for barracks, guards, stables, hospitals, prisons and others"[3].

The maintenance and repair of the existing constructions was detailed in the regulations on the interior service of the troops, which were also the first military regulations. In accordance with their provisions, commanders were responsible for the maintenance of buildings, whether they were state-owned or leased.

By High Decree no. 517 of 03.01.1863 the "BARRACKS REGULATIONS" were approved, the first regulation in the history of the Romanian army, which attempted to regulate the entire building-accommodation activity. The new regulation responded to the need to lay down a specific framework of legality and authority, the designation of specialized and organized personnel with clearly defined responsibilities and relations with the other components of the army, it was in fact a processing of the French similar regulations but adapted to the specific ones of the Romanian army. The regulations specified the principles of administration, operation, storage and repair of barracks, as well as the general rules for the execution of new constructions, repairs and maintenance. The regulation might have seemed enormous at that time because it brought out in the open many unknown notions and set out ways to solve current situations by unusual and unused ways in almost 30 years of existence of the modern Romanian army.

The increasing number of units, staff size, the emergence of new specialties and their structures have called for the creation of necessary facilities for accommodation, storage, training, etc. New barracks were built, with modern military facilities such as "Alexandria" (1864) and "Cuza" (1865) in Bucharest, each of them being able to shelter the troops and materials of an infantry regiment; those from Focsani, Ploiesti (1863) and Buzau (1864), each for a cavalry squadron. Specialized spaces for military hospitals in Bucharest (1858-1861), Bolgrad (1863), Ismail (1863) and Galati (1865), for the military school (1862), the Ministry of War typography, both in Bucharest (1859), Bucharest - Colentina (1861), and Cotroceni (1863). Numerous other military constructions were rebuilt, expanded, adapted to the growing demands generated by the development of the national military body[4].

In the decade before the war for independence, the troops accommodation had improved. The barracks for units and subunits of all branches were raised at an alert pace, facilities for military industry, hospitals, warehouses for storing weapons, ammunition, equipment, food, etc. Through these, the units and the commands were provided with the large part of space required for the troop accommodation in satisfactory conditions of comfort, hygiene and functionality, and the storage of weapons, equipment and military supplies in an environment suitable for maintenance and conservation.

The leadership of the War Ministry undertook, during 1878, a series of measures aimed at improving the situation of military construction, while loans for the repair of degraded buildings were also allocated.

The issue of military construction was regulated on new bases by the "Army Commands Law", promulgated on May 28 / June 9, 1882. The law referred in particular to the buildings of the territorial army, whose situation was at that time far worse than that of the regular army. Article 23 provided the county administration with the obligation to build the barracks and warehouses needed by Dorobants and Cavalry at their expense, in accordance with the plans of the Ministry of War.

As a result of the work carried out in the engineer service, and subsequently by the Engineers Department, in order to lift military edifices, military and civilian experts set up a series of standard buildings, recommended for military units. The period of searches and experiments lasted in general until 1886. For this reason, the buildings built between 1880 and 1886 were characterized by a rather high typological diversity. The so-called "major Gheorghiu-type" barracks were built, according to the "decentralizing" system, consisting of buildings with ground and upper floors where the soldiers were housed. The capacity of such a building was two infantry companies or two cavalry squadrons. Another model of the barracks experienced during this period was the so-called "centralized type", in the design of which the plan of the French barracks with a central corridor called "Colonel Emy" was taken into account. For artillery units, "the artillery-type" barracks were set up, consisting of ground and floor pavilions, each housing two batteries. The builders respected these parameters for the artillery barracks in Craiova, Pitesti, Slobozia, Focsani, Botosani (for a regiment) between 1881-1884[5].

After 1886, the military architects set themselves in a barrack plan based on the "decentralized type - Captain Alexandru Pavlo", to which the following parameters were set: separate pavilions for the troops, administrative services, education, infirmary, meals, kitchen and supply service: armaments, ammunitions and equipment (ground floor buildings); regimental workshops: tailoring, shoemaking, armoring, blacksmithing, woodworking and a shed for repairing endowed vehicles; the building of the stable for the officers' horses and the duty horses of the unit, the building for the service vehicles and the draw for the "regimental train" vehicles. The materialization of these projects was mostly done through construction companies or private entrepreneurs, who were entrusted with the construction of military buildings through contractors. As a result of the efforts to complete and arrange the construction fund for the Romanian troops, during the outbreak of the First World War, the Ministry of War managed to secure the majority of the buildings necessary for the accommodation of the units, the military materials warehouses and the polygons for the completion of the combat preparation.

During the period between the two world wars, there could be noticed a separation of the activity of the building bodies and of the military domains from the engineer troops, which proved to be an inspired measure. During this first period of the construction bodies activity, all the old army barracks were brought back to a good technical state by current repair works and a new major construction fund was created. Equally important in the accomplishments of the military builders of this period were: the organizational system articulated with the imposed legislation and regulations, as well as the body of specialists created by selection, training and development.

After World War II, major repairs were planned and executed, new barracks, installations, camps, warehouses, motor pools, halls, hangars, fire ranges, airfields, workshops repairs, plumbing, central heating, electrical records, housing for personnel, recreational facilities, military hotels, schools, hospitals, etc. The new constructions were a great step forward in terms of structure, functionality and facilities, appearance, layout and thermic insulation.

Constraints currently existing in the armed forces infrastructure

The inclusion of our country among NATO member countries has led to the restructuring and reshaping of the Romanian Army, starting with the abolition of the compulsory military service and the establishment of a professional army, leading to the alteration of the functional requirements to which the barracks infrastructure must respond to for the smooth functioning of the deployed structures. In this respect, a new conceptual approach is needed, which will lead to the systemic reconfiguration of all the infrastructure elements, in order to provide the necessary facilities for the military structures. Infrastructure project management could describe the procedures and mechanisms for developing plans by military commanders avoiding ad hoc accommodation or fragmentation of military infrastructure work to barracks in administration or that they use.

Significant restructuring of defense systems over the past two decades is a global feature of the international security environment, but it also includes certain attributes specific to Romania as to the causes that triggered it, including:

- Army reform imposed by Romania's EU and NATO accession conditions, which is currently underway on the basis of the Army Transformation Strategy (2007) and focuses on integrated defense resource management;
- the abolition, as of 2006, of compulsory military service by young people, resulting in a decrease in the number of military personnel;
- the fiscal and financial policies assumed by various governance programs, which have changed substantially every four years, have also had the consequence of reducing the state budget allocated to the Ministry of Defense to a much lower value (1.42% of GDP in 2014) to make it possible to

ensure the minimum necessary to maintain the infrastructure at a satisfactory level.

National defense programming documents, including the National Defense Strategy (2015), the Military Strategy of Romania (2016) and the Armed Transformation Strategy (2007), aim at securing national defense by developing an optimal defense capability and aiming at the modernization of the military infrastructure, improving defense resource management methods and practices, improving the efficiency of the planning, programming, budgeting and evaluation system, reducing the size of the forces, moving from threat-based planning to capability-based planning. As regards infrastructure, these documents aim at:

- the standardization of the infrastructure of large units and units of the same type in order to assure the accommodation and training of forces;
- developing the necessary infrastructure for deployed allied forces and pre-positioning of their equipment;
- the correlation of military infrastructure with missions, the structure of forces and the process of developing military capabilities;
- providing the necessary facilities to restore the fighting capacity of personnel of own and / or allied forces;
- ensuring the host nation support for foreign armed forces in transit, stationing or carrying out operations on Romanian territory;
- jointly using training facilities and building a training area for urban combat;
- the establishment of military bases and the development of the housing fund for the military.

Defense planning requires integrated defense resources management tailored to actions under the country's defense capabilities' transformation, such as: development of infrastructure elements to provide deployment, stationary and training capabilities for national and allied forces; developing an integrated anti-missile defense system based on detection and interception capabilities; restructuring, efficiency and cost-effectiveness of the national security industry.

The process of continuous transformation of the army, as a power tool, keeps its conservative character aside and, on the other hand, it gives it a prospective one. Among the determining factors of the transformation of the armies there are:

- emergence of new forms of security challenges;
- new military technologies;
- new tactics and strategies;
- the need to respond to social constraints (democratic rights, war laws, etc.);
- trying to gain an advance in front of your opponent / enemy / partner;
- combining new structures, methods, techniques and technologies in the response to that the military instrument gives to security challenges (civil-military cooperation – CIMIC, PSYOPS, etc.).

The army, as a power tool, is in a continuous dynamic process. The transformation process is accompanied by distinctive features of mobility and flexibility. Abandoning old security policies is now, more than ever, essential in rethinking defense strategies. Consequently, it is imperative to intervene not only within the special areas (barracks) but also in their tangential points to the "external environment", that is to say, at their limits, which require essential changes. Therefore, it is obvious that there is a need to rethink especially designated spaces, both in terms of defining and categorizing these categories into a particular typology, and from the perspective of their use and operation in a specific landscape.

It does not need mentioning that nowadays the army refers not only to the physical boundaries of space, but to a defense concept that presupposes the integration and adaptation of the spaces for the preparation and development of the domain to the new needs of society.

A new conceptual approach is needed to reconfigure all infrastructure elements in order to provide the necessary facilities for the education, training, recreation of own and / or allied forces, taking into account both the new operational requirements of the deployed forces and the fact that the existing infrastructure is obsolete, and the maintenance and operating expenses involve the allocation of significant financial funds. The infrastructure of the real estate patrimony is an asset belonging to the public domain of the state and provides the basis for the construction of accommodation facilities and training activities of the military structures.

The restructuring and modernization process of the Romanian Armed Forces, carried out in order to align with Euro-Atlantic structures, led to the reduction of military personnel from approximately

350,000 people in the period when military service was compulsory, to about 90,000 at present.

This restructuring has naturally resulted in a reduction in the number of operational armed barracks of the armed forces, as well as the personnel that administers, manages and maintains them.

The issue of these barracks, which exceeded the needs of the army, was addressed in 2007, by initiating the process of transferring a number of dismantled barracks from the administration of military structures in the administration of specialized structures of domains and infrastructures. The purpose of the action was to relieve the military fighting structures from the task of managing the dismantled barracks and concentrating them exclusively on the active barracks, as the restructuring process led to the decreasing number of the staff of the administrative structures (administration formations) of the military structures.

It has also been envisaged that the specialized structures of the defense system will establish a judicious program for the preservation of these barracks and will provide the premises for their valorization in the forms allowed by the legal framework in force. In this respect, these structures have been given the following tasks:

- managing, preserving and maintaining dismantled barracks;
- assessing the potential of barracks that have become available, in order to change destination, capitalize on law or conversion;
- identification of means of capitalization, according to the law, in the medium and long term.

Real estate patrimony will face a number of challenges and opportunities in the coming years. All clues show that depending on how it is argued for, infrastructure development will become more and more important. Challenges and opportunities include:

- real estate management;
- reviewing defense policy;
- the use of public-public partnerships or private financing initiatives (PPPs / PFIs);
- sustainable development of infrastructure
- public spending accountability;
- recruiting and maintaining staff, increasing the quality of life;
- security;
- the need to increase cooperation between services for the structures.

The defense strategy raises fundamental questions, which will eventually impact on program directors and implicitly on facilities within the infrastructure:

- what happens to the infrastructure that has become available as a result of the restructuring process that the structures go through?
- what are the operational needs and other requirements that will need to be planned?
- how and where will these needs be met?
- is there an extension of the infrastructure?
- is it necessary to shut down or rationalize the infrastructure?

Conclusions

Identifying long-term operational requirements and means to materialize offers the advantage of lasting infrastructure implications and ensures that barracks are efficiently used and cost savings are obtained.

Part of the military structures barracks were set up outside the area of development of the respective inhabited areas, without the simultaneous danger of disturbing their activities.

Along with the urban development of the localities there was and still is the prerequisite for the inclusion of the barracks in the general or zonal urbanization plans, which leads to a new approach to the provision of facilities for the structures through a remodeling of the existing infrastructure.

Changes in the security environment as well as requirements, doctrine, management and new technologies lead to a constant requirement for changes in the real estate patrimony.

NOTES:

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2 *Ibidem.*

3 *Ibidem.*

4 Ștefan Pascu, *Istoria militară a poporului român (Military history of the Romanian people)*, Military Publishing House, Bucharest, 1988.

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MINERALS WITH IMPLICATIONS IN SUPPORTING THE PHYSICAL EFFORT OF SOLDIERS

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Military reality has shown us, not a few times, that military operations are important economic, material, financial and human resources consumers, the time budget for their deployment not being very precise. Lack of precision in the completion of military operations may be a factor in supplementing all the resources needed to conduct combat actions, but also a motivation to find helpful solutions for the existing ones. Preparing and conducting combat actions, regardless of season and weather conditions, require operators to undertake a sustained physical and mental effort, most of the time.

From the point of view of human resources, especially of fighters, the support of combat ability can also be achieved by the use of nutritional supplements, vitamins and minerals. Besides, in this paper I will make a synthesis of three minerals as well as their role in supporting physical effort of soldiers in conducting combat actions.

Keywords: minerals; vitamins; physical effort; fighters; military conflicts; energy needs.

The development of human society involves profound changes in all its environments, coexisting and influencing each other. While maintaining the evolutionary trend, the military environment is no exception to these changes, sometimes being even radical, sometimes resorting to its violent forms of manifestation. Whether we accept it or not, the military environment with its military conflicts is an integral part of society, they are part of human life, with potentially negative, deep effects in collective or individual consciousness. From the military conflict, in its violent form of manifestation, armed struggle appears; whether it is lacking, its effects on man and society must be highlighted, lessons must be issued that allow us to evolve as humanity and why not, evolution should be found in new forms and ways of conducting the fight.

Even if society rejects and denies in some cases the existence of military conflicts, the military environment is also on the upward trend, the materialization of military evolution being found both in the development and consolidation of the "existent" situation and in the discovery and implementation of new means and methods, belonging to the future, in order to maintain the ability to fight and to conduct them. Effective armed struggle cannot be achieved independently of the human resource, whether we are talking about operators behind computers, ultramodern technologies, from the virtual environment, or we are talking about those present in the real battlefield, where direct contact with the enemy is omnipresent.

