ASPECTS REGARDING THE USE OF FIELD ARTILLERY IN CONTEMPORARY OPERATIONS

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Throughout history, the mission of the field artillery was to destroy, neutralize, or suppress the enemy with cannon, rocket, or missile fires and to integrate all fire support assets into the combined arms operations. Field Artillery has inflicted more casualties than any other weapon system on post-XIX-th century battlefields.

More recently, field artillery proved its role on the battlefield în the Operations Desert Storm, Iraqi Freedom and Enduring Freedom în Afghanistan, not to mention currently în Ukraine, where around 80 % of casualties are artillery related.

Keywords: suppress the enemy; integrate fire support; weapon system.

The contemporary world has been confronted and continues to face a multitude of political and security issues related to inter-state relations, despite the existence of international organizations designed for settling internal or external conflict situations.

The second half of the twentieth century brought to the forefront the Cold War which imposed a strategic balance on the "edge of a knife", a balance still full of the wounds of the remembrance of the horrors of the Second World War, the terror exerted by the arms race, weapons of mass destruction (WMD), fear of each other and, last but not least, of the great responsibilities assumed.

Thus, the end of the Second World War did not lead to a peace situation, but it turned into another kind of war - a world war - a war of lust, the threat that was applied to genetic strategies or generative strategies (armament strategies, battlefield developments, doctrines, concepts, clusters and force regroups), wear strategies, embankment strategies, influence strategies, deterrence strategies (especially nuclear), in general, indirect strategies[1].

Later, the end of the Cold War (with the victory of Western democracies or, perhaps, without a victory) did not mean the end of the war, but the continuation of the war through other means.

Although not global, just five years after the end of the Second World War, a whole series of regional conflicts broke out, with different motivations and justifications, be they ideological, the division of spheres of influence, religious or other.

A few particular examples of post-war conflicts highlight some relevant aspects of the use of artillery and rocket forces as a basis for the fire systems organized by military forces to carry out missions. The first major conflict was the Korean Peninsula, which commenced on June 25, 1950, when North Korea launched an army invasion in the southern 38 parallel and US President Harry S. Truman immediately reacted with the air and navy forces' commitment to support the defense of the Republic of Korea.

US Artillery's actions in Korea took place in successive stages of defense, counter-attack, and, in the end, offensive operations. According to some papers and articles consulted from open sources since the end of the Cold War, a number of established Western historians revised and rewrote about this conflict. For example, Allan R. Millett published two important papers detailing the evolution of the conflict as well as the impact on the use of US inter-American structures / forces: "The War for Korea, 1945-1950: A House Burning (2005)" and "The War for Korea, 1950-1951: They Came From the North (2010)".

The US Artillery Structures in the 1953 Korean War were mainly fitted with towed and / or self-propelled 105 mm, 155 mm, 8 inch self-propelled bomber and 240 mm self-propelled bumper[2]. The Korean War offers us a unique perspective for analyzing the effectiveness of the use of artillery structures in a high / high intensity conflict, mainly due to the significant number of missiles shot during the conflict[3].

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In some moments of the conflict, US Artillery troops fired five times the number of rounds compared to some periods of the Second World War[4]. This high volume of fire was generated by a number of factors, such as the use of defensive fire sectors to protect dispersed outposts and the execution of fire on the large number of North Korean and Chinese militants, which led the United Nations Korea to re-evaluate its lack of artillery units through higher consumption rules for long periods of time.

Moreover, in order to increase the efficiency of counter battery fire against static, strongly fortified firing positions, precise shots were used using impressive amounts of artillery projectiles for their annihilation.

The artillery fire planning process in the Korean War was not much different from that used in the Second World War, which assumed the definition given in the Artillery Battle Manual in force at that time[5] as a "tactical plan for the use of weapon systems within a structure so that their fire missions are coordinated".

Integrating forward observer teams into tactical maneuvering units, and ground and aircraft observation staff at senior levels were essential to supporting effective targeting.

In the Vietnam war (1955-1975), due to the specific conditions of the land on which the actions were carried out, the missions for which artillery was used experienced a slight rebound.

Units with uncovered flanks and large spaces between them were determined for the mode of action that was more decentralized, with the exception of classical centralized missions (preparing the offensive fire, hitting the opponent in some moments of the fight).

In addition to classical missions, artillery assured the "testing" of newly emerging ammunition[6]. With all the growing importance of aviation, Field Artillery retained its dominant role in the 1960s, and under the conditions of the war in southern Vietnam, 137 allied artillery detachments were used, of which 74 belonged to the American Armed Forces.

The US Army engaged 63 artillery detachments, 32 were equipped with 105 mm M101 and M102 towed howitzers (range 11 and 14 km), 15 M114 155 mm towed howitzers (range 14,6 km) and self-propelled M110 howitzer (range 16.8 km), 12 mixed artillery self-propelled howitzer M110 203 mm (range 33 km), 7 M114 self-propelled howitzer, 5 self-propelled M109 155 mm howitzer and the remaining two, with self-propelled M108 105 mm howitzers.

