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With the emergence of the notion of multi-domain, all the elements that until now have been associated with the notion of joint, be it battle, operation or formation (in the sense of structure) have become associated with this new fashionable notion, which seems that it tends to replace the older notion of joint. However, we appreciate that the notion of joint should lose neither the importance it has had up to now, in the sense of a concept that has been applied and proved functional, shaping to a large extent the development of the military instrument of power, nor the possible evolutions of this concept, given the solid ground on which are now those who have implemented a joint mode of operation. Thus, in this article we aim at highlighting the main reasoning that have led to the emergence and application of this concept (joint) until now, then describing the current security environment and its implications on the operational level; later we will propose a completion of the joint operations, so that it can be applied under current and future threats.

Keywords: joint; joint operation; threat; security environment.

Compensating the shortcomings/vulnerabilities of one service through the strengths of another service, thus achieving a synergy between at least two services, we appreciate that it can be considered the essence of a joint operation.

Although the same reasoning can be applied within a service by achieving synergy and compensating for gaps between combined arms, the relatively low scale of this type of support generally does not allow the relationship to be classified as *joint*.

However, by widening the palette of types of forces within a service, such as aviation from the composition of the Land Forces and Naval Forces units, we appreciate that the notion of *joint* has begun to include all relevant military actions (in the sense of their scope).

Thus, in addition to strictly planning and conducting a military action, the involvement of other institutions in the National Defense System (inter-institutional level) is also included in the meaning of the word *joint*.

\*"Carol I" National Defence University, Bucharest e-mail: cucinschi.alexandru@gmail.com \*"Mircea cel Bătrân" Naval Academy, Constanța e-mail: chiorcea44@yahoo.com We notice that the notion of *joint* is applied at the tactical, operational, strategic-military and strategic-political level, a fact that indicates to us, on the one hand, the value of the notion itself, being able to describe a wide range of activities, as well as on the other hand, a possible misunderstanding of this concept, in the sense of extending it to activities that do not represent it and are not specific to it (Example: the inter-institutional level – at this level we appreciate that few aspects to achieve synergy can be managed).

As a result, in order to highlight what we consider to be essential to the notion of *joint*, we believe that a return to the origins of the joint operation is necessary and may free it from the elements added later (not all additions have been tested and validated) by those (theoreticians, researchers and teachers in the field of military science) who participated in the improvement, in most cases, of the concept of *joint*.

Thus, in order to highlight the essence of the joint operations, the research methodology will focus on the application of the longitudinal research method, which aims to identify the regularity of the elements that are characteristic to joint operations as well as the deficiencies found during the conduct of such operations. Later, the transversal research method will allow us, by identifying the particularities of the current security environment, to discover the extent to which the



joint operation can be applied in its current form, and, consequently, we will conclude with some considerations regarding its possible evolutions (predictive method).

We believe that the limits of research should also be mentioned: thus, the options for improving joint operations, which we propose through this article can be implemented under the conditions in which a certain conventional linearity is preserved in the way in which a military action is conducted. Also, in order to obtain relevant data, in the sense of accurately identifying the extent to which the method of improving joint operations by the elements mentioned in this article, it is necessary for these elements to be tested, in the first phase, through war games or simulation (in this article we only propose an improvement of a concept).

#### **Origins of joint operations**

According to the generally accepted definition of the current joint operation: operation in which at least two services are involved, under single command; the vast majority of military actions that were located in the vicinity of the sea or involved the projection of force over distant territories can be categorized as joint.

However, we consider that although they tick the elements contained in the definition of the joint operations and fall within its letter, they can hardly be considered in the spirit of the joint operations. Thus, campaigns such as:

- the land-sea campaign in Sicily, 415 BC -413 BC, in which an Athenian land expeditionary force (5,000 infantry and archers who planned to conduct land operations) used ships (about 100 triremes, numerous transport and cargo ships) to secure the strategic island off the coast of Italy (Sicily) which, it was considered, would have offered a decisive advantage in the war with Sparta (Carafano 2018, 24);

- the Invincible Armada campaign in the Anglo-Spanish War of 1588, which aimed to position the fleet in the English Channel and use land forces in the Netherlands, ultimately proving to be a plan far too ambitious for the Spanish Army (Murray 2002, 30);

- the Gallipoli campaign of 1915, in which although the Allies transported land forces by sea, later trying to support them with artillery strikes in the enemy-held territory and benefited from the uncontested use of the sea, through their inability to move quickly, decisively and using good practice, the joint force yielded all important advantages to the Turks, who used the control of the land environment more effectively (Murray 2002, 32); they focused on executing actions specific to each service and not on achieving a synergy in the campaign as a whole, not being able to compensate for vulnerabilities or enhance strong elements that could have brought success to the joint force.

