



INTERNATIONAL JOURNAL OF ECONOMIC AND ADMINISTRATIVE ACADEMIC RESEARCH

Available online, ISSN: 2757-959X | www.ijerdersi.com | Economic and Administrative Academic Research

MANEUVER SUPERIORITY WITH THE UNMANNED AERIAL SYSTEMS: UNMANNED AIR MANEUVER AS A PRAGMATIC METHOD

Özgür KÖRPE*

*Corresponding Author

ARTICLEINFO	ABSTRACT
<p>Research Article</p> <p>Received : 08/10/2022 Accepted : 18/03/2023</p> <hr/> <p>Keywords: International Security, Remote Effects, Unmanned Air Maneuver, Pragmatism, Strategic Culture.</p>	<p>Although the maneuver, center of gravity, and nonlinear warfare that left their mark on the twentieth century maintain their importance, the environment in which all these can be applied is getting more and more complex. On the other hand, as the lethality of the weapons increases, mass firing and movement, which are already costly, become more difficult, this situation complicates the classical maneuver approach based on hitting land targets. Both the lessons learned from the two world wars and the fact that the public has become less tolerant of war casualties in parallel with the increasing prosperity forces the commanders to think in more detail in their decisions and to choose the course of action that includes the minimum risk of casualties. On the other hand, the necessity of capturing the target in order to realize the purpose of the operation maintains its importance. This situation popularizes the idea of sacrificing unmanned systems instead of humans. Therefore, the complexity of today's wars and the fact that weapons become more deadly than before, also lead to a change in the character of the war. In this context, new ideas supported by high technology products are being developed in today's wars. Combatants are looking for ways to influence the battlefield from farther and safer areas. As the warrior moves away from the area of conflict, the emotional and logical interaction between him and his opponent is broken. The mechanized understanding of war also changes the character of the maneuver. This article presents a new maneuver superiority method that has emerged for land forces in today's complex operational environment and aims to explain the concept of unmanned air maneuver based on lessons learned from contemporary battles which Turkish Army involved.</p>

Uluslararası İktisadi ve İdari Akademik Araştırmalar Dergisi, 3(1), 2023, 22-38

İNSANSIZ HAVA SİSTEMLERİ İLE MANEVRA ÜSTÜNLÜĞÜ: PRAGMATİK BİR YÖNTEM OLARAK İNSANSIZ HAVA MANEVRASI

MAKALE BİLGİSİ	ÖZ
<p><i>Araştırma Makalesi</i></p> <p>Geliş : 08/10/2022 Kabul : 18/03/2023</p> <hr/> <p>Anahtar Kelimeler: Uluslararası Güvenlik, Uzaktan Etki, İnsansız Manevra, Pragmatizm, Stratejik Kültür</p>	<p>Yirminci yüzyıla damgasını vuran manevra, ağırlık merkezlerine etki ve hatlara bağımlı olmayan harekât önemlerini korumakla birlikte, tüm bunların uygulanabileceği ortam gittikçe karmaşıklaşmaktadır. Diğer taraftan silahların öldürücülüğü arttıkça kitle halinde ateş ve hareket zorlaşmakta, bu durum zaten maliyetli olan arazi hedeflerine el atmayı esas alan klasik manevra anlayışını zorlaştırmaktadır. Gerek iki dünya savaşından alınan dersler, gerekse artan refaha paralel olarak kamuoyunun savaş zayıfına karşı daha az hoşgörülü hale gelmesi, komutanları kararlarında çok daha detaylı düşünmeye ve asgari zayıf riski içeren hareket tarzlarını seçmeye zorlamaktadır. Diğer taraftan harekâtın maksadını gerçekleştirmek için hedefi ele geçirmenin gerekliliği de önemini korumaktadır. Bu durum insan yerine insansız sistemlerin feda edilmesi düşüncesini yaygınlaştırmaktadır. Dolayısıyla günümüz harplerinin karmaşıklaşması ve silahların eskisinden çok daha fazla ölümcül hale gelmesi, harbin karakterinde de değişikliğe yol açmaktadır. Bu bağlamda da günümüz harplerinde yüksek teknoloji ürünleriyle desteklenen yeni fikirler geliştirilmektedir. Muharipler muharebe sahasına daha uzaktan ve emniyetli bölgelerden etki etmenin yollarını aramaktadırlar. Savaşçı gitgide çatışma mekânından uzaklaşırken, hasmı ile arasındaki duygusal ve mantıksal etkileşim kopmaktadır. Mekanikleşen harp anlayışı manevranın da karakterini değiştirmektedir. Bu makale, günümüzün karmaşık harekât ortamında kara kuvvetleri bakımından belirmeye başlayan yeni bir manevra üstünlüğü yöntemini ortaya koymakta ve Türk Kara Kuvvetlerinin katıldığı güncel muharebelerden alınan derslere dayanarak geliştirilen "insansız hava manevrası" kavramını açıklamayı amaçlamaktadır.</p>