The involvement of the human component of the fighters in the real battlefield requires the intervention and use of all the means necessary to enable them to accomplish the objectives set forth, the missions entrusted, starting from logistic support (fighting technique, equipment, nutrition, medical assistance etc.) and continuing with the creation of specific training opportunities as well as their involvement in mixed training programs. The involvement of fighters in various forms of training requires them to make both neuro-mental and physical efforts. In fact, physical effort is defined as being "the process of conscious or unconscious overwhelming of mental and physical demands, varying in intensity, volume, complexity, as a result of participating in a form of training, in order to improve and modify the performance capacity and adaptation of the human body's systems"[1].

Minerals and their implications in physical effort

The energy needs of a healthy man to carry out daily activities require an energy consumption dictated by two requirements: the basic energy ratio and the effort energy ratio, additionally - this ratio is the one that allows the conduct of physical

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effort when an additional activity occurs and involves physical effort. In this situation, in order to maintain normal body activity, it is necessary, for each kilo of body mass, to have about 1,334 kcal per hour[2]. For example, a 75 kg man would have the following daily calorie requirements under normal conditions: 1,334 kcal x 24h x 75kg = = 2401 kcal.

The energy needs of fighters are clearly higher than those of civilians, situation demonstrated in the study "Energy requirements of military personnel"[3], where the energy consumption of soldiers ranged between 2,300-7100 kcal, with an average of 4,620 kcal. According to the same study, the energy consumption of the combat units is higher by about 20% than that in the second echelon units, the support ones. Also, energy consumption may increase, depending on the geographical area and the field conditions, on the number of consecutive days with prolonged activities, intensity and duration of military actions.

The energy needs of the body are assured by the three substances indispensable to life: carbohydrates, lipids and proteins. Along with these vital survival substances there are other components that play an important role in the correct functioning of the body and of its physiological processes: *water, vitamins and minerals*.

Vitamins are complex organic chemical substances necessary for the human body, obtained from the nutritional process[4], knowing that most of them cannot be synthesized by the body. They are found in most of the foods and natural fluids we consume, being divided into two categories: fat-soluble – A, D, E, K and water-soluble – B complex, C, PP. Vitamins play a role in the functioning of metabolic processes and are necessary for human evolution and reproduction.

With regard to *minerals*, these are inorganic elements essential to life, necessary for proper functionality of metabolism, having a role in cellular, enzymatic and hormonal activity. The most popular minerals are divided into two categories: macro-minerals – calcium, phosphorus, sulphur, magnesium, sodium, potassium and chlorine; micro-minerals – iron, zinc, manganese, cobalt, copper, fluoride, molybdenum, iodine, chromium, selenium.

Also, in the case of minerals and vitamins, as with carbohydrates, proteins and lipids, nutritional standards are set to ensure that the population benefits from an adequate diet, corresponding to the geographical area, the typology of the human, gender, activities performed and efforts made.

Of all known essential minerals, only some have undergone an analysis process and have been identified as relevant for cognitive and physical performance, these being accepted also by the US Department of Defence. Minerals with a potential impact on military activities that US Army researchers have focused on are *calcium, copper, iron, magnesium, selenium and zinc*. This paper aims to analyze the first three and to indicate their importance from the point of view of the physical effort of soldiers.

One of the most important minerals essential for humans is *calcium*. This is 99% found in the bone system and teeth, in an amount of about 1,000 g in women and 1,200 g in men. The daily calcium requirement for an adult is about 800 mg. This amount may be subject to changes based on daily activities, age, or gender. Calcium can be found in milk and dairy products, in meat, in a series of vegetables – beans, cabbage, cucumbers etc., in soymilk, in fruit but also in egg yolk. From the point of view of the importance of calcium in the body, it fulfils several roles: "structural – bones and teeth; neuromuscular – controlling excitability, releasing neurotransmitters, initiating muscle contraction; enzymatic – enzymatic co-factor in the blood coagulation system; hormonal – intracellular second messenger"[5].

The lack of calcium in the body is materialized by the occurrence of muscle cramps, trembling or uncontrollable twitching in the upper or lower limbs, insomnia, arrhythmias, dental problems, the occurrence of bone malformations, bone fragility by the reduction of bone density, increased blood clotting time, delay in the occurrence of muscle contraction, arthritis.

From the point of view of physical effort[6], of military service and of complex calcium intervention in the body, simply by observing the deficiencies caused by the lack of calcium, we can conclude that the decrease in its quantity in the body can have negative effects on the fulfilment of the tasks received by the fighters, as follows: as a result of its essential role in muscle contraction and bone system structure, no mission entrusted can be accomplished due to the impairment to the locomotor system (osteoarticular and muscular system); the occurrence of muscle cramps or uncontrollable twitching in the limbs during a mission leads to delaying it or triggering involuntary shooting; bone fragility may be the cause of various fractures (microfracture recovery also depends on calcium intake) both in the case of the direct fight with the enemy, and in the case of the training of the motor skills specific to combat or of the utility and application skills (climbing, transport, digging, lifting of materials and objects, marching etc.). Besides, these utility and application skills "have been identified by the researchers as being ordinary physical activities of primary importance, carried out in the current NATO missions (humanitarian, counterterrorism, peacekeeping, conflict resolution etc.)"[7].

The second important element for the conduct of physical effort, implicitly the activity of soldiers, falling within the group of micro-minerals is *copper*. It is an important element for the proper functioning of internal organs, being present "in numerous oxidation reduction reactions... in the synthesis of adenosine triphosphate (nan. – substance that has the property "to decompose, releasing phosphoric acid and a certain amount of energy, being the real substance of the muscle action"[8]), iron transport"[9]. The role of copper is also found in the development of iron metabolism and hemoglobin formation, increase of immunity and prevention of osteoporosis, in most body systems, in the synthesis of melanin (element involved in maintaining the color of the skin, eyes and hair) and creation of collagen (protein that plays a role in cell regeneration and recovery), in the production of neurotransmitters.

The amount of copper present in the body ranges from 50 to 120 mg, and daily needs should contain about 1 mg for women and 1.4 mg for men. The sources from which copper can be obtained through a balanced diet are: liver, meat, eggs, peanuts, nuts, almonds, mushrooms, in some fruits, seeds and cereals, in seafood. It is known that processed food (semi-prepared and refined) is poorer in many minerals, including copper.

The implications of copper in physical activity and in the conduct of physical effort are numerous even though studies have not demonstrated immediate negative effects by copraemia decrease, knowing that "after a rest of 30 minutes after termination of effort, plasma levels return to resting state"[10]. Thus, by participating in ATP synthesis, copper influences the maintenance and performance of physical effort, by increasing the oxygenation process, it increases the aerobic effort and delays the occurrence and installation of fatigue, helps recover in various sports accidents (sprains, for example). An acute lack of copper in the body is often associated with reduced bone density, thus favoring the installation of osteoporosis. From the point of view of neurotransmitters – noradrenaline (it has a role in the sympathetic nervous system, being a mediator of nerve endings present in glands and smooth muscles), dopamine (substance with connection role and a transmitter of information between brain neurons, involved, among other things, also in triggering and continuing muscle contraction and movements) and serotonin (substance with implications in the induction and achievement of sleep, in affective and cognitive processes, in thermo-regulation and the cardiovascular system, in the functioning of the locomotor system), the presence of copper in the body facilitates the production of adrenaline which has the effect of reducing the reaction time to external or internal stimuli.

Observing the implications of copper in the body during physical activity, we can infer its importance also from the perspective of the soldiers' effort. Whether they are doing physical training or activities that involve energy consumption, copper is a mineral that supports the whole activity or can be a cause for the impossibility of carrying out a mission. Analysis, response and triggering of a motor reaction to the occurrence of an external stimulus (enemy fire with different types of weapons–light or heavy, air attack etc.) or moving from one objective to another, in combat conditions, determines the mobilization of minerals as supporters of the effort, implicitly of copper. Its severe lack in the body can lead to lack of reactions in combat situations, favoring failure to carry out the missions received.

The third mineral we approach in this material is *iron*. This is one of the most important and studied micro-minerals, being a component of many proteins and enzymes. An adult human body contains about 4 g of iron, and according to the International Committee for Nutrition and Food "the daily exogenous iron requirement is 16-18 mg / day for men and 12 mg / day for women (nan.

– through the loss of blood during the menstrual period, the amount of iron in their body decreases in a higher proportion than in normal life regimen, so the consumption must be higher)"[11]. From these values, only about 1 mg / day is absorbed by the male and female, to maintain the balance of iron in the body. Iron is found in most of the body's internal organs, but mostly in erythrocytes (about 65%), liver, spleen, bone marrow, plasma and muscles. About 6% cannot be determined where it is located in the body.

Food sources from which we can meet the daily needs are meat (more in red meat), chicken, fish, seafood, cereals, seeds, vegetables and fruits. Iron deficiency occurs in the body when the intake is not achieved through normal nutrition, when its absorption from food is not performed under normal body functionality conditions, during menstruation, in the case of very intense physical training, in the case of accidents where there are significant blood losses.

The most important role of iron in the body is to participate in the development of hemoglobin. It is known that the main role of the hemoglobin molecule interferes with the respiratory process, making possible the transport of oxygen to organs and cells and of carbon dioxide to the lungs to be eliminated. Knowing that the proper functioning of all internal organs and cells is conditioned by the presence of oxygen, highlighting the myocardium (the heart muscle) and the brain, we can simply infer its importance for body and existence. Iron also interferes with maintaining and developing the body's immunity. Iron deficiency can lead to fatigue, asthenia, and in severe cases of iron deficiency, anemia may occur – it is known to be a disease caused by the reduction in the number of red blood cells and blood hemoglobin or their quality.

Installation of anemia in the case of athletes can lead to the reduction of physical effort ability, implicitly of the number of training sessions and their quality, an accelerated heart rate and unjustified fatigue.

From the point of view of the importance of iron deficiency with implications for the physical activities conducted by soldiers, the consequences are "the impairment of the physical performance of work, impairment of cognitive functioning, poor immune functioning and change in emotional states"[12]. If we overlap these situations over the conduct of a mission in wars, especially in the conditions of a real combat situation, the chances of meeting the goals are significantly reduced, while affected operators can take irrational gestures, endangering the whole group. Loss of cognitive capacity simultaneously with unjustified change and alteration of feelings may be the cause of irreversible psychological changes on soldiers.

For the other three minerals (zinc, magnesium and selenium) specified at the beginning of this analysis, each of them has a well-defined role in ensuring the functionality of organs, of physiological and biochemical processes, of the body itself. *Zinc* plays an important role in vital body functions, in the growth and development of muscle tissue, and intervenes in the creation of ATP in the muscles, in various neurological processes, as well as in reproduction. Zinc deficiency, from the perspective of negative effects and that could influence the performance of the soldiers, can lead to diminishing the quality of vision, delay in wound healing, gastrointestinal diseases, slower recovery of effort ability and even favors the occurrence of muscle soreness.

Selenium is essential for the restoration of cell membranes that have undergone changes following a demanding physical effort, also having antioxidant properties. What is interesting for the physical activity of the soldiers, selenium deficiency affects the restoration of muscle tissue and causes prerequisites for the occurrence and installation of premature fatigue.

Magnesium is one of the mineral elements in a very large amount in the body, being exceeded only by potassium. The important function of magnesium in terms of physical effort is reflected by its intervention in energy metabolism, in neuromuscular excitability (transmission of the nervous impulse, muscle contraction) and biosynthesis. In other words, magnesium affects positively the action of skeletal muscles. Magnesium deficiency in the body creates a series of disorders, of which we only mention those that can adversely affect the activity of the soldiers during missions: "tetany[13], ataxia[14], tremor, convulsions, muscle weakness"[15].

Conclusions

The conduct of physical effort of fighters, both in the training activity, in the unit of origin and centralized before participating in a mission, as well as during the combat action, should also be supported by proper nutrition and pharmacology means, by the administration of poly-vitamins and multi-minerals, activity carried out under the guidance and coordination of the medical service. Intake of minerals must be achieved primarily through regular rational nutrition and it is possible to resort to targeted nutrition programs and other additional means only in special cases.

Consumption of military personnel engaged in various forms of physical training or in the conduct of missions may generate greater demand for nutrients, given the effort parameters optimization for longer periods. If the goal was only to maintain health, then the intake would fall within the usual standards for the majority civilian population. In-depth knowledge of the missions to be accomplished, military-specific training forms, military scenarios involving fighters and the factors influencing the ability to fight at individual level, the loss of minerals as a result of physical effort, should be considered to create, if necessary, standards regarding additional intake of vitamins and minerals that can optimize soldiers' performance.

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5 E. Ionică, M. Costache, *Biochimie generală, vol. III - Vitamine și elemente minerale*, Ars Docendi Publishing House, Bucharest, 2013, p. 277.

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THE PROCESS OF IMPLEMENTING LESSONS LEARNED IN THE MINISTRY OF INTERNAL AFFAIRS

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As society evolves, people face more and more complex cognitive challenges, which actually requires the need of continuous everyday learning in order to excell. This process of learning takes place not only individually, but also organizationally, as organizations can perform better employing the knowledge they have.

Following a brief conceptual analysis, the article presents main characteristics of the lessons learned process at the level of the Ministry of Internal Affairs. Moreover, thorough a sociological survey based on a qualitative interview, I analyze the necessity and the possibility of implementing the lessons learned concept within the Ministry of Internal Affairs.

Keywords: knowledge; identified lessons; lessons learned; data bases.

We are currently facing a rapid transition from an "industrial society" to a "knowledge-based society", knowledge being an important asset necessary in the organizational competition[1]. Many organizations in the knowledge-based society have identified a certain type of knowledge, namely potentially organizational knowledge, which means knowledge that could have been obtained had we not missed the opportunity. Most organizations, too often, do not analyze or debate upon what has happened so that they could improve their performance when there might appear a similar situation in the future. In order to prevent the appearance of similar problems, both organizations and their employees should pay attention to lessons learned from experience, thus appearing new knowledge, namely potential organizational knowledge.

Due to the lack of time, employees prefer carrying out most urgent tasks at any given time, allocating less time to accomplishing important future-oriented tasks, such as developing new knowledge, which is a tool used to improve performance. The new organizational knowledge covered in this article, namely the lessons learned, refers to results stemming out from attending briefing and debriefing sessions, post-action review processes and other similar actions, where the attendance of employees must be as large as possible. Employees who have not been personally involved in the processes, events, or projects from which lessons are learned are prone to forgetting and disregarding these lessons. Information and, implicitly, the knowledge extracted from such learning are stored in the employees' brains so that they can be reused in the future[2].