Thus, the fact that the triremes and transport ships of the Athenians transported the land forces, the Spanish ships established a blockade in the English Channel and the British ships tried to sweep the Dardanelles and bombarded the coastal area, proves that, in this case, the Naval Forces actions carried out actions specific to this service, actions which, although they can be considered to be in support of land forces, by not fitting into the general idea of the joint operation, which is to obtain an effect on the adversary greater than the sum of the effects of the services, we consider that it greatly dilutes the name of the joint campaign, although as we mentioned before, the strictly descriptive elements of the joint operation are fulfilled.

On the other hand, we must admit the fact that, within the mentioned campaigns, the technological level did not allow for a synergy in the true sense of the word, the pace of actions being much slower compared to what was going to happen in the Second World War.

In contrast to these campaigns, in which only the composition of the force can be considered of joint type and the services executed actions specific to the environment in which they operated, the first campaign, which is considered by many experts in military sciences (Hooker and Coglianese 1993) to be truly joint is Operation Weserubung – the code name for Nazi Germany's assault on Denmark and Norway during World War II on April 9, 1940.

The Weserubung operation can be considered one of the most remarkable applications of the operational art and principles of war, the principle of surprise playing an important role in the German success. The planning made by the German forces, that took into account and exploited the factors of time, space and forces, is another key element in this operation. Also, the fact that the land forces, the navy and the air forces (Heer, Kriegsmarine,

Luftwaffe) fought as a team even though they faced the reluctance of the commanders of these services to subordinate themselves to each other and Hitler had to be considered the commander of this operation, it allowed the German Military to defy the Royal Navy by transporting troops directly to their objectives along the Norwegian coast (Hooker and Coglianese 1993).

Analyzing the elements that led to the success of this operation, even in the face of a superior adversary, mainly at sea, led us to a series of lessons that, in our opinion, are still neglected nowadays, most likely due to human considerations, in the sense in which we believe it can be affirmed that the level of training (discipline, intelligence and understanding of the situation in a pragmatic way) achieved by the German military at the beginning of the war was unmatched.

Thus, from the Germans we may learn about the importance of planning and turning apparent disadvantages into opportunities, connecting command and control to operational objectives and commander's intent, and the importance of initiative in military operations (Rice 2007).

In this operation, Germany engaged a joint force in a simultaneous assault, using centralized planning and decentralized execution, utilizing multiple corridors of approach, and having six key objectives. The objectives targeted and exploited the Allies' centers of gravity. Applying force to weaknesses, the Germans crushed Denmark in a single day and destroyed the Norwegian resistance in two months despite the fact that it was supported by strong British and French forces.

This we consider to be the most eloquent example of a joint operation, which in fact represents the implementation of the German military genius of the time, in the letter and spirit of the joint operation.

However, although it is considered the first joint operation in the true sense of the word, one important aspect of what the joint operation truly represents was not possible: commanding and controlling the joint force during the action, which was not possible due to the pride of the commanders of the different the armed forces services; they did not accept the fact that on a certain phase of the operation the service they lead could be less important and thus act in support of another service. After the Second World War, military thinking continued to be limited to competition among services, each service claiming the possibility of winning the war using only its own means. In addition to these, a new theory emerged, a theory that claimed that strategic dominance could be achieved through nuclear deterrence. During this period, the European countries (many of them NATO members), impoverished after the Second World War, were not willing to consume resources for building classic capabilities (ships, aircraft, tanks) and relied on the nuclear weapon as deterrence.

Despite the lessons learned in World War II, where joint operations proved necessary, little was done to institutionalize joint operations (Carafano 2018, 26).

Thus, until the initiation of the implementation of the air-land battle, which represented a revitalization of the joint operations, this tool patented by the Germans at the beginning of the Second World War and also employed by the other militaries during the war, was not used to its true potential.

## Air-land battle – the joint concept that influenced the configuration of the NATO Force Structure

Air-land battle is a concept that falls under joint operations which formed the basis for the modernization of the US Military in the 1970s and 1980s and was subsequently implemented by NATO and NATO members.

The modernization of the US military system was made possible by the establishment of a command (TRADOC<sup>1</sup>) intended for the development of military action (improvement of organization, equipment, weaponry and doctrine) on July 1, 1973 (Del 2017, 37).

The model proposed by TRADOC is the one that led the entire transformation process of the army, being promoted by the publication, in 1981, of TRADOC PAM 525-5, US Army operations concepts, the AirLand Battle and Corps 86, thus introducing the operational concept of air-land battle.