* ozgurkorpe@gmail.com <https://orcid.org/0000-0002-7633-7596>

1. INTRODUCTION

Although the verbal meaning is more comprehensive, asymmetry in warfare is often used to describe the victorious actions of the weak against the strong. Here “the weak” represents the non-state actor, while “the strong” describes the state or the dominant authority (Metz and Johnson, 2001, 5-6).

However, today’s increasingly complex and blurred character of war necessitates a new approach for the state side of this inequality. Because, as Mack points out, the importance of asymmetric warfare lies in the fact that it shatters the traditional recognition that military quantitative superiority in warfare is decisive (Mack, 1975, 177). Today’s wars, in the words of Hoffman, are carried out in contested areas (Hoffman, 2007, 15), so asymmetric factors affecting the war are increasing day by day. This increase gives war, with its new quality, a hybrid character.

Hoffman attributes the pragmatic nature of hybrid warfare to Lawrence and, referring to him, claims that the cognitive field will gain more importance than at any time in history in the future battlefield (Hoffman, 2007, 15). This environment -where conditions change very rapidly, friends, adversaries and neutrals become more uncertain and changeable and sophisticated methods are preferred more and more dictate practical decisions.

In this context, comparison of combat power in the future, as it is today, will be based on qualitative superiority, that is command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) superiority, information superiority, technological superiority, effect superiority and especially maneuver superiority instead of quantitative superiority. Traditionally, army maneuver forces conducted combined arms maneuver on land to seize, occupy, and defend terrain in order to achieve physical, temporal, and psychological advantages over the enemy. (Cardon, 2016, 17). On the other hand, the battlefield, which is the scene of conventional military forces in the effect-based conventional operations, includes today non-military forces.

The effect-based warfare is based on affecting the adversary’s centers of gravity. However, as the adversary became more obscure, it became difficult to detect its centers of gravity. Thus, there is no longer an adversary whose strength and center of gravity can be determined precisely. Moreover, the effect of technology on the battlefield has increased significantly, and decision processes and effects have accelerated faster than in any other period in history.

It is possible to apply these evaluations, framing the battles between conventional forces, to asymmetric conflicts in which unconventional forces are involved. In fact, since it is much more difficult to determine the centers of gravity in hybrid conflicts, it is necessary to bring a new perspective to classical effect-based operational approaches.

While force expedition constitutes the main effort at the strategic level, maneuver becomes particularly important in the operative level. Maneuver is made to take advantage of the mistakes made by the adversary and the tactical success in a rapid manner. The commander, who directs and manages the operations by taking the calculated risks, giving priority to the offensive operation with bold planning, distorts the plan of the opposing forces and prevents them from using the forces at the place and time they chose.

Therefore, only the decision makers who can see earlier, understand the situation faster, make decisions earlier, and act earlier than the adversary can be successful in the complex and fuzzy operational environment of hybrid warfare. Such an ability requires well-trained pragmatic commanders as well as effective use of technology more than ever before.

However, the uncertain environment hides inconspicuous events and relationships, clouds the effects of the conflict and, moreover, prevents an effective decision-making. Therefore, the decision maker approaches the healthiest decision to the extent that she/he abstracts her-/himself from the tensions created by the conflict. On the other hand, while the decision maker distances her-/himself from the conflict, this makes her-/him difficult to understand the real situation. But it is known that decisions become accurate as the decision makers are involved in the conflict.