Knowledge-based organizations have as their primary objective the organizational processes of acquiring lessons learned. The term *lessons learned* is generally used to describe people, things, and activities related to learning from experience in order to achieve improvement of any kind. The idea of lessons learned in an organization is that through a formal learning approach both individuals and the organization can reduce the risk of repeating past mistakes and thus increase the chances of repeating success. In the military context, this means reducing operational risk, increasing cost efficiency and improving operational efficiency[3]. These processes lead to a substantial reduction in recurring mistakes due to the application of repeatedly taught lessons, organizations learning from past mistakes, with the aim of improving future performance.

There are many times when people know, remember, and still do not use the acquired knowledge, as knowledge is related to a different context. According to Edward Cell, the human brain stores, processes and recovers huge amounts of data, information and knowledge using templates representing the stored knowledge. Each situation is compared to the most relevant existing topic,

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and then analyzed[4]. The same thing happens with the new lessons learned within the organization, as they are usually labeled according to the context in which they were developed, and later, when these lessons are relevant, in a different context and situation, it should not be difficult to recover and use them.

Lessons Learned and the Ministry of Internal Affairs Structures

The Ministry of Internal Affairs (MIA) is the institution that represents the public order dimension, a component of the National Security, Public Order and National Security System[5], and "through its specialized structures it applies, according to its competences, measures to maintain, assure and restore order and public safety, the citizen's safety, prevention and fight against organized crime, criminal phenomena and acts of corruption, and identifies and counteracts the actions of those elements that affect the life, freedom, health and integrity of individuals, private and public property, as well as other legitimate interests of the community"[6]. The legal framework for operation is the Emergency Ordinance no. 30/2007 on the organization and functioning of the Ministry of Internal Affairs.

At the level of the Ministry of Internal Affairs, the activity of lessons learned is regulated by "Order 91 of 26 July 2017 for the approval of the methodology for capitalizing the results of the operational activities carried out at the Ministry of Internal Affairs". At the central level, the microstructure dealing with lessons learned, within the "Operational Management General Directorate – DGMO, coordinates and methodologically guides interested units, for the implementation, development of the lessons learned system"[7]. The lesson learned process consists of a set of actions organized and executed in seven stages, as follows: preparation, observation and collection of data and information, data and information analysis, notice of the information note, implementation and monitoring of lessons identified, validation of lessons identified and dissemination of lessons learned in accordance with the orders of the Director or, as the case may be, of the commander of the unit concerned.

The structures within the Ministry of Internal Affairs, which have expressed their interest in capitalizing on the experience gained in the areas of competence through the lessons learned process are: "The Department for Emergency Situations, the Romanian Police, the Romanian Gendarmerie, the Romanian Border Police, the Aviation General Inspectorate The Ministry of Internal Affairs, the General Inspectorate for Emergency Situations, the National Administration of State Reserves and Special Issues, the General Inspectorate for Immigration and their subordinate structures"[8].

Of all the MIA structures, the concept of lessons learned has the greatest expansion in the structures of the General Inspectorate for Emergency Situations (IGSU) and implicitly in the Department of Emergency Situations (DSU). Exercise Planning and Exceptional Management Exercise Division (DPEMSE). organizes and coordinates the specific activity in the field of lessons learned at IGSU According to the General Inspector's Order of IGSU no. 234/IG from 29.12.2016, "all emergency inspectorates or structures within the I.G.S.U. that conduct exercises have the obligation to send to the Planning, Organization and Evaluation Exercises Department within the above mentioned direction, the evaluation reports with proposals for lessons identified or lessons learned. DPEMSE, through the specialized service, draws up reports on the lessons learned, as well as recommendations, proposals or remedial measures to amend existing operational documents in order to improve the emergency response system. Twice a year, DPEMSE on the basis of the exercise assessment reports, reports on the analysis activity and the lessons learned, as well as on proposals for improving the response actions to be materialized in operative documents"[9].

Following the very serious consequences of the fire produced on the 30th of October, 2015 at the "Collective" Club in Bucharest, an analysis of the actions was carried out at the level of the Department for Emergency Situations – DSU, on the basis of the reports received together with the reports of the persons involved in the intervention, the Bucharest-Ilfov Ambulance Service (SABIF), the Mobile Emergency Service, Resuscitation and Demarcation Service (SMURD) and the Emergency Situation Inspectorate "Spirii Hill" Bucharest-Ilfov (ISUBIF), as well as the ISUBIF Dispatch Center, and proposing mechanisms for improvement. The result of these analyses was a comprehensive collection of lessons learned, which will be applied at national level, in order to ensure optimization of intervention mechanisms in similar situations[10].

Several lessons learned from "The Report on Lessons Learned after the Fire at the "Collective" Club, no. 1453/09.03.2016" are the following:

"• supplementing the questions asked by dispatchers in order to succeed, as far as possible, to form an image of the emergency situation produced (estimation of a potential number of victims);

• supplementing intervention resources based on information arriving at the Dispatch Center, irrespective of its source, even if there is a risk that these resources will be recalled at the base if the information is denied;

• the need for dispatch and integrated coordination of all intervention resources.

The above-mentioned lessons learned have a significant impact on the efficiency of the intervention of emergency structures and are compared with the way in which interventions are made in the event of similar events at an international level"[11].

A particular case of lesson identified is good practice. Good practice is "a technique, process, or methodology that helps improve the work of an organization because, by comparing it with other good practices, the best way to operate in a particular field has been identified. Ideally, good practice must be able to adapt, be repeatable, and be used immediately"[12]. In the case of good practice observed through the lessons learned process, the advantages of that practice should be promoted.

When an identified lesson is good practice, the remedial measures consist of documenting the conditions in which the positive experience has occurred and introducing the necessary measures to ensure the repeatability of the conditions[13].

For all categories of forces, structures and dimensions, there are good practice manuals, the specific objective of such manuals being to identify best practices for mitigating risks in the field. For example, at the level of the Romanian Police, in the field of domestic violence, good practices are derived from the work: "Domestic Violence. A Handbook of Good Practices for Magistrates and Police Workers". In this manual, the phenomenon of domestic violence is presented from the point of view of justice and the response given by the authorities. An "analysis of domestic violence is carried out, starting from the descriptive theoretical level to concrete action to prevent and combat the phenomenon. Theoretically, the results are intended to contribute to a proactive and reactive approach to tackling the phenomenon that will break down myths about victims, putting their safety at the heart of the concerns of the institutional and social actors involved"[14].

Lessons Learned Data Bases

In the NATO view, an identified lesson, which was officially transformed into a lesson learned, is recorded in the computerized basis containing NATO lessons learned, thus becoming a standard practice. NATO's lessons learned database is the most important database of this destination in the world, all of the lessons learned databases from NATO member countries being connected to it.

At the NATO level, there is *the NATO Lessons Learned Portal (NLLP)*, a personalized application that can be used to collect and facilitate navigation, searching, filtering, sorting, reporting and archiving observations. However, the NLLP was primarily designed as an instrument to support the lecturers with lessons learned in the NATO Bi-SC LL process.

The Microsoft Office suite is used as collection software for comments through its applications: Word, Excel and Access, simple and widespread tools that can be easily used in the storage and management of observations. The vast majority of computer users are familiar with these applications, making it easier to share information[15].

In our country, the lessons learned database connected to the NATO lessons learned database of the Joint Analyzes and Learning Lessons – JALLC[16] Center is set up at the level of the Defense Staff of the Ministry of National Defense and the structure designated for the management to be the Lesson Office learned from the Direction of Instruction and Doctrine[17].

At the level of the Ministry of Internal Affairs, a database of lessons learned is currently not operational. The Learned Lessons section of the Strategic Analysis Service of the Operations Management Division has developed a pilot project with such a database, currently being piloted.

Locally, at the level of the General Inspectorate for Emergency Situations, there is such an internal database, the lessons contained being inapplicable to the other structures of the Ministry of Internal Affairs.

An Analysis of Possible Improvement of the Lessons Learned Process within the MIA

I have asked a set of questions to decision-makers in several MIA structures, wishing to know whether they are aware of the legislative part, and whether they use or find beneficial the concept of lessons learned.

The method of research employed is the investigation method, and the technique is the interview, the verbal gathering of information from the subjects[18].

The instrument used in the research allowed qualitative determinations on elements related to the functionality of the lessons learned. I posted the interview concept on the GoogleDrive storage site corresponding to the lessons learned email address – lectii.invatateMAI@gmail.com[19].

Studying the answers of the respondents and comparing the results, we get important considerations of the lessons learned at MIA. The content of the interviews is very varied, reaching all aspects of the state of knowledge in the field of organizational learning, especially in the field of lessons learned[20]. Applying the extended interview guide is also uploaded to the above mentioned storage[21].

In general, interviewees are familiar with the lessons learned activity. Considering the fact that within the Ministry of Interior there are two categories of staff: civil servants with special status, who carry out their activity according to the law no. 360/2002 on the status of the police officers, and the military personnel operating according to the Law no. 80/1995, regarding the status of the military cadres, among the interviewees, only the military personnel are fully aware of the activity of lessons learned. Among the military personnel, the most familiar is the Emergency Situations Inspectorate, and it is working on materials that are specific to the lessons learned. At the level of this structure, lessons learned, lessons identified and the good practices are extracted both from the multiple exercises involving all staff and everyday activities. A great deal of lessons learned was extracted from the fire produced on 30.10.2015 at the "Collective" Club in Bucharest.

Procurement workers assimilate the lessons learned with the case libraries (especially with the National Agency for Public Procurement – ANAP). They argue that this library, in addition to a comprehensive procurement guide, also offers some situations where some people have enforced the law and, if there is any similarity, others can follow the same pattern in similar situations.

Although the phrase *lessons learned* is very familiar to them, some of the interviewees assimilate the lessons learned with the system procedures and the internal ones that they perform accordingly.

Nearly all of the interviewees are aware of the pilot project of the lessons learned database initiated by the Operational Management General Directorate of the Central Office of the Ministry of Internal Affairs, regarding the capitalization of the results of the activity carried out at the level of the subordinated structures.

Analyzing the research results following the survey method, after using the interview technique as an extension of the concept of lessons learned, we concluded that they should be promoted and implemented at the level of the Ministry of Internal Affairs, since each mission involves risks and vulnerabilities, positive aspects and negative aspects, from a series of conclusions and recommendations can be drawn. Joint exercises highlight irregularities, making them a priority action line, being considered a source of lessons learned, and, obviously, of good practices.

Proposals for improving the knowledge management functionality at the level of the interviewed structures are the following:

- at the level of the Romanian Gendarmerie it is desirable to create a virtual library in such a way that all employees, such as group commander, platoon commander, detachment commander, head of office, head of service will have access to all training programs. This library must be permanently updated and should contain all kinds of knowledge necessary to carry out appropriately all missions of the structures. In addition to internal learning, this library should also contain lessons from European missions such as Frontex and international ones such as NATO – Afghanistan, where the Romanian Gendarmerie units were also sent.
- an e-learning platform is necessary at the level of emergency structures. With this platform, you can share your knowledge, thus all IGSU staff having access to the lessons learned in specific normative acts, doctrines, manuals, instructions, nomenclatures, good practice manuals.

• at the level of the structures within the Central Office of MIA. the sharing of knowledge is done through formal meetings; for example procurement structures, at the order of the Secretary General of the Ministry of Internal Affairs, once a month a debate is held with all representatives of public procurement of the large structures of the Ministry of Internal Affairs.

Conclusions

In order to improve their activity and to be innovative, individuals need to learn both from their experience and from the experiences of others, shared through databases containing lessons learned and good practices. Should the concept of lessons learned be successful, all individuals within an organization need be involved in the learning process.

One of the purposes of this article is to provide ideas for a successful change of personal conduct and organizational practices, and transforming the lifecycle model of learned lessons management and good practice into an integral part of "organizational DNA".

Implementing the process of lessons learned at the organizational level requires a methodology that leads to a change in the way both individuals and organizations act. A lesson is not taught until something changes in the course of the organization's activity, and those who need to change the way of action are affected by a particular situation.

The greatest expansion of the lessons learned and good practice at the MIA is found within the structures with responsibilities in the field of emergency situations, especially DSU and IGSU. In addition to the structures mentioned above, the Romanian Police has an impressive collection of good practice manuals.

Analyzing the results obtained from the sociological survey based on the qualitative interview, we could conclude that the vast majority of the structures within the MIA are familiar with the concept of lessons learned and are looking forward to the operationalization of the learned lessons database located at DGMO.

What needs to be mentioned is the fact that all types of lessons should be collected and managed together by a single entity using a combined system that contains all the improvements suggested at the organizational level. The result of the technological process through which an organization stores its knowledge of all kinds is a knowledge bank.

Knowledge bank contains sets of lessons learned, best practices and other knowledge presented as conclusions, each with a title, values for context-based attributes, values for fixed attributes, attachments, and hyperlinks.

We propose that our future research be aimed at developing a demonstrative model of a knowledge bank for the National System of Defense, Public Order and National Security.

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4 E. Cell, *Learning to Learn from Experience*, New York, 1984, p. 62.

5 *Strategia națională de apărare a țării pentru perioada 2015 - 2019*, p. 19.

6 *Ghidul Strategiei Naționale de Apărare a Țării pentru perioada 2015-2019*, Bucharest, 2015, p. 15

7 *Metodologia privind valorificarea rezultatelor activităților operaționale desfășurate la nivelul Ministerului Afacerilor Interne*, Bucharest, 2017, http://legislatie.just.ro/Public/DetaliiDocument/192102, accessed at 14.02.2019.

8 *Ordinul 91 pentru aprobarea metodologiei valorificării rezultatelor activităților operaționale desfășurate la nivelul Ministerului Afacerilor Interne*, Bucharest, 2017, https://lege5.ro/Gratuit/ge3dqmjxgy4q/ordinul-nr-91-2017-pentru-aprobarea-metodologiei-valorificarii-rezultatelor-activitatilor-operationale-desfasurate-la-nivelul-ministerului-afacerilor-interne, accessed at 14.02.2019.

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11 *Ibidem.*

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13 *Manualul de colectare și analiză pentru lecții învățate*, Bucharest, 2015, p. 14.

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15 *The NATO Lessons Learned Handbook*, Third Edition, Joint Analysis and Lessons Learned Centre, Lisbon, 2016, pp. 23-25.

16 *** *Joint Analysis and Lessons Learned Centre*.

17 *Ghidul responsabilului cu lecțiile învățate din cadrul structurilor tactice*, Bucharest, 2011, p. 16.