Battles and engagements were insular, objective-oriented, and generally took place at great distances from the bases of dislocation, raising great problems in terms of action and force protection. The outbreak actions and the omnidirectional character of the threat decisively influenced the deployment of forces and fire support in the theater of operations, completely modifying the operational doctrine of artillery[7].

The main prerequisite for establishing the artillery maneuvering area was that every spot in the area in which the American units operated could be covered with fire by at least two artillery batteries.

Overall, medium and heavy artillery was placed in large, permanent bases, and the mild one, *i.e.* the 105 mm howitzer, consisted of smaller, temporary base crews that could, if necessary, move across the active area. For this reason, in the individual operating areas, there was the firing support base system, known as the FSB (Fire Support Base).

The confrontation between the Arab countries and Israel was the bloodiest, most expensive and unresolved conflict. The Arab-Israeli confrontations took place in the following timeline: May 15 - July 18, 1948 (Palestinian War), 29 October-7 November 1956 (Suez War), June 5, 1967 (Six-Day War) October 6- 25, 1973.

In the following paragraphs, we will present some details on the use of artillery (within ground troops) in the conflict of 06-25 October 1973[8].

Egypt had about 15 artillery brigades, nearly 200 tank destroyers, 1400-1600 guns of various sizes, about 500-600 missile launch ramps, a large number of individual anti-aircraft missiles (a rocket could be worn by a fighter).

Syria had 6 to 8 artillery regiments, 100-130 tank destroyers, around 1,000 guns, and over 150 anti-missile launch ramps. Israel had three independent artillery brigades, 50-60 anti-aircraft missile batteries, more than 1,500 cannons. The other participating countries did not engage in artillery technical battle. Some military specialists appreciate that a role of first importance in the army-Israeli army confrontation had TOW missiles

- Tube-launched, Optically tracked, Wire-guided anti-tank (at that time, ultramodern) that took out of the battle during the second Egyptian offensive over 250 of enemy tanks[9].

In the same region, extremely bloody and destructive warfare engaged Iran and Iraq. When this war broke out, few were the military and political observers who predicted this military confrontation would last for such a long time (September 4, 1980 - late December 1986).

In the war between Iran and Iraq, a wide range of weapons, techniques and artillery ammunition were used, but cannons were predominant, 120 mm and 155 mm, 175 mm non-recoil cannons and surface-to-surface missiles installed on mobile launch systems.

Regarding Soviet Army's operations in Afghanistan generally we have little information, given its failure and the very high loss of lives. As part of this intervention, artillery was massively used, prompting a Western military analyst to assert that the Soviet forces were constituted by a "artillery army with many tanks".

During the war, new firing techniques and drills were developed to hit the enemy in mountainous or desert ground. The shootings were executed with both state-of-the-art smart ammunition and classical ammunition.

In the planning of offensive operations, there was a variable length fire preparation with large-scale artillery. Direct fire support was executed by successive concentration of fire and sometimes even by wave of fire, so that the infantry advanced behind a true firewall, which resulted in great losses among the civilian population in the battlefield.

Regarding the use of artillery, this was done according to the organization of the Soviet army, i.e. artillery groups at the level of the regiment, brigade, division, in some artillery armed groups, depending on the scale of the operation, the artillery of the Romanian Armed Forces during the period after the Second World War and up to the events of 1989.

Artillery tasks were extremely diverse, including counter-battery fire (as a primary mission), interdiction, blocked firing, harassing, and battlefield lighting.

Frequently, direct-fire support was used with large caliber pieces in the offensive fire preparation. Massed fire was also used in order to neutralize or destroy hardened positions or to close areas. It was a mission to delay the withdrawal by pulling out cassette ammunition for this purpose.

The main drawbacks regarding the use of Soviet artillery in operation (combat) were the following: the lack of training of the infantry officers in matters of artillery, which required the bringing of artillery officers from the country for the fire to tactical levels; lack of co-ordination of the maneuver by maneuvering infantry units (subunits); insufficient number of battalion-level artillery scout-observers and infantry company; insufficient number of battalion artillery observer scouts and infantry companies; great difficulties in performing independent missions by battalion batteries due to the lack of possibilities to prepare indirect bursts at battery level.

From the way artillery was used in this military conflict, the following conclusions can be drawn: the artillery actions in anti-guerrilla missions need to be thoroughly prepared because they have very high particularities; the basic fire support process, when intelligent ammunition is not available, direct firing must be executed; in escorting and escorting convoys, in rough terrain, part of the artillery can be used; during battles in urban areas it is necessary to use intelligent guided ammunition in order to avoid unnecessary destruction and the damage of the population in the fighting area; training and training of infantry officers for the use of artillery.

During the Gulf War, during the period of the force's deflation on the theater of operations, the largest amount of artillery fires was made after the Second World War, about 7,000 pieces in both camps, mostly in large caliber (over 100 mm), of which about 3.000 guns[10]. Self-propelled artillery, which used diversified ammunition, had its share and benefitted from a cutting-edge artillery research technique at that time.

Artillery and rockets were used in a unitary concept in co-operation with other types of weapons, in order to achieve the conditions necessary for the transition to terrestrial offensive and the successful deployment of forces with minimal losses.