The implementation of the concept began to crystallize with the publication, in 1982, of a



<sup>&</sup>lt;sup>1</sup> Training and Doctrine Command.



manual that defined the concept of air-land battle, FM 100-5 Operations, and later, even the Naval Forces expressed the intention to implement this concept by publishing a report, in 1988 (Skinner 1988) explaining how it could influence Marine doctrine and maritime strategy.

Next, we will briefly present the main elements that made up this concept-based modernization of the armed forces (Figure No. 1) in order to facilitate the understanding of how the joint operation was revitalized, as well as the complexity of the process as a whole. of the concept, with the US Army having to deal with various such situations in conflicts following the concept's implementation;

- increasing combat power (physical, moral and conceptual components) of the USSR – "the fact that matters is that there is not enough depth of field to fight on and not much space to afford to lose – in the end, as I have described several times, the fact that the reserves of the Soviet Union are much closer than the reserves of the United States, and that the reserves of the Soviet Union are much larger. So when the battle starts we are

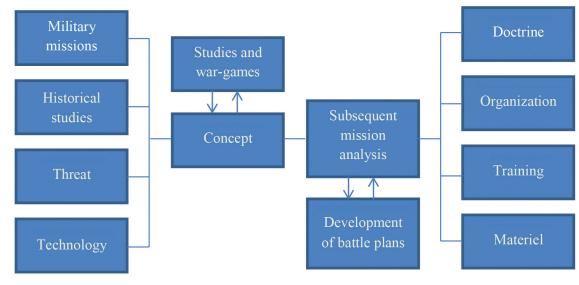


Figure no. 1 Concept based requirement system (Brownlee and Mullen III 1988)

Thus, the main input factors (currently defined as the future operating environment, in the present case – missions, historical studies, threat, technology) on which the concept developed were represented by:

- the identification of a new pattern of conducting the fight by the potential adversaries (in this case, through intermediaries) - The Fourth Arab-Israeli War, October 6 - 25, 1973, between a coalition of Arab states and Israel, in which the Arab Armies, although they were finally repelled by the Israeli Army, being equipped with the latest Soviet technology, they advanced very quickly and in a surprising way into the opponent's territory (History.com Editors 2018);

- the impossibility of winning a war – the lessons identified from the Vietnam War formed the basis of the air-ground battle concept, motivated by the desire of the US Ground Forces to avoid this type of asymmetric warfare (Malkasian 2014, 115) which, as recent history has shown, was not a strong point at a disadvantage and as the war goes on it gets worse" (Brownlee and MullenIII 1988, 191).

Based on these input factors, the concept proposed by General Starry, commander of TRADOC involved managing the fight with the USSR Military by using army corps as the main combat unit, combining practices that did not represent an element of novelty (maneuver warfare<sup>2</sup>, blitzkrieg<sup>3</sup>, deep operations<sup>4</sup>), but which were based on superior technology compared to the one of the opponents.

In addition to these elements specific to the Land Forces, the Air Force had the mission of engaging the enemy especially in depth (together

<sup>&</sup>lt;sup>2</sup> Defeating the adversary by rendering him unable to fight coherently (not by destruction), using a series of tactics to avoid strong points and quickly and aggressively engage vulnerabilities with the aim of morally and physically crippling him.

<sup>&</sup>lt;sup>3</sup>Fast planning and execution cycle.

<sup>&</sup>lt;sup>4</sup> Engaging the enemy not only at the contact line but also in the depths of the battle space.

with the artillery), thus preventing them from introducing the second echelon into battle and creating an operational advantage for the Ground Forces – known today as air interdiction as well as close air support.

Testing the validity of the concept was made possible through a series of war games, being the first concept to be tested largely through the use of simulation systems, which reduced the costs to this purpose.

Regarding the capabilities developed having this concept as a basis, it should be noted that not all of them were developed according to the specific requirements, largely due to the fact that sometimes the armament manufacturers were able to influence the procurement decisions.

Full implementation of the concept ended in the late 1980s, coinciding with the breakup of the Soviet Union, which is why this arms race is considered responsible for this collapse.

This rendered nonexistent the threat on which this concept-based modernization process was developed and, as a result, its effective application was no longer possible.

The fact that NATO adopted the air-ground battle, a concept initiated by the US army in 1984, an aspect also proven by its current force structure (consisting of army corps, more recently divisions and brigades also appeared) shows that this concept was implemented and correctly addressed the issue at the time, becoming an operating concept that is still used today.

The implementation of the concept in the Romanian Military was not possible, considering the fact that Romania was a member state of the Warsaw Pact with a different concept of operation, which was based on the number of forces, echeloning, few aspects related to the joint operation and the support among the services being exerted.