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19 https://drive.google.com/drive/folders/1TyB3tvNtJTQOqL5_J3bL5POtqq1bYRUI?usp=sharing

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THE NATION IN THE GLOBALIZATION ERA

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The nation integrates the populations into a community of citizens whose existence legitimizes the internal and external action of the state. The latter, an instrument of the nation, is acting at the same time to integrate populations by citizenship and to act in the world of nations - political units. Globalization is no longer based on expansionist impulses, but on new infrastructures and means of global governance and exercise of governance, which have altered power relations in the present world.

In the era of globalization, the traditional correlation between the national organization of the military, namely the national defense and the territorial nation-state, has undergone transformations in the sense that the elaboration of a national defense policy, starting from the defense strategy decisions up to the deployment and the use of military force is integrated into a matrix of institutionalized consultation and cooperation mechanisms, both bilateral and multilateral, both formal and informal.

Keywords: nation; state; ethnicity; citizen; democratic nation; civic nation; citizen community; national state; globalization; sovereignty; autonomy; national defense; security globalization; military power; security policy.

The globalization we are seeing or adapting to today, makes us admit that there is a diminution of civicism and political ties. What is important in globalization is that this, by being at the level of the whole of society, through its different modes of manifestation, will have a particular impact on the human condition in its entirety, influencing the whole human system of values. In a first attempt to show what characterizes it, we can say that globalization is characterized by the internationalization of economic activities and the existence of networks that disseminate information and knowledge, the phenomenon of globalization evolving concurrently with that of integration and regionalization[1].

In addition to a historical and ideological analysis of the nation, a sociological analysis is needed to understand whether the modern democratic nation will be able to provide the social link in the future, as it did in the past. The political and economic independence and sovereignty of each nation is today severely constrained by the constraints of globalization of economic exchanges and of relations between political units. In addition, the internal evolution of democracies, in which collective life seems to materialize on the production and distribution of wealth, tends to shake the existing political idea of the origins of nations.

All of these make us ask how much it is possible for a democracy to ask citizens to defend it *at the expense of life*. In democracy there is no supreme sacrifice, the individual with his interests has taken the citizen's place with his ideals.

On the territory of Europe, European identity grows from national identity. Does this mean that the Romanian nation is abandoning its identity spirit, centuries of faith, blood and song? Is it possible to reconcile the project of unification of the continent with the principle of the right to identity?

Europe's future challenge is to promote an inclusive society based on respect for and recognition of fundamental rights, diversity and equality. It is regrettable that today, on behalf of security and protection of democratic and European values, a perfect climate has been created to limit the rights and freedoms whose enforcement has been achieved in many years of activism. The fact that there was initiated a debate with regard to the creation of borders within the Schengen area is perhaps the most significant example of

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the relationship between racism and xenophobia and the abolition of rights and freedoms. There are countries in the European Union which, especially since the refugees' crisis has worsened, have decided to make exceptions and re-establish internal borders.

The full of hatred rhetoric toward immigrants, which, with media's complicity, associates them with terrorism or crimes such as sexual assaults, thefts or acts of violence, ends up being transmitted to the population, which, in turn, accept drastic limitations not only of the rights and freedoms of immigrants but also of their own rights and freedoms.

From nation to civic nation

In the past, the main tools in the study of nationalism were the theories elaborated by researchers who were usually historians or political scientists. They proposed NATION definitions based on the historical analysis of societies bearing this name as a causal relationship incongruous with nationalism. If this report is evident from a historical and ideological point of view, it does not explain the logical mechanism by which the *concept of nation* is being built, which is why a sociological approach is required to come up with data-based theories resulting from empirical knowledge of societies such as those practiced by Max Weber, Marcel Mauss, Norbert Elias, etc.

Thus, sociological theories are also based on the comparative analysis of the social link between people to observe what constitutes and what makes it work in different types of historical communities. It is well known that in modern societies, the social link is essentially a political one, that is, a national one, from which it follows that the nation must be studied in political terms, that is, taking into account the representations and institutions that give sense and materialize the way in which the life of a community is led.

Given its essentially political nature, the nation is fundamentally different from ethnicity, where the social link is of a cultural nature being a historical and cultural community. The objective elements invoked by specialists in the field (who insisted on the preeminence, in time and in terms of legitimacy, of ethnicity on the nation), language, origin, territory, etc. are not the carriers of an *a priori* identity. If we accept that the modern nation is a political community, the history of the different nations shows that the ideative nucleus that has always animated the materialization of the abstract idea of the nation is the same. Two dimensions define this nucleus, sovereignty and integrity. The nation exercises its sovereignty, internally, by integrating the populations that make up the national society, and externally, asserting itself as a historical subject in a world order based on the existence and on the relations between nations - political units (states - subjects of international law).

The political organization and the democratic principle that underpin it make the modern nation a special kind of organization. Integration is an ongoing process, thanks to which the feeling of national belonging is constantly being built.

What characterizes the modern nation, irrespective of its concrete historical form, is openness to the citizens of other states as well. Depending on certain criteria established in accordance with the cultural tradition, the values and norms of a particular society, the state representing the nation determines the ways in which citizens of other states can acquire citizenship. These criteria are more or less drastic or demanding, but openness exists as a principle. Because the nation (as an abstract idea) brings together citizens, they are all equal among themselves, and their belonging to the community is based on the internalization of a system of norms and values, defined mainly in political terms. In principle, anyone can integrate into the community of citizens, that is, a national community that is governed by democratic rules.

It is unanimously recognized today that *democracy* is not an invention of the modern age. But modern political theory has the merit of highlighting two ideas that fundamentally differentiate modern democracy from the ancient one, namely the practice of representation (which showed the need and importance of power delegation) and a new conception of citizenship that has a universal character.

The citizen community is based on all these ideas, all of whom share the same values, are equal, participate in the exercise of power, and agree that anyone sharing the same values and meeting certain criteria established according to a rational policy can also become citizen, i.e. a member of a state belonging to the state. This theory gains even greater importance today, taking into account migrations of populations from one territory to another, determined by economic, social, political, natural factors or in the wider context of globalization.

The transcendence of individual or group peculiarities through the abstract political identity common to all is specific to the civic nation. The capacity to integrate it results from the rapport, dynamic by definition, which is established between the political (abstract and normative) project of a community of citizens and the concrete, cultural, historical, social characteristics of the populations that make up this community and which the state organizes in society.

If, from an analytical point of view, the idea of a nation is based on transcendence through politics, the assumption of primal identities and the affirmation of political identity as a citizen, to explain the possibility of concrete materialization of the civic nation, sociological analysis emphasizes internalization or socialization. Generally speaking, it allows the acquisition of common norms and values and makes possible the integration of the individual into a group. As regards the citizen community, the civic nation, the state has organized the education that provides to a great extent this process of socialization and especially of political socialization. The national social connection thus begins by recognizing a public domain, a common one, in which private identities are overcome by political identity, ensuring equality for all. Integration through national institutions (and especially through school) has created, as Dominique Schnapper claims[2], a specific social habitus.

The sociological analysis thus shows that the civic nation has become concrete by being the source of an identity, morality, passions and behaviors. But even more importantly, it has become concrete in that the dignity of people is no longer linked exclusively to a particular place in a family or statutory group, but to their quality of universal individual and citizen.

Nation – ethnic group/ethnicity

In social life and even in scientific literature, the notion of *ethnic* and *national* is often used undifferentiated. The nation is a special form of political unit whose specificities ought to be analyzed. Like any political unit, the nation is defined by its sovereignty, inside and outside the state. Its specificity is that it integrates the populations into a community of citizens whose existence legitimizes the internal and external action of the state.

The nation differs from the groups that are not politically organized. Thus, ethnic groups designate groups of people who consider themselves the heirs of a historical community (often formulated in terms of common ascendancy) and who share the will to maintain it. In other words, ethnicity is defined by two dimensions: the historical community and cultural specificity.

The revival of the concept of ethnicity has become a key term of contemporary scientific literature, especially in the US[3], where the ambiguity between the two notions of nation and ethnicity is maintained. For example, rediscovering within the United States, the force of belonging to separate communities and designating the ethnic group at the same time as blacks, Irish Americans, Italian Americans, Jews, and Indians, sociologists could avoid continuing reflection on the nature of the individual's belonging to collective: racial in the case of blacks and Indians; national in the case of Irish and Italians; national and/or religious for the Jews. It could thus neglect the rise of the taboo problem of the breed even if it is said that it is a social concept – or of culture – which has often become socially allowed to observe what was once called race – to define the groups.

In some situations, ethnicity has been and is at the root of some forms of discrimination in society such as racism and xenophobia. Racism is the process of discrimination due to the beliefs and ideologies produced in the 19th and 20th centuries by Frenchmen Jules Soury, Joseph Arthur de Gobineau and Charles Maurras, or German Alfred Rosenberg, according to whom, human races can be classified from inferior to superior on the basis of different fundamental biological characteristics with which they seem to be endowed. Racism implies that people are unequal according to ethnicity to which they belong, the belief that peoples are unequal as such, and social and cultural differences are explained by biological and hereditary differences between human races.

Closely related to racism is xenophobia, which refers to both hatred toward a different ethnicity, culture or religion, and to the fear of unknown people and unknown concepts. Xenophobia is often generated and exacerbated by social inequalities when associated with ethnic or religious differences, as it happened in Transylvania, during the Austro-Hungarian empire, in Northern Ireland (Ulster), between Protestants and Catholics, in Algeria, during the French occupation, in South Africa, during the apartheid, in the United States, between African Americans, white Americans and Hispanics, or in Europe, between settled populations and nomadic Roma populations, or between Christian and Jewish populations.

Those who belong to ethnic or minority groups, politically or legally dominated, have a direct interest in recognizing the legal equality and political rights of all – equality that compensates, at least partially or symbolically, for the inferiority of the status. Because minority or legal populations have understood better than others what they are protecting, they have been particularly keen on the principles of democratic citizenship. For example, at a stable socio-economic level, African Americans hold a higher rate of participation in elections than other ethnic groups in the United States.

Nation - state

There are also comments on whether it is appropriate for the nation to be confused with political unit (the state). The term *nation* designates the political units whose sovereignty is recognized by the international community. Thus, today's scholars leave aside an analytical distinction that the first thinkers of the nation did not ignore. The French authors, marked by the threat of revolutionary experience and the proclamation by the *Third State* of the nation as a new source of political legitimacy, made clear the distinction between political unit (the state) and the civic nation. Thus, Renan distinguished between nations such as France, England and most of the modern European autonomies and the other *forms of human society*, namely the large agglomerations of people such as China, Egypt, the old Babylon, the tribe model of the Jews and the Arabs - or the fortress, flowing the Spartan or Athenian model-the non-homeland communities, maintained by a religious connection such as that of the Israelites, of the Persians – confederates, following the pattern of Switzerland, America – relationships such as the one that the breed, or rather the language, establishes between different branches of Germans, different branches of Slavs[4].

Mauss explains how he came to distinguish between the nation and the political unit (state). He classifies human societies into four large groups according to their level of integration, i.e., at the level of political integration, polisegmentary, clan-like or tribal societies, then integrated societies in ascending order by the presence, force and constancy of a central power[5]. Mauss therefore adds to the criterion of political integration that characterizes any political unit organized by a stable central power, that of citizenship that allows the modern nation to differentiate from other political units - which makes it clear that there is still a large amount of societies and states that do not deserve the name of the nation in any way. Reemploying the same distinction in the introduction to the *Paix et Guerre entre nations*, Raimond Aron states that the nation, in this case is the equivalent of any political organization, territorially organized, and that international relations are relations between political units, the latter concept covering Greek fortresses, the Roman or Egyptian empire like the European monarchies, bourgeois republics or popular democracies[6]. It is, in fact, the sense Adam Smith gave to the nations when he wrote *The Wealth of Nations*.

Also in this sense, the term is used in the study of the discipline – Study of international relations. The same assimilation between the nation and the political unit (state) led in 1919 – at a time when the democratic nation seemed to be acceptable as the universal way of political organization – to create the League of Nations and to organize the political order in nations that were not, some Eastern European countries, but political units. The increase in the number of new states after the Second World War, recognized by the United Nations, expresses the existence of new states or new nations – political units.

Max Weber does not ignore the distinction between the state and the nation – first of all, the nation is not the same as the people of a state, i.e. belonging to a political community. He also gave extra value to small nations in terms of their democratic quality and culture.

The state enters the nation within a space; the nation is a territorialized political unit. Unlike the Greek *polis*, founded and formed by a group of people who could carry it with them over the seas, the modern nation associates a political organization with its territory. Thus, populations in the diaspora, even if they continue to support cultural, religious or economic ties across borders, do not form a nation. Territory opposes the logic of social organizations based on family or clan solidarity. The concrete space defines the borders within which laws are enforced, and common practices that define the abstract space of politics are exercised. The right to a homeland is still partly recognized by the nationality law.

The state constitutes the nation in the full sense, giving it shape and ordering the social system around it. The nation cannot remain the pure abstraction of a community of citizens, even though relations between civil society and the state have always been specific. As the case may be, the state, the collective values and the common institutions were those that had the role of motor, or one or more of the ethnic groups that, for example, in Eastern Europe, claimed their organization as a nation, which is, to be considered a sovereign state. The state institutions facilitate a nation to have historical continuity.

Nation - nationalism

Finally, the distinction between the nation as a historical reality and nationalism must be made. This term also means either ethnic claims of being recognized as nations, that is to say, to coincide with the historical-cultural community (or ethnicity) and political organization, or the will of the nations already established to affirm themselves in spite of others. Criticism toward nations often concerns nationalism. The conflicts, for example in the Balkans, are not national, but ethnic or nationalist conflicts, showing the inconsistency of the national tradition of former Yugoslavia, which was attempted to be constituted in the nation in 1919, starting from the Serbian, Slovenian, Bosnian, Albanian ethnic groups, etc. Recent Anglo-Saxon political science deals with nationalisms in the sense of claiming to create a nation rather than the nations themselves[7].

Effects of globalization on nations

Globalization opens the national space for the flow of people, goods, capital, technology, information, determining, under political and economic auspices, the establishment of links between the different (horizontal and vertical) levels of organization of society. It can be measured by comparing the statistical data provided by the past decades: from the value of the foreign capital invested, the density of the commercial network, the number of multinational corporations, international non-governmental organizations and governmental organizations, to military expenses, the multinationality of military-industrial scales, and diversity of the actors involved in the armament trade.