This paradoxical situation between involvement in the conflict on the one hand and moving away from the tensions it creates on the other is not new for the decision makers. What is new is that the paradox facing the decision maker is now rapidly deepening. That is why technology has been used more extensively to facilitate decision making during the last quarter-century. Unmanned Aerial Systems (UASs) constitute an important part of increasingly robotic decision-making processes. Robotic decision making has brought with it remote effects on the battlefield (Chandler, 2020, 47). The state of being outside the fighting-place has never been as decisive as it is today. In fact, remote effects propagate a new fighting culture. Therefore, the time has come, and even passed, to add these remote effects to the classical combined effects of the third-generation warfare. We will elaborate more on this issue in the following sections.

In the operations for the last ten years, Türkiye has had the opportunity to experience this course. In this context, in addition to being an effective intelligence tool, the UAS has also become an effective method of maneuver superiority in counterterrorism operations in Iraq and Syria.

This article describes a new method of maneuver superiority in today's complex operational environment and, in this context, aims to explain the concept of "unmanned air maneuver" which stems from Türkiye's field experience. The unmanned air maneuver we put forward in this article is different from the army aviation techniques of manned unmanned teaming (MUM-T)¹. Unmanned maneuver hereby relates to the maneuver superiority at the operational level. In addition, the issues discussed in this article are related to land operations, the main characteristic of which is maneuver. The maneuver, which has a different content in the navy and air forces, is out of the scope of this study.

2. REMOTE EFFECT AS A PART OF ASYMMETRY

No single force can fulfill the requirements of modern military operation. For this reason, the mutual support between the Land Forces, Navy and Air Forces is needed against the adversary. The basis of the power created by the mixed force is the mixed effect. This effect can only be achieved through the right combination of activities and systems. The mixed effect should be used to provide complementary, supportive, and asymmetrical effects.

Activities and systems complement each other in a way that puts the adversary in a stalemate. While escaping the effects of one activity or system, the adversary under complementary effects is exposed to the other. The commanders put the adversary in an inextricable situation by combining the different possibilities and capabilities of different

¹ According to US FM 3-04, *Manned unmanned teaming (MUM-T)* is the integrated maneuver of Army Aviation RW and unmanned aircraft systems (UAS) to conduct movement to contact, attack, reconnaissance, and security tasks. MUM-T enables increased depth and breadth of aviation reconnaissance and maneuver, increased persistence over the reconnaissance objective, increased ability to gain and maintain adversary contact, increased survivability, and more options to develop the situation with enhanced maneuver, fires, and command and control (C2) (FM 3-04, 2020, 1-3).

forces and gathering them to a point. This paralyzes the adversary, destroys her/him and/or forces her/him to surrender. Various branches, forces, and activities create the most effective combat power when they are complementary to each other.

In the context of the supportive effects, the forces support each other by bringing together activities and systems to increase a similar effect. Mortars, artillery, and rockets often support each other in the same way that a rifle and machine gun support each other.

Confronted with a constantly changing situation, leaders develop new combinations of systems and pose new dilemmas for the adversary. Properly combined, these effects produce asymmetries that the joint force uses to achieve theater objectives.

Asymmetry which based on “dissimilarity” and “superiority” is the deadliest form of combined effects (FM 3-0, 2001, 4-31, 4-32). As it will be remembered, dissimilarity dimension forces the adversary to fight with the systems or capabilities that they do not have. This is the opposite of fighting fire by fire; this is to fight fire by water. On the other hand, superiority can be achieved by generating and applying force, like the strength of the adversary, but in a way that is superior to it and in a way that it cannot apply the same. The move to dominate is to hit the right target with the right combination at the right time, not simply to hit it multiple times.

In the last century, many tools have been developed to realize the dissimilarity and superiority qualities of asymmetry. But it should be emphasized that their common feature is to affect the adversary with the lowest possible damage and casualties. In his book *On Killing: The Psychological Cost of Learning to Kill in War and Society*, Grossman provides a detailed history of humanity’s quest to kill unaffected by the adversary. The figure in which he reveals the relationship between killing and physical distance