## Problems encountered by joint operations in the current security context

Currently, actors such as Russia and China have developed new methods of conducting military actions, methods that are largely based on advanced technology, long-range and highprecision weaponry. The complexity of the current environment also comes from the implementation by the two states of different methods of conducting military actions, with the main goal of denying access (A2AD) to increasingly larger areas, Russia specializing in the terrestrial environment and China in the marine one.

Thus, the threat at the operational level is a result of both pragmatic issues, such as studying the traditional US mode of action in recent operations (Desert Storm, Iraqi Freedom and Enduring Freedom) which was based on multinational joint operations, technological dominance, global projection of power, maneuver at tactical, operational and strategic level, effective combined fire system, logistical support and the initiative resulting from the application of the mission command concept (TRADOC Pamphlet 525-3-1 2018, i) as well as some issues related to the application of operational art – tactics, logistics, and advantageous prepositioning are disrupted by the use of A2AD.

The result of the two components led to the denial of strategic depth through specifical military means that aim to separate in time, space, and combat functions the US and its strategic allies located in the area contested by China and Russia.

The fact that Russia and China have invested over the past 25 years in developing an approach to "fracture" the air-ground battle by countering operational phasing over time and support between services, which have become increasingly predictable, means that the joint operations can be conducted only if the environment in which it is carried out is not contested, the sequencing of the operation being possible so that the Naval and Air Forces can engage the enemy by weakening his combat power, after which he is engaged by the joint forces (TRADOC Pamphlet 525-3-1 2018, vii) leads us to the need to approach military operations from a new perspective.

This fact can be achieved by developing a new operating concept, as is the case nowadays, by developing the multi-domain operation or by perfecting/improving existing operating concepts, as we believe may be the case of the joint operations (air-ground battle).

#### An update option of the joint operation

Currently, the joint operation as it has developed since the Second World War and culminated in the air-ground battle, can still be applied in this form only in spaces that are not contested by the use of specific means of A2AD.





The problem is that these spaces are getting smaller and smaller and are located in areas outside the spheres of influence of the great powers. Most likely, in the future, this type of "classical" joint operation will no longer lend itself to these areas either, considering the fact that the military instrument of power is less and less involved in the fulfillment of the established objectives, these objectives can be fulfilled more easily and discreetly through the other instruments of power.

As a result, we consider that in order for the joint operation, which is in fact the tested and validated method of conducting military actions (as opposed to the new concept of multi-domain operation) to be able to respond to current threats, it must be supplemented with layered defensive systems, on each environment (example: The Iron Dome model) to transform contested space into uncontested space where own forces can maneuver and support each other.

The problem that arises, in this case, is the fact that this space covered by the defensive systems is relatively small, which makes this type of operation lend itself, mainly defensively, on own territory.

However, we consider that, in the future, with the development of systems specifically intended for this purpose, this area can expand and eventually merge with areas developed by allies which develop the same type of concept.

In addition to this defensive area, we believe that, in order to be able to respond to current challenges, joint operation must also meet the following conditions:

- to tend towards the simultaneity of actions and not their separation in time and space, on the model of the supported - supporting commander;

- to include the cyber environment and space – they must be able to represent a real force multiplier, through preventive/offensive actions (as opposed to this type of operation which, as we mentioned, lends itself to the defensive); - to obtain interconnected services in order to have an appropriate level of readiness, (not coordinated or synchronized).

We should also mention that the joint operations are, in our opinion, part of the multi-domain operation and that the fourth phase (according to TRADOC Pamphlet 525-3-1, 2018) of the multidomain operation (exploitation) can be carried out under the form of a conventional joint operation

#### Conclusions

Because the history of armed conflicts has shown that it is preferable to improve an existing concept or the development of a new concept should be done from the perspective of the concept that is tested and validated, and considering the financial effort to implement a new concept, as we have previously mentioned that it was also the case after the Second World War (the implementation of the joint operation was delayed due to lack of funds and political will), we consider a viable option to update the joint operations in the version proposed by us or in another version that responds to threats from a certain region, an update which, although not a major change in military science, can contribute to the short and medium-term management of the identified threat.

Moreover, we believe that adding specific actions from the two new environments – cyber and space (recognized as operating environments in 2016 and 2019) to the conventional joint operations can create many "dilemmas" for a potential adversary so that the joint force will benefit from an operational advantage on the battlefield.

In conclusion, considering the arguments presented in this article, we believe that the "joint" notion and implicitly joint operations, provided that they are fully understood both in letter and in spirit, will continue to represent both a model of good practices and a landmark in the development of new concepts.

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