Globalization has a universal character in the sense that it has affected the structure of all components of the global social system – political, economic, military, social, religious, ecological subsystems etc. From this perspective, we can also speak of a specialization of globalization, i.e., of political, military, social, financial, technological, ecological globalization and, last but not least, economic globalization.

Globalization has an appreciable amount of positive and negative effects. Positive elements include: the amplification and liberalization of trade, investment and financial flows, the expansion of democratic values, the protection of individual identity, the protection of the environment, and the *free movement* of security.

From a free market perspective, globalization will generate unprecedented prosperity as more nations will participate in the global economy, and technological and financial flows from developed countries to the least developed will lead to an equalization of wealth and the development of the whole world.

Globalization expands communication bridges between citizen communities. It has enough channels for it, such as multinational companies, NGOs, education, the Internet, which, in the informational era, are of great benefit to international migration and increased human contacts.

Globalization also has negative effects, such as: the fall in security for all indicators, the globalization of local and regional chronic phenomena, the globalization of large organized crime (trafficking in arms, drugs, people), the radicalization of ethnic and religious fanaticism, and terrorism. Related to culture, globalization breaks down cultures into *subcultures*: rap, homosexuality, etc., or *niche* cultures, which do not provide integration solutions for their constituent individuals. Negative issues are multiple also because globalization is an uncontrolled, ungoverned process. It is, in a way released from political control.

Effects of globalization on national security

Faced with the risks and threats that come with globalization, states find themselves fully discovered and realize the truth that global security has little to do with the traditional rise of national military power or allies. The global expansion of terrorism and the terror of weapons of mass destruction have prompted the world's states to understand that fighting them could be most effectively done by increasing efforts to promote security through co-operation.

Security through co-operation offers a more optimistic outlook on global security. It is based on foresight and partnership actions, opposes the use of force and is open to the participation of all interested states. It has as objectives the prevention of war and the possibility of creating the necessary means for initiating and conducting an aggression. Co-operation security is carried out through international and regional organizations (UN, OSCE, ASEAN, OSA, OUA, Arab League, etc.), governments and non-governmental organizations.

The new global security architecture is backed by the reform of security institutions, a process that strengthens global security structures, transforming them into more powerful and more representative institutions.

Component of global security, national security, after the end of the Cold War, has a new dimension, because now the threats to it are becoming more diffuse and no longer exclusively military. The proliferation of terrorist, cultural, ecological threats to national security risks calls for various means – military and non-military, national and international – which lead to an interpenetration of the national security element with the regional or global security, capable of ensuring stability and security through co-operation and coordination mechanisms, regionalization and globalization of military and security relations.

Some implications of globalization in the military field

Contemporary military globalization raises serious concerns about the significance and practice of sovereignty and state autonomy. Military power has played a fundamental role in the evolution and institutional form of the nation-state. The national defense capability by autonomous military means is central to the modern sovereign state concept. In the *era of globalization*, the traditional correlation between the national organization of the military, namely the national defense and the territorial state-state seems to undergo some transformations.

Compared with the beginning of the 20th century, when, as World War I and World War II demonstrated, decisions to threaten and use military force constituted the prerogative of national governments. Multilateral defense and security arrangements complicate, if not compromise, governments' decision-making in this regard. The development of defense policies and defense management in advanced capitalist states is no longer a national problem. The development of a national defense policy, from decisions on defense strategy to military deployment and use, is integrated into a matrix of institutionalized consultation and cooperation mechanisms, both bilateral and multilateral, both official and unofficial.

The existence and growth of the role of the UN and NATO, other international fora (OSCE, UN Conference on Disarmament, etc.) have helped to *extend* the process of developing and managing defense policy across national borders. Globalization has stimulated the institutionalization and improvement of a security and defense system in the Euro-Atlantic area, complementary to national security. There are few aspects of the national security policy on which the developments in international life of the last decades have not been impressed, that even the intelligence agencies have developed their own form of dialogue.

However, both realities and trends do not prefigure the end of the national armed forces, nor move towards a functional specialization of national military roles, and in no way involve international military integration with the loss of national identity.

The doctrine of national security is one of the essential and defining principles of the modern notion of sovereignty. The autonomous capacity of the modern state to defend the nation from external threats is a primordial component and the essential premise of the traditional conception of sovereignty. Modern states, the military, have always wanted to be independent. Contemporary era, marked by the processes of globalization has led to a reconsideration of the idea and practice of national security[8]. For many states, the *national security* strategy almost no longer distinguishes itself from the *international security* strategy together with other states, forming a *security community*.

Inside this *security community*, defense and national security strategies are formulated within institutionalized alliance systems, consultation and co-operation being the basic security policy mechanisms. The development and pursuit of national security objectives are inseparable from the development and pursuit of collective security. Even countries that have sought to achieve a high degree of autonomy in national defense (e.g. France) or maintain a formal policy of neutrality (e.g. Sweden) have joined the *extended security community*.

Globalization is basically associated with a global, dynamic, evolving, facilitating, and constraining structure. The structure is heavily stratified, since globalization is deeply uneven. This reflects both existing inequalities and generates new processes of inclusion and exclusion, new victors and losers.

Conclusions

The confusion of terms in social life – nations, ethnicities, nationalisms – is rarely the fruit of chance. Words are the objects and tools of ideological and political conflicts. Therefore, willingly or not, they are used in an equivocal manner. In social and political life, since the nineteenth century, ethnicity is designated as the people. To call ethnicity – a scientific concept – a people – a political term, means, implicitly or explicitly, to give it the right to claim political independence, the right to become a nation – a political unit. If, even in the scientific literature, ethnicity is often confused, the reason is that during the period of nationalism, ethnicity can claim, in the name of the people's right to dispose of themselves, recognition as a nation-political unit.

If we assimilate the nation of the state, it is because each state claims the expression of a democratic nation. The ambiguity of the term nation in social life is that it is necessarily linked to the modern principle of political legitimacy and the basic social bond.

The nation-state is far from having used its propulsion force, be it good or bad. And this force must be judged by a lack of efficient, unitary and majority/ unanimously accepted institutions for managing global issues. For over a generation, the trend of global politics was to weaken statehood. After September 11, 2001, the main problem of global politics is not to find ways of restricting statehood, but to build it. For individual societies and for the global community, state frailty is not a prelude to utopia, but to disaster[9]. Beyond global developments and theoretical discussions about the new approach to international relations, individuals see the source of national security in the state. For them, this is possible due to all the existing legislation at a given moment, to free access to justice, to the trust that the population usually has in the army, and to the foreign policy of the state with its most visible and comprehensive segment, the bilateral relations promoted in cooperation with entities of the same nature.

If ethnic feelings and passions continue to exist within civic nations, as Anthony Smith has extensively demonstrated, there is no need to draw the conclusion that there is no difference between ethnicity and nation. The nation is not confused with either ethnicity or the state. It is defined in a dual dialectical relationship with the former through which it takes shape in social reality. The political recognition of ethnicities, integrated into the nation, leads to disintegration and helplessness. The state, when it becomes too strong, tyrannical or totalitarian, absorbs the nation and destroys the community of citizens. Between ethnicity and state, there must be made room for the nation.

The study of national security from the perspective of integration and globalization processes, with all the chances and opportunities that they bring, but also with the many challenges imposed, is a necessity that has forced many scholars of the field to give it a vast space of investigation.

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SPECIFIC APPROACHES REGARDING THE APPROPRIATE LOGISTIC SUPPORT OF PHILIP II OF MACEDONIA'S MILITARY CAMPAIGNS

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Throughout history, the army leaders who have realized the overwhelming importance of logistics in military action have been those who have achieved their intended goals. The importance of logistics in relation to the success of military action is highlighted eloquently by the French general Antoine Henri Jomini: "Logistics encompasses the means and arrangements with which tactics and strategies are implemented. The strategy decides where to act; logistics bring troops to that point. "

But what is the beginning of military logistics in history?

All the great conquests were based on a strong logistics component, but who was the first leader to recognize its value?

Keywords: military logistics; supply procurement to the forces; forces sustainability, speed and mobility; pack animals; immediate action logistics area.

Military logistics is a set of operations aimed at providing the best conditions for carrying out the large-scale actions of an army[1]. Another definition states that logistics is one of the most important areas of military art in which a large part of the evolution or involution of the army is reflected[2]. Also, according to the terminology of the North Atlantic Alliance, military logistics is the science of planning and assuring the movement and maintenance of forces[3].

As it emerges from its very definition, military logistics is an essential component for the success of any military campaign, being considered an important branch of the art of war.

Another peculiarity of the concept of military logistics is that it clearly emerged from the need of the armies to secure supply during the military actions; therefore, logistics has in time experienced a process of transformation in accordance with the other components of military art. Therefore, gradually it passed from Provision of materiel to Military quartermaster, Administration of the army, The Rear of the army, Army services and presently Army logistics[4].

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As a consequence, the importance of logistics gradually increased, coming in the contemporary era, characterized by a high consumption of resources, to include various functional areas. At present, within NATO armies, logistics includes an extensive range of specific functions and responsibilities[5], such as:

- supply;
- production or acquisition of supplies;
- providing the necessary services for the military effort;
- logistics informatics system;
- maintenance of military equipment;
- movement and transportation of troops and materials (M&T);
- reception, staging and onward movement in the deployment/ redistribution of forces in/from theaters of operations (RSOM);
- infrastructure engineering for logistics (IEL);
- medical support;
- contractor management;
- host nation support (HNS).

The etymology of the word logistics comes from the Greek "logisteuo", which means above all to administer[6] or "skilled in calculating"[7], being used for the first time in the ancient Greek and Roman civilizations as an organic part of the armed forces of the ancient kingdoms of Europe – North Africa – Near and Middle East. The Macedonian, Roman or Byzantine empires had specialized components in supplying the troops, such as "skoidos"[8] in Hellenistic civilization or "logista", "logiste" and "logisteo"[9] in Latin civilization. These were officers in charge of logistics of troops, namely the management of supply flows, the transport of supplies, the distribution of materials, preserving the health of animals, the organization of quartering etc.

After the division and decline of the Eastern Roman Empire, the term logistics disappeared as an expression of history, even though, by its purpose and functionalities, the logistics of the military forces continued to exist in all the conquering campaigns of the Middle Ages, regardless of the geographic area. Consequently, even if it was otherwise defined, military logistics developed gradually but continuously over time.

The expression was re-used, thanks to the impetus of the Industrial Revolution, by the French emperor Napoleon Bonaparte (1769-1821), within the ample measures of reforming "La Grande Armée".

From the etymological point of view, the term reappeared again in 1838 in the "Précis de l'art de la guerre" - the extensive work of Baron Antoine-Henri Jomini [10] (1779-1869), general of the French Army, chief of staff of the Marshal Ney's Army Corps and military counselor of the Imperial House of Russia, one of the main theoreticians of the combat rules of engagement and admirer of Napoloeon's military genius. This was exemplified as a new specialty in the French imperial army, "maréchal des logis"[11] (assimilated in the time with a quartering non-commissioned officer), with three hierarchical ranks: "maréchal des logis-chef", "maréchal des logis-de carrière" and "maréchal des logis-sous contrat".

Since the expression "logistics" – with its derivations was not used ad litteram for a long time, from Antiquity to the Age of Enlightenment, during the present work, we will mainly use the expression "supplying the troops" to present more coherently the reality of the concept of logistics in the 4th century BC, as well as not to confuse its theorization from the Napoleonic era.

Historic sources credit the ancient king Philip II, the father of Alexander the Great, as the one who introduced the concept of supplying the troops in history, investing for the first time in specific capabilities meant to give the forces the necessary means to obtain military success.

The added value of logistics in the art of war, along with the cohesion successfully implemented by Philip in his army and the charisma of Alexander, were sufficient conditions for the Macedonian Armed Forces to cross over 25,000 kilometers in less than 13 years, so that the supremacy of Macedonia might stretch over three continents and include the territories of today's modern states: Greece, Turkey, Syria, Lebanon, Israel, Egypt, Iraq, Iran, Afghanistan, Uzbekistan, Tajikistan, Pakistan and India[12].

Nevertheless, the ambition inspired by Philip to Alexander, both dying in their prime, did not stop there. As a climax of his conquests, even before his death, Alexander prepared ample expeditions in the Arabian Peninsula, to Carthage, to Rome, and to the entire Mediterranean basin. Only their premature and surprising death, at just 46, respectively 33 years of age, prevented the realization of a vast "Universal Empire"[13] even during their life time – their true hybris.

If Alexander the Great remained in the history known as the first truly visionary military, who unambiguously promoted the generous ideal of unity of the human race and who adopted globalization by military conquest as a state policy, Philip II was unjustly, quasi-forgotten, although he himself laid the cornerstone in the Macedonian conquests, through the fundamental reformation of the armed forces and the adoption of progress in the military field, at an unprecedented level.

The echo in time of the victories of these ancient kings opened the way to other great military conquerors of the world: Caesar, Attila, Justinian I, Umar I, Genghis Khan, Mahomet II, Peter I, Napoleon Bonaparte and many others whose life was guided after the challenge of the Macedonians addressed to the divinity, inscribed in stone: "The earth is under my dominion; you, Zeus, stay with Olympus"[14].

Macedonia was a small state in the north of the Peloponnese Peninsula, dominated by mountainous relief, with isolated tribal formations. They controlled the mountain passes through which the barbarian invaders attacked the wealthy city-states of the Ancient Greece from Illyria in two directions: north and northwest[15]. Although Macedonians were related to the Greeks through Perdiccas I – the first king of Macedonia, the Greeks had always despised the Macedonians, considering them savages and barbarians.

Faced with the possibility of total extinction, Macedonians were forced to become powerful in order to survive because they were in the way of all the expeditions to Greece and their fellow countrymen were unwilling to help them.

Before the reformation of supplying the troops, implemented by the Macedonian king, during the classical period of ancient Greece, the wars between the city-states were, as a rule, followed by certain conventions. The combatants' armies met in a previously established place that met the conditions for combat and was accepted by all the belligerents. The confrontation never took a long time, and after its completion, the troops returned to their own city-states[16].

Because the soldiers wore on them only the weapons used in the battle, besides the actual combatants, the army consisted of many servants, women and slaves who were marching with the fighters to the chosen place without actually participating in the armed confrontation. Therefore, the proportion of non-combatants was much higher than that of combatants. The effects of this were the decrease of the speed and mobility of the forces, as well as the increase of the number of necessary rations, because by adding them, the number of those needed to be fed increased as well.