In the months leading up to the beginning of the war, a number of technical problems were solved regarding the co-operation in action of the artillery belonging to the different states in the coalition due to the incompatibility of the command and control systems, by applications and struggles for achieving the interoperability of allied artillery forces.

The Artillery executed concentrated or massed fire with high-caliber shells and rocket launchers (M.L.R.S.) or fire on small / punctual targets, using classic ammunition and high-precision ammunition of "COPPERHEAD" and "SKEET"[11] type.

The triggering of ground combat operations was not performed after a fire preparation in its classical form, directly before the offensive. The preparation of fire was carried out practically during the entire period of completion of the combat and training device for the triggering of the terrestrial actions, being executed by the combined actions of all the categories and the fire support platforms.

After the Allied forces offensive, given the high rate of advancement, the artillery executed missions aimed at forbidding the withdrawal of Iraqi forces and occupying new strengthened positions, hitting counter-attack groups and participating in their rejection.

The actions of the allied forces' artillery were based on a special mobility, by diversifying the artillery maneuvering areas, which were directly occupied with the execution of the fire missions, being abandoned immediately after their accomplishment.

In the context of the Gulf events, it is worth mentioning the use of the "SCUD" surface -to-surface rockets by the Iraqi artillery. These were usually launched at night using mobile ramps, creating false positions and ramps, given the danger of using chemical and biological loads.

In conclusion, the "*Desert Storm*" operation used both classical artillery and high-tech artillery, acquisition of targets by radiolocation, thermal imaging and infrared.

The Yugoslav conflict, one of the most serious interethnic conflicts that destabilized peace and security in the Balkans, is based on issues caused by political, ethnic and religious differences, territorial disputes and economic problems.

It generated both the breakdown of the former Yugoslavia and the emergence of new states, as well as a permanent animosity between the inhabitants of different nationalities and religions. During fighting in this region, combatants mainly used infantry, artillery and missile technology to carry out the following missions: the destruction of certain civilian and military objectives; closing communication channels; the unfolding of the struggle behind the enemy, according to the methods and procedures of the guerrilla warfare; accompanying convoys, etc.

The Russian Federation, known for its technological advantages in the field of high-precision weapons, preferred to use large-scale field artillery during the 1999 Chechnya war, so that about 70-90% of the enemy targets were committed by it.

During Operation Iraqi Freedom, field artillery units proved to be essential throughout the duration of major operations[12]. For example, on March 25, 2003, strong sand storms forced the Coalition aircraft to remain on the ground, exposing maneuvering forces that fought hard around Nasiriya to hit the enemy. Artillery was the only weapon that could intervene, providing fire support throughout the action regardless of weather conditions.

Nowadays, the conflict in Ukraine, begun in the spring of 2014, shows us that the main "killer" in the Donetsk and Lugansk areas are artillery units, especially those equipped with high-range barrels, usually mobile reactive / missile launch, BM - 21Grad / Tornado, B.M. - 27 Uragan and B.M-30 Smerch.

Thus, in an investigation by the "Bellingcat" website, known as "Origin of Artillery Attacks on Ukrainian Military Positions in Eastern Ukraine between 14 July 2014 and 8 August 2014", they analyzed the appearance of 1,353 craters generated by artillery shells near the common border between the two states.

Moreover, at the international artillery conference "Future Artillery-2017", hosted in the United Kingdom capital, London, the delegation of Ukraine, through gl.mr. Andriy Koliennikov, referring to the Donbass conflict, reported that 80% of all fire missions were executed by artillery of different calibers, pointing out that it is imperative that artillery units hold in their inventory sensors, especially "Unmanned Air Vehicle / Unmanned Air System" and modern counter-battery radars.

The percentage of fire missions is also confirmed in an article recently published in "ARMY MAGAZINE VOL. 69, NO. 2, FEBRUARY 2019", entitled "King of Battle: Russia breaks out the big guns" signed by Col. Liam COLLINS and Capt. Harrison MORGAN, who also described the main advantages of the Russian artillery as compared to that of the US-Army: fire / beating power, reaction capacity and culture / philosophy of use in operations.

In conclusion, it is clear from the articles presented in this article that the place and role of artillery has not only been maintained, but in some conflicts has even increased in importance, as shown in particular by those in Korea, the Arab-Israeli conflicts, which are still models of study triangle "aviation-tank-artillery" or in the conflict in Ukraine, "missile-based artillery (aviation) – unmanned aerial systems / platforms".

Due to the increase of the mobility and the range of most of the cannons, the achievement of modern technology of fire command and control, the automation and improvement of the working methods of the staffs and digitization as well as the use of the smart munitions ensured the achievement of much greater effects, with important implications for achieving the purposes of operations, campaigns or wars, as appropriate.

NOTES:

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9 *Ibidem,* p. 114.

10 Eugen Popescu, *op.cit.*, p. 114.

11 *Ibidem*, p. 115.

12 Dorin Ioniță, *Aspecte privind evoluția întrebuințării artileriei în operațiile recente,* Revista Artileria Modernă Română, Nr. 31, Sibiu, 2016, p. 7.

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