In the Dacian space, inclusively, the feeding of contingents in war time was ensured by the supplies that the fighters brought with themselves from home and which were generally carried by the servants. They met the army's needs for only a few days[17]. In exceptional cases, if battles lasted for more than a few days, food could be received from peacetime constituted reserves and kept safe in hidden or hardly accessible places.

Similarly, the Greek armies used wagons pulled by oxen to transport the supplies, which led to an even more dramatic decrease in the speed and mobility of the forces, and the crossing of the rough terrain areas was taking a very long time. All these causes made a long-time campaign impossible; the wars were taking place in a short period of time and at a short distance from the city-states.

Philip II (382 BC - 336 BC), the king of Macedonia in 359 BC, realized that all of this had to change rapidly. Thus, he understood that he must create a new system of supplying the troops within his army, based on sustainability, mobility and speed.

The precedent was set by the action of the Athenian military leader Xenophon (431 BC - 354 BC), who during the 10,000 Greek mercenaries' retreat to their home lands after the Battle of Cunaxa (401 BC) in the heart of Persia, through Babylonia, Assyria, and Armenia to Trebizond (now Trabzon – Turkey) where the Greek fleet was waiting, ordered the abandonment of all the army's baggage, except for those strictly needed for the battle and food[18]. This decision ensured the success of the march over 1,500 kilometers[19], because it brought the necessary speed and mobility to the Greeks in hostile territory, permanently harassed by the Persian army, left without supplies, decimated by diseases and demoralized, as Xenophon himself described it in his memoirs.

More than certainly inspired by Xenophon's decision, Philip II prohibited the use of wagons pulled by oxen in the Macedonian army, using instead the horse and the donkey as pack animals[20] for all the tasks where the ox was used. It was for the first time in the known history when a military commander in Europe had adopted such a measure designed to give his army the necessary mobility and the possibility of division of forces during the movement.

An enviable comparison[21]: even if a wagon pulled by an ox can carry 452 kilograms per day and a suitably equipped horse only 113 kilograms, the crucial difference is that five horses can easily carry the same amount 51 kilometers daily – a double distance compared to using oxen for transportation – and only half of the required amount of feed is used.

As an estimate, every horse consumes about 4.5 kilograms of fodder and an equal amount of grain per day. The animal feed was assured as follows: the fodder was collected from the transited areas and each animal was carrying 104 kilograms of grains, sufficient for their own food during 23 days[22].

Moreover, in order to reduce the cargo carried by the animals, Philip II increased the amount of materials that the fighter would carry with him at all times. Each Macedonian soldier would carry the necessary weapons, the equipment and food ration[23]. Thus, in addition to the sword, helmet, shield, armor, sarisa (a 6-meter-long spear, which in order to be easily transportable was disassembled in two parts), in its backpack there were also tools for digging, a blanket, personal clothing, medication, eating utensils, food and 18 kilograms of flour, necessary to feed for a period of 30 days[24].

All of the materials listed above weighed together about 37 kilograms, and this really represents the optimal weight that a soldier can carry on long distances without affecting his health. In comparison, the Roman soldier was carrying 27 kilograms without weapons (about 34 kg in total), as much as a French soldier participant in Waterloo (1815) and an English soldier from the Battle of Bunker Hill (1775) was carrying 36 kilograms, while in the modern age an American soldier in the Normandy Landing (1944) carried 37 kilograms[25].

This parallel over time best reveals the visionary spirit of the Macedonian king.

Even though people took up much of the cargo carried by the animals, there were materials and equipment that could only be transported with the animals, such as bulky objects like: the parts of the siege weapons, the tents, the wood, the stone grinders for the preparation of food, surplus food that was not carried by soldiers, food supplies, animal feed, etc. It was estimated that the weight of non-edible materials transported by a pack animal relative to the number of fighters to whom it was intended, was 1 to 50 (an animal carried objects required for 50 people)[26].

Therefore, in his first large-scale military campaign, in Illyria (358-357) against his father-in-law Bardilis, king of the Dardans, the Macedonian king used only 200 pack animals for an expeditionary force of 10,000 people[27].

Moreover, women, wives and other civilians were forbidden to accompany the troops. Servants were also limited to one for each horseman and one for every ten pedestrians[28]. They were carrying tools for preparing food, ropes, etc., along with their own equipment and food rations. They also accomplished other tasks such as road maintenance, procurement of food for humans or animals and guarding the camp. Only sometimes did they take part in the fight, in distinct corps of light infantry.

These measures determined the drastic reduction of the non-combatant personnel who traditionally accompanied the armed forces. For the first time in the history, the Macedonian army, consisting of 10,000 infantrymen and 600 horsemen[29] was accompanied by only 1,600 auxiliary personnel[30], which gave Philip II the capability to move troops faster and farther as well as the possibility of sustaining them on the battlefield for a few weeks only with the food they were carrying on their own.

The vast reforms in the field of supplying the troops implemented by Philip II had substantially increased the immediate range of action of the Macedonian Army, making it highly superior to any contemporary army. To point out, during one day, his armed forces could travel 24 kilometers in a normal foot march, and 32 kilometers in a forced foot march[31], absolute figures for that time period.

Furthermore, throughout the march, the rest halts to maintain animal health were well defined. After every hour, there were 10-minute rest halts, and after every three hours of march, there was a half-hour rest halt, when the animals' packs were removed[32]. Even the cavalrymen were marching alongside their mounts, along with the rest of the army.

A simple calculation reveals that at an average of 24 kilometers per day foot march, wearing supplies for 25 days, Philip's army could easily travel 480 kilometers without being supplied and still have a five-day food supply.

Under these circumstances, Philip II could instantly hit any rival between the Adriatic Sea, the Aegean Sea and the Danube River, in an area with a radius of 240 kilometers or ten days of march[33] from Pella, the royal capital.

The immediate action logistic area of the Macedonian Army is shown in Figure 1.

Figure 1. *The immediate action logistic area of the Macedonian Army*

Source: *"Map. 2, Logistical Range of Philip's Army", Gabriel A. Richard, Potomac Books, "Philip II of Macedonia Greater than Alexander", 2010, p. 89.*

Another advantage was that once the Macedonian army arrived in the desired location it could stay for other two weeks without having to resupply (consuming its own supplies that were transported) or, if required, it could opt for the continuation of the march[34].

As the sphere of Macedonian influence grew, Philip II would establish key points in all directions – forts and reinforcements with a preponderant role in resupplying troops, where he would store reserve supplies for his future campaigns.

At the time, particular attention was paid to the forces that defended themselves inside the fortresses; they were supplied from food depots organized in the fortresses[35].

Also, because the southern Balkan Peninsula is an important river basin, crossed by major rivers such as Nestus, Struma, Vardar, Haliacmon, Pineios, Erigon, Apsus, etc., surely some of these forts were built near fixed or floating bridges to ensure the guarding of these crossing points[36].

Another innovative idea implemented by Philip II in the field of supplying the troops was the staging of the army between marching stages in fortified areas – one of the lessons learned by the Macedonian king in his early campaigns, when the attacks of the mountain tribes took place predominantly during the rest of the troops, surprising him[37].

In order to avoid ambushes and to ensure the necessary conditions for restoring the combat capabilities of his soldiers[38], Philip II ordered every night the construction of camps surrounded by deep ditches and palisades, made of sharpened wooden fences. In the areas with no vegetation that could be used for this purpose, the wood was transported with the pack animals. Due to the obvious advantage brought to the protection of forces during military campaigns, the Romans adopted from the Macedonians the innovative measure of fortifications during the night-time staging.

The lethal combination of speed, mobility, supplying the troops, and the fighting spirit of the Macedonian army was clearly demonstrated in the Balkan campaign carried out by Alexander the Great, half a year after his father's assassination in the spring of 335 BC [39].

After leaving Amfipolis (today in northern Greece), the Macedonian army led by Alexander crossed the Stara Planina Mountains and obtained two victories south of the Danube river: first against the Thracians on Mount Haemus and the second against the tribes near the Lyginis River (a tributary of the Danube river). After a three-day march, they crossed the Danube river during the night and surprised the Getae, forcing them to withdraw after a first clash of the cavalry. Because he received news of the uprising of King Cleitus of Illiria and King Gaucias of the Taulans, Alexander headed for them and defeated them in the battle of Pelion (located in the south of Lake Prespa, today in Albania). Consequently, the entire northern border of Macedonia was pacified.

Later he received news of the rebellion of some Greek city-states, led by Teba and Athens. Alexander left immediately, and the surprisingly rapid presence of the Macedonian army discouraged the rebellion. Only Teba chose to fight and was defeated, and Alexander's revenge was cruel: the whole city – once the dominant power in Greece – was destroyed, all the inhabitants sold in slavery, and its territories were divided among the other cities in Boetia. Thus, Greece was pacified too.

The march of the Macedonian army and, implicitly, the effort to supply the troops, covered two thousand kilometers, of which the last five hundred were made in just 13 days – incredible figures for that period. At the same time, the Balkan campaign in the spring of 335 BC revealed to Alexander the true qualities of his army and gave him confidence in his power.

By introducing his visionary reforms in military logistics, for the first time in the known history, Philip II succeeded in raising the art of war far beyond its contemporaries, creating the premises for his son's great conquests.

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RELIGION AND THE FUNCTIONING OF MODERN SOCIETY

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The religious factor is the element with the longest continuity in the whole spectrum of the social space. The combination of various practices in everyday life with mystical habits and later with institutionalized forms of faith has contributed to the formation of a strong bond between man and divinity interceded by the religious institution. This has enabled the formation of powerful social systems (states, empires) led through a religious system-dependent normative system. The end of the eighteenth century produced the first re-establishment of the society of new norms of coexistence that were based on new principles distinct from those on which the states had functioned up to that point. The nineteenth and twentieth centuries represent a period of contrasts characterized by a strenuous struggle of the state's detachment towards the church.

Keywords: *religion; society; education; national state; revolution.*

Ever since the dawn of humanity, the religious factor has been playing a strong role in the process of creating the collective identity of a large mass of individuals. The primary needs of the individuals like providing food and personal security motivated them to organize and to search the protection of social collectivities (tribes, cities and later states). Even if all these structures were providing a regulatory framework necessary for the group to function, there were other requests of spiritual meaning which were above their skills. This kind of need was intensely exploited by a number of entities which through different means determined the appearance of structures that could satisfy the expectations of people. As in the case of the group identity created by the states, the ecclesiastical institutions were organized after a certain typology (ceremonial, clothing, common language) which, later, generated a strong feeling of identity. Most of these institutions summed up to transmitting their teachings in a restricted geographical area. Together with the development of technology there has been an expansion of some of these ideas at large geographical distances and the values that were promoted contributed to the creation of the so-called religions with universal valences (Christianism, Islam). Analyzing the evolution of global society from the perspective of the factors that contributed to modelling group thinking, religion constructed one of the determining factors in creating norms and rules.

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The appearance and development of the ruling system inspired by religious principles

Antiquity was characterized by the existence of a polytheist-type of cultural religion, capable of influencing people at a reduced community level. As the bounds of the ancient empires were furthering away from the dominant center, from a political, economic and cultural point of view there was a tendency of expansion of religion and the powerful cultures were imposing in relation to the least representative ones. In its full glory, in the Roman Empire there were a number of religious entities specific for every part of the empire and entities that were supposed to tolerate each other[1].

The big change that produced a big division of this world occurred because of the appearance of Christianism. This produces a rupture in this order inside the Roman world where there could coexist, relatively peacefully, all the forms of spiritual manifestation of the people inside the empire or the neighboring ones[2].

The new religious philosophy offered its followers an integral vision which was spreading unicity and excluded the others forms of religious manifestation. This unifying vision contradicted the rules and institutions on which the Romanian society was operating. In a first phase, Rome ordered the annihilation by force of the potential danger to its political stability, trying to destroy the new faith in its training space, Palestine. Christianity was benefiting of a well-established organizational structure[3] and was exploiting vulnerabilities of the Roman world; it surpassed the space limits and succeeded in gaining a lot of followers, many of them being slaves and poor people.

From the point of view of the system functionality in analysis of religions, the European continent represent an interesting case study. Even if it had not represented the space of Christianity, at the end of eleventh century it was considered a Christian continent. This process happened in two steps, the first one was in the first century when, concomitantly with the spreading of Christianity in Middle East, Africa and Asia, the missionaries had preached the Bible in Greece, Italy and Gaul (France today). The second step happened between the ninth and eleventh century when the conversion of Slavic tribes, Hungarians and the others migrant tribes took place[4].

Managing to overcome the tense moments which had appeared as a result of violent interactions with Roman authorities from the first part of the process of extension within borders, in 313, through the Milano edict, the Roman Emperor, Constantin the Great recognized Christianity as an important religion. The new religion managed to become the greatest one in 380 when Emperor Theodosius approved the Tesalonic edict through which this cult became the official religion of the empire[5].

The battle for supremacy inside the Christian church manifested early; in the beginning, this institution recognized three bishops, in Rome, Alexandria and Antiohia, while in 451 two more bishops were added in Constantinople and Jerusalem[6] after the council of Chalcedon.

Over time there were two centers of power, one in Rome and one in Constantinople. Each of the two bishops tried to attract as many believers as possible in their own sphere of influence, either through direct conversion of some people, or by attracting on their side some leaders who recognized the primacy of the other bishopric. Once their political and economic power grew stronger each of the two religious leaders The Pope and The Patriarch firmly asserted that they represent "the only authentic expression of Christian truth"[7].

Despite all these misunderstandings, the church continued to operate unitedly until the second half of the 11th century, especially as the bishopric of Rome had to overcome the difficult period that it had suffered. As a result of the loss of support for the imperial authority Western Roman collapsed in 476. The papal power gradually recovered as a result of the conversion and subsequent taxation of most of the West European population as well as the recognition by its principals of its authority. As a result, in 1054 there was the first rupture of the two power centers and the appearance of the two Catholic and Orthodox Christian churches. This event was known to posterity as the "Great Schism"[8].

Simultaneously with the religious division of Europe, the Muslim world succeeded in encompassing and converting to the emerging Islamic religion an important part of the Christian world. This apparent disaster subsequently contributed to the cultural reconstruction of Europe. Although today we are accustomed to seeing this space as a profoundly conservative and traditionalist one, at the time of its expansion, the new religion proved more permissive than Christianity, accepting to preserve a large part of the scientific work conceived during antiquity, at that time it was condemned to being forgotten and forbidden to the general public by the Christian church. In the period 750-1100, unlike Christianity, Islam had long been open to science and technology, allowing the development of important cultural centers. Starting with the twelfth century, religious fundamentalists imposed their view of breaking the Muslim world by new scientific discoveries. One of the causes that led to the scientific regression of the Middle East was that the newly created religion did not separate the secular component from the religious one. In the vision of spiritual leaders: "The ideal state would be a theocracy, and in the absence of such an accomplishment, a good ruler leaves matters of soul and mind to the chief theologians"[9].

In the meantime, the discord between the two religious power centers of the Christian world grew in intensity and contributed to new breaks, the most important of which was the 16th century Protestant reform. At present, we can distinguish at least five distinct religious spaces on the territory of Europe: the Catholic, the Orthodox, the Lutheran, the Calvinist and the Muslim areas, to which we can add the intercalated spaces within, where the influence of the neo-protestant cults strongly grew, especially in the last half of century. Even though nowadays, due to the low number of believers and the fragmentation of this community, Jews can no longer hold a distinct cultural space, one must not minimize the impact that Jewish culture had on the European continent for nearly two thousand years.

Unlike the Orthodox Church, which coalesced with the Byzantine emperors and afterwards with the Christian princes in the ruling of the states from the Eastern and South-East Europe, the Catholic Church achieved the performance of effectively ruling the secular power. For a long period of time, they had imposed primacy, forcing the kings and princes of Central and Western Europe to recognize the statute of "perfect society" and receive support directly, militarily, financially in the actions they wanted to undertake[10]. Papacy had created a nominative framework (the so-called theory of indirect power, which is symbolized by the triple crown, worn by the *suveran pontiff*)[11] by which they forced the monarchs to take part in the Holy Wars (the Crusades) and later imposed the obligation of providing consistent support to the Catholic missionaries, who preached the Catholic faith in the outer space of influence, especially on the American continent.

The beginnings of consolidating the secular power of the national state

The legitimization of the Christian Church position in the European society produced, during the next centuries, powerful effects upon the functional norms of the states as well as for the rules of cohabitation in smaller communities. The building of cult places on the territory of every inhabited place, no matter their dimension, a crucifix or a statue of Virgin Mary at the crossroads of every roads and other distinctive elements of the new faith had become very rapidly customs from which there could be no exception[12]. This step was completed by the introduction of some new norms of social cohabitation which no longer referred to the Roman right, but to Christian moral principles, which later built the fundamental functioning of the society.

The Roman authorities gradually lost the vast majority of privileges, including the right they had previously exercised to set the points of interest in community life[13]. Time measurement, one of the fundamental elements of any society, had put on the religious attire, with major events in community life being celebrated in accordance with the liturgical calendar[14]. According to the rules imposed by the church representatives, the time allocated to the day and night was equally divided, which meant that the hours running at these time intervals had different values depending on the season (except for equinoxes). This custom has prevented European entrepreneurs for a very long time from being able to make a judicious planning of working time.

The lack of a standardized time measuring instrument restricted individuals and the community in which they had the opportunity to establish working meetings or to regulate their own or employees' work. These shortcomings were corrected only when the European society allowed the construction of mechanical clocks whose dial indicated equal time intervals. This innovation was applied only in the northern European states (mostly Protestant) as a result of the fact that the representatives of the Catholic Church opposed a strong resistance for almost a century[15]. Initially the new clocks were placed in the towers of the mayor's offices, thus marking a consolidation of secular power to the detriment of the ecclesiastical one. Since then, European capitalists have been able to better dispose of their employees' time, thus increasing the productivity of their work and in the same way constantly increasing the amount of commodity for each timeframe. Adam Smith rightly remarked this change of thought, concluding: "Increasing the wealth of nations is directly driven by the development of effective labor forces[16]."

An interesting episode during the struggle against the protestant reform is the "out-of-the-line behavior" of some of the Catholic princes and kings who hesitated and then resisted to some measures proposed by the Papacy to restore the old social order.

The national interest began to impose itself above the religious principles, leading to the emergence of military alliances based on modern principles that ignored the norms on which society had been based until then. Although the King of France had received the title of "Rex Catholicissimus" during the great social transformations of the seventeenth century, he supported the Papacy and later openly supported the coalition of protests of Sweden, Prussia and principles in northern Germany in their struggle against the Catholic Habsburg Empire, but at the same time the declared opponent of France[17].

One of the most important politicians of this century, the French Cardinal Richelieu became the prime minister of the kingdom led by King Louis XIII, building a new foreign policy strategy that promoted the principle of state rationality, ignoring the ecclesiastical guidelines that promoted the unity of faith. His policy promoted the principle of centralizing power and creating modern tools to enable royalty to directly manage revenue. In this regard, he ordered the founding of different positions such as head of government, representative of the government in the territory responsible for the collection of taxes and duties[18]. Accused by his opponents of failing to honor his duties as a man of the Church of Richelieu, he motivated his actions by the primacy of the secular duties over the religious ones that he considered to be personal issues: "Man is immortal, his salvation is in the afterlife", "The state is not immortal, and its salvation is now or never"[19]. By deciding to support Protestant principles, he tried to avoid creating a colossus in the center of Europe (the Habsburg Empire) which at one time contested the position of France. His action was fully justified because France had managed to preserve its position on the continent for more than 200 years until the "inevitable" Chancellor of Prussia, Otto von Bismarck, managed in 1870 to reunite the German space after the model of the national state.

Louis XIV continued the policy of consolidating central power by ensuring the loyalty of a new political class not based on the principle of heredity but on the ones of competence and fidelity to the monarch. He removed a part of the prerogatives of the old feudal seniors, and in order to combat possible upheaval, he ordered the constitution of the Versailles Court in which each of these aristocrats had the "privilege" of belonging to or sending one of his family's representatives.

This way he encumbered the nobility and imposed on them the duty to provide financial or military support without being able to condition this in any way. The Duke of Saint Simon recorded in his memoirs this sad moment for the French aristocracy: "He (Louis) was fully aware that although he could crush a noble with the burden of his disgrace, he could not destroy either him or his noble filiation, while a state secretary or a similar politician could have been brought with his whole family to the social extermination from which he had been raised"[20].

Religious Reformation and the birth of the modern state

Historians around the world agree with the idea that the Middle Ages ended in the early 16th century, when small territorial entities were forcibly merged into multinational empires (Eastern Europe developed the Ottoman, Habsburg and later Russian Empires; in India, the Mogul Empire was formed, and the Chinese Empire managed to recover the territories that for a while were able to operate autonomously[21]. The only notable exception to this rule was Western Europe, a space in which feudal entities managed to retain part of the old privileges that later evolved to administrative territorial units that are now known as national states. The attempt of the Spanish Habsburg Empire to establish its hegemony in Western Europe met the hard resistance of the small territorial entities specific to the medieval organization (small kingdoms and principalities, duchies and the Italian republics and Swiss cantons) which canceled the possibility for the global political system to evolve to large, self-centered structures where it could very hardly implement the economic reforms generated by the Protestant reform.

This distinct evolution of the Western European states allowed the creation of the modern-state- system based on the three great principles: "capitalism, national state and citizens' rights"[22]. Aware of the need to introduce extensive social reforms, part of the great empires sought to imitate the model created by Western Europeans (the reforms made by Tsar Peter I in Russia, or the Tanzimat Reforms that attempted to produce an administrative regeneration within the Ottoman Empire), but due to the huge territorial space they were managing and the lack of an efficient communications system, they were doomed to failure.

Influence of the ideals generated by the French Revolution of 1789 on the secularization movement of the state

The French Revolution of 1789 produced a real reform of the civic space; many of the norms of Christian morality which at that time had the status of civic behavior norms were replaced by laws, approved by the new National Assembly set up on

13 June 1789. The new legislative assembly fully took over the social functions that the clergy were currently performing. A "civil status" was created, which through its officials exercised the attribute of citizens' registration, including the legalization of marriages, thus replacing the "sacrament" with a civil contract between equal partners in rights.

Also, the census was not made any more through christening but by declaring the newborn at the city hall. The two sacraments of the church were not fully abrogated but, instead, they became optional, being conditioned by their prior fulfillment of civil procedures. Things evolved a lot in certain states, thus, producing an almost clean rupture from the old habits. In order to get rid of any source of instability based on the different points of view of the citizens regarding religion, France eliminated from the census lists any reference regarding faith[23].

The next step towards reforming the state of France was the strict separation of the secular clergy, which, at that time, was subjugated by a national church autonomous from the Holly See. The only structures that remained strongly linked with the papacy were the monastic orders. Through the laws conceived by the civil authorities, certain principles that were regarded as taboo were touched upon, like the breaking of marriages, an element that was forbidden by the church norms but was accepted by the new ruling system. This element constituted one of the most difficult problems the new laic society confronted with. During the 19th century this subject was reviewed numerous times, finally being abrogated in 1817 and later on reinstituted in 1884[24]. The definitive rupture between the state and the church took place for the first time still in France in the year of 1905.

The ecclesiastical body constantly refused to acknowledge its diminished social role, which, starting from that moment, was only restricted to providing divine services and personally connecting with certain individuals who were using those services. The representatives of the Catholic clergy continued to claim their right of playing an active role in the community asking for the right to establish the moral norms and pronounce itself upon the obedience of those norms and deciding the actions to be taken against those who would defy those principles. The Vatican took a direct initiative towards solving the crisis caused by the decision of the French state to transfer an amount of the Catholic church's in France goods to laic cultural organizations created to replace the representatives of the church who were working in those fields of activity.

Lacking support from the popular opinion in 1918 the French parliament was forced to acknowledge the distinct character that the ecclesiastic institution had inside the civic society. Through the law of separation, the French state granted the ecclesiastic institutions the right to intervene in its problems regarding the administration of institutions that were considered restrictive systems (boarding schools, the military institution, penitentiaries and hospitals)[25]. Moreover, the religious cults acknowledged, no matter of the part they played in society before the French Revolution, were allowed to maintain, using money from the state, priests that would take care of those institutions.

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1 Edward Gibbon, *The history of the decline of the Roman Empire. An anthology from the height of the empire until the end of Justinian's reign*, Humanities Publishing House, Bucharest, 2018, pp. 58-59.

2 *Ibidem*, p. 325.

3 Barry Buzan, Richard Little, *Sistemele internaţionale în istoria lumii*, Polirom Publishing House, Iaşi, 2009, p. 223.

4 Thimoty Yates, *The expansion of Christianity*, Lion Hudson Plc, London, 2004, p. 27.

5 James Rives, *Religion in the Roman Empire*, Wiley–Blackwell, New York, NY, SUA, 2006, p. 196.

6 Thomas Bokenkotter, *A Concise History of the Catholic Church*, Doubleday Publishing House, New York, NY, SUA, 2004, p. 84.

7 Rene Rémond, *Religion and Society in Europe*, Polirom Publishing House, Iaşi, 2003, p. 27.

8 https://www.britannica.com/event/Schism-of-1054

9 David Landes, *Avuția și sărăcia națiunilor. De ce unele țări sunt atât de bogate, iar altele atât de sărace*, Polirom Publishing House, Iași, 2013, p. 62.

10 René Rémond, *op.cit.*, p. 33.

11 The wearing of triple crown model was adopted from the Ancient Orient where several characters were attested as being crowned with such a royal symbol. Papacy took this custom by the end of the 12th century, when the first type of crown was created as a symbol of the Church superiority over the state. Lately, in the 14th century, Pope Boniface the 7th wore a second crown, which this time symbolized the superiority of the Catholic Church over every person and their soul. A third crown was created in the year 1340, when the Papacy was in a crisis and was forced to temporary set their headquarters in Avignon. The new crown symbolized the triple power of the *suveran pontiff* upon the sky, the earth and the soul, the *suveran pontiff* taking again the title of "Pontifex maximus". Before, this title was granted to the Roman emperors, who had the attribute of being the supreme religious rulers, thus

trying to look after the secular status of the empire. Starting with the year 382, Emperor Gratius Flavianus Augustus confiscated all the properties which produced income to the pagan cults. This action attracted the antipathy of the pagan senators. To defy this, he was forced to give up his supreme religious title, but this attribute was immediately attained and taken by the bishop of Rome. Subsequent, the triple crown remained one of the most important symbols of the Catholicism, being even today on the flag of Vatican; *see* Ramsay MacMULLEN, Christianizing The Roman Empire AD 100–400, Yale University Press, 1984.

12 René Rémond, *op.cit.*, p. 27.

13 The leaders of Rome had the right to request the creation of timetables in which they had the right to register the legal holidays and the days for commemorating important facts from the past of the state. One of the most important time-measuring instruments was the Julian calendar, ordered by Julius Caesar to Sosigenes, the astronomer in Alexandria, and which came into use in 45 BC. Ch. He divided the year into 365 days grouped in 12 months with a brisk year every four years, but with a small imperfection of 11 minutes each year (every 128 years resulted a day in minus). Also, some months of the year took the names of these leaders, the month of July was named in honor of Caesar, and August in honor of his nephew Octavian Augustus, the first Emperor of Rome. The next recast of the calendar was set on February 24, 1582, at the order of Pope Gregory XIII, whose name he took over - the Gregorian calendar. Richards, E.G., Urban, Sean E.; Seidelmann, P. Kenneth, eds. Explanatory Supplement to the Astronomical Almanac (3rd ed.). Mill Valley, Calif.: University Science Books, 2013, p. 595.

14 René Rémond, op. cit., p. 27.

15 David Landes, *The Wealth and Poverty of Nations. Why some countries are so rich and others so poor*, Polirom Publishing House, Iași, 2013, pp. 57-58.

16 *Ibidem*, p. 58.

17 Henry Kissinger, *Ordinea mondială. Reflecții asupra specificului națiunilor și al cursului istoriei*, Rao Publishing House, Bucharest, 2015, p. 26.

18 *Ibidem*, p. 25.

19 *Ibidem*, p. 26.

20 *Ibidem*, p. 35.

21 Immanuel Wallerstein, Randall Collins, Michael Mann, Georgi Derluguian, Craig Calhoun, *Are capitalismul un viitor?*, Comunicare.ro Press, Bucharest, 2015, p. 156.

22 *Ibidem*, p. 145.

23 René Rémond, *op.cit.*, p. 54.

24 *Ibidem*, pp. 55-56.

25 *Ibidem*, pp. 209-210.

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THE EFFECTS OF SEDENTARISM ON THE HUMAN BODY

Lt.Col.Lect. Gabriel Constantin CIAPA, PhD*

The last decades have shown us that the human's survival means has undergone changes, and in some cases these changes are radical. Technological development and evolution, the development of the society, environmental changes, social influences have produced changes in everyday human behaviour, they have altered or changed the communication possibilities of people and their need for socialization, have made categorical changes in the way people perceive movement and travel, the way we work and shop etc. These changes definitely influence human behaviour. The association between the behaviour of modern man, either at home or in the society, and physical inactivity, can be found, as effects, in structural, physiological and psychological changes, sometimes irreversible. This material synthesizes some of the effects of sedentarism on the human body, while also highlighting the possible diseases to which we are exposed because of the lack of physical activity.

Keywords: sedentarism; movement; human body; physical activity; sedentary behaviour; inactivity.

The behaviors and habits of the modern world determine important changes in the humans' evolution over the course of their lives. If the beginning of life is marked by discovery, play, study, its second part is driven by the need for survival, by the actual existence. The need to exist is often found in the behaviors dictated by the reasoning of a job, its stability, convenience, tranquility, and last but not least the physical safety offered by the non-involvement in different physical activities.

Adding reading (from the perspective of the lack of movement, inactivity), watching TV programs or other entertainment activities that require a screen (phone, monitor, tablet etc.) definitely creates the premises of a sedentary life, lacking the beneficial contribution of movement. As a matter of fact, "movement is a characteristic of the living matter; the human, as a form of existence of the living matter, is defined by movement. Adaptation to external environmental conditions, to social conditions, is under the effect of human movement"[1].

The effects of sedentaryism on the human body

As mentioned earlier, movement is life. If social evolution indicates or determines how we behave, then we should look at activities that involve a form of movement and involve the expenditure of energy on our part as ways of combating sedentaryism.

But what is sedentaryism? In a broad sense, sedentaryism can be understood as the state in which the body is not involved in any kind of motor activity, does not perform any action other than sitting on the chair (armchair, sofa etc.), lying down (except for periods of sleep during the night) or inclined, a behavior that is simply characterized by our ability to do nothing.

In a precise vision, sedentary behavior is understood to be characterized by a low energy expenditure where the metabolic consumption is less than the value of 1.5 MET. "A metabolic equivalent (MET) is defined as the amount of oxygen consumed while at rest and is equal to 3.5 ml O_2 per kg body weight x min"[2]. The MET concept is a simple, practical and easy procedure understood to express the energy cost of physical activities as a multiple of the metabolic rate at rest. This consumption of O_2 transposed in kcal would be for a sedentary man with a weight of 70 kg in 24 hours, about 2300 kcal, given that during sleep the energy consumption is lower, reaching the value of 0.9 MET. In other words, a sedentary man weighting 70 kg needs about 2300 kcal to live. At the opposite end, we can say that any energy requirement higher than this value of 1.5 MET is a consequence of the sedentary behavior changes through the emergence of various motion-related activities that involve motor activity, neuropsychological activity or their combination.

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According to the World Health Organization, one in four adults does not carry out enough physical activity and inactivity is one of the major threats to the population, being ranked as the fourth leading cause of death worldwide. We do not have to look for statistics to become mere observers of this state. It is enough to look within our entourage to get an idea from this point of view. It is much simpler, convenient and accessible to do nothing than to go out in the park for a walk, go shopping, get up from the couch and dance on a series of songs that we like, to go to a swimming pool or to the gym.

If we look at and analyze Figure 1, we can see some examples of activities that people can do daily, as well as the approximate time they spend performing them.

Another effect of sedentaryism is cancer. A profound analysis of over 40 studies, including more than 4 million people, a significant figure for any research, has shown that sedentaryism can be the cause of many cancers: colon cancer – about 24%, lung cancer – approximately 21% risk, endometrial cancer – 32% risk and even breast cancer. The risk of death is accentuated by how low physical activity is.

Otherwise a cause of this inactivity is television. Those who spend more than 7 hours in front of him pose an obvious risk of getting one of the above cancers as compared to those who watch TV programs up to an hour a day[6]. Studies show that, for every hour spent in front of the TV, if there is a regular behavior to use between 2 and 4 hours without a break, it may increase the risk

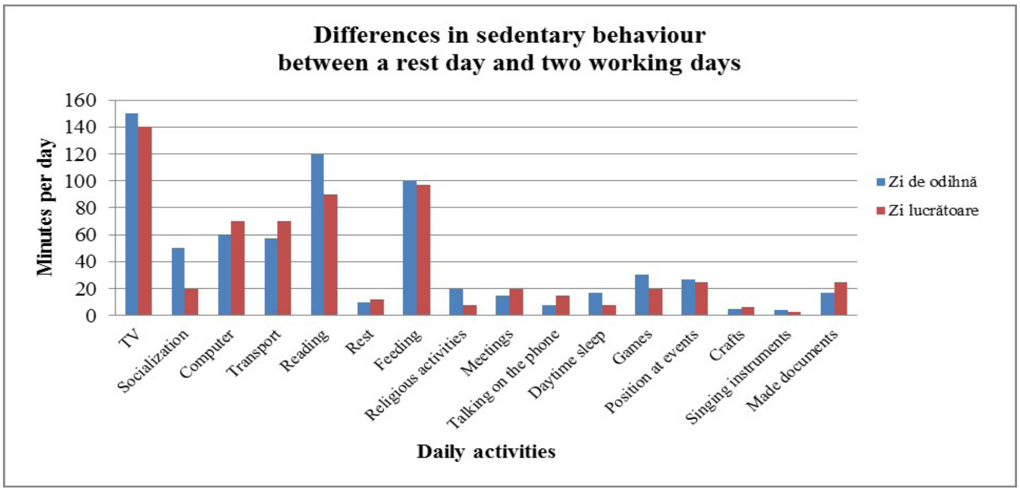

Figure 1. ***Examples of daily activities and the time allocated to them[3]***

The impact of these minutes spent in physical, sedentary inactivity can be found in a number of negative effects on the body, some of them with irreversible health effects. A first effect of the sedentary behavior, not necessarily important, is found in changes in the circulatory system. In the sense of inactivity, these changes in the circulatory system are materialized by the occurrence of cardiovascular diseases. There are studies[4] showing that sedentaryism has an incidence of between 2% and 17% in terms of increasing the incidence of cardiac and vascular incidences, blood pressure in adults, young people and children. There is also a direct link between a cause of cardiovascular mortality and sedentaryism. It favors pulmonary embolism[5], as a consequence of deep venous thrombosis.

of diabetes, cancer or cardiovascular diseases with values ranging from 9% to 11%, on a case-by-case basis.

Inactivity can lead to type 2 diabetes, another effect of sedentaryism. Even if we have a rational diet and body weight is good, the amount of sugar in the blood can increase, much more if there is no form of its consumption. In other words, your blood sugar level may exceed your normal range. For an adult, the blood sugar level has a baseline ranging from 75 to 110 mg/dl, measured in the morning without caloric or hydric intake. But what is type 2 diabetes? Diabetes mellitus is a malfunction of the pancreas, an internal organ that secretes insulin in the body. The role of insulin is to regulate the amount of glucose in the blood, which tends to increase as a result of glucose intake or sugar-containing products. As a result of pancreatic dysfunction, the amount of glucose in the blood can no longer be controlled, leading to an increase in blood glucose above 110 mg/dl.

This increase may lead to diabetes. In case of complete pancreatic disability to insulin secretion, type 1 diabetes mellitus appears – in this case, in order to continue life, insulin is administered as treatment. Where there is only a decrease in the amount of insulin, whether we are talking about low secretion or another action independent of the pancreas that prevents its proper functioning, we are talking about type 2 diabetes. In this type of diabetes, hyperglycemia may occur in excess of 300-350 ml/dl, which could lead to the installation of a type of coma.

Understanding what diabetes means, we can associate sedentaryism with the chances of developing and the onset of type 2 diabetes, knowing that physical activities can be potentially consuming blood sugars. Considering that at an average increase in the risk of installing an illness by 10%/hour spent in front of the TV for two hours, the risk of developing type 2 diabetes increases by about 20%.

The study "Breaking prolonged sitting reduces postprandial glycaemia in healthy, normal-weight adults: A randomized crossover trial" states that a break of about 1 minute and 40 seconds every 30 minutes of inactivity is more effective than a 30-minute walk in fighting the increase in glucose concentration.

Another effect of the sedentary behavior is found in changes in the amount of body fat, in the sense that its increase leads to obesity and being overweight. As a matter of fact, obesity and overweight are defined as excessive accumulation of fat in the body both around the internal organs and subcutaneously, which could cause serious diseases such as hypertension, dyslipidemia, type 2 diabetes, cardiac disease, osteoarthritis, cerebrovascular, respiratory, various cancers or even death. It is estimated that 35% of deaths from coronary artery disease, 32% of deaths from colorectal cancer and 35% of deaths from diabetes can be directly attributed to sedentaryism and being overweight, according to the study "The public health burdens of sedentary living habits: theoretical but realistic estimates"[7].

The lack of movement together with the inappropriate consumption of food for the work a person carries out can lead to obesity. This is not generally true, knowing that about half of the world's population is characterized by rapid metabolism - this does not mean that the body does not work properly, on the contrary it burns or consumes excess nutrients and does not create energy deposits (also understood as accumulations in excess fat).

If, simultaneously with this increase of fat, occurring around the waist (central obesity), there appears an increase in blood pressure, an increased number of triglycerides, the decrease of the "good" cholesterol (HDL), and a slight increase in blood glucose, one must admit that people are susceptible to the onset of the metabolic syndrome. This may also be an effect of sitting in front of the TV too long. The study "Sedentary behavior and health outcomes: An overview of systematic reviews" supports the link between irrational and unhealthy eating, physical inactivity and TV. Men or women who do not have physical activity may have an increased risk of developing this syndrome, ranging from 73% -76%, compared to those who carry out any kind of activity[8].

In parallel with all these aspects focusing on obesity, as a result of sedentaryism, Harvard University states that men with a waist over 107 cm (42 inches) are prone to erectile dysfunctions.

Also, the sedentary behavior may be the cause of osteoporosis, muscle degeneration, spinal cord pain. As far as osteoporosis is concerned[9], bone metabolism is a more dynamic process, more effective if the human body performs more movements. "By this, the bones directly involved in action are more developed. The lack of activity leads to their thinning"[10]. Some sedentary activities may be associated with this bone degeneration. Knowing one of the roles of the bones, supporting the body and ensuring its locomotion, one can quite simply deduce the importance of maintaining their health.

In the situation of inactive muscle groups, they reduce their elasticity, extensibility, contractility, strength. Muscles, by their fundamental function of ensuring the movement of the body, coupled with the assertion of the postulate, that "any organ that is not used is atrophic" we can admit that these are a key to ensuring the survival of man.

The sitting position is associated in many cases with back pain in the lumbar region - most often, and in the cervical area. According to the study "Breaking up workplace sitting time with intermittent standing bouts improves fatigue and musculoskeletal discomfort in overweight/obese office workers", some workers who were working in the sitting position were asked to stop their work for a short period of time every 30 minutes. In this way, those who discontinued work experienced a decrease in the back discomfort by up to 32%. Also the sitting position may accentuate the anterior-posterior curvature of the spine, creating additional pressure on the intervertebral discs. Over time, these pressures may cause disc degradation and disc herniation (movement of an intervertebral disc).

Another major effect that sedentaryism can have is also found is connected to mental health. Inactivity can be a prerequisite for depression by increasing the time spent on dominant negative thoughts. Knowing the social character of sports activities, which are often held in groups or around people, we can admit that physical activity is a solution to fight depression. It was also found that cognitive performance improves by up to 18% following a moderate-intensity physical activity over a 12-week period. Also for the same period there was also a reduction of the biological age by 6-8 years.

Although inactivity or a sedentary behavior tends to become a lifestyle and its negative effects can influence its development, combatting it can be done quite easily, given the multiple choices of

Table 1

EXAMPLES OF ACTIVITIES AND CHOICES OF BEHAVIOUR[11]

CONTEXT	LOCATION OF BEHAVIOUR	ACTIVITY	BEHAVIOURAL CHOICES	
			Physical activity	Sedentary behaviour
Community	Public spaces (park, beach) Sports bases Stores Social areas (coffee shops, restaurants etc.)	Recreation/ socializing	Walking, jogging, participation in sports activities, dancing, group walk	Sitting position and socializing, TV, attenting events, feeding activity, computer activity, video games
		Organized recreational programs	Group walking, exercises in and with the group	Reading within a group, group work
House	Interior Exterior	Household work/ relaxation	Vacuuming, general cleaning, garden work	Dishwashing, ironing, sitting down and laying down
Occupational	Desk Commerce and industry Services	Production	Walking, using stairs	E-commerce, using the elevator
		Communication, services	Going to one's peers	E-mail, telephone
Educational	School Other forms of training	Occasional activities	Walking, using stairs	Using the elevator, sitting
		Extracurricular activities	PE within the school curricula, extracurricular sports activities	Use of internet and the computer, relaxation and socializing
Transport	Street Access ways for walking and riding a bike Metro	Commuting	Walking, riding a bike	Driving, public transport

how to deal with different daily tasks. There are enough ways we can make a choice to fight this behavior. *Table no. 1* presents several types of activities in everyday life, as well as variants to prevent a sedentary behavior.

Conclusions

We have noticed a series of effects that sedentaryism can have on the human body. These effects, in some situations, are irreversible and, if treated superficially, can even cause death. Obesity, cancer, diabetes or cardiovascular disease are not just simple diseases. They are obvious causes for the death of millions of people annually globally.

The role of activities involving physical effort is found in a series of beneficial effects on the body and in fighting the negative ones. Moreover, practicing sporting activities, even decentralized, will "positively influence some structural-functional components of the body (somatic sphere, major functions, energy reserves, psychic resources), having beneficial effects"[12], within certain limits, on the body, irrespective of age and gender, regardless of the geographical area where the person is.

In all this social blend, something cannot really be neglected. This "something" is represented by the children's behavior. Children, we all know it, have an incredible ability to copy or imitate our adult behavior, looking for and seeing us as examples. Or, in this situation, a sedentary tendency can definitely occur among them, especially if we, as parents or adults, are dominated by this kind of behavior, physical inactivity.

Without an active involvement of adults in self-education and changing the sedentary behavior, in educating and altering the children's behavior, we will become a society of obese, sick people, where health problems will be more and more often, and unfortunately, more serious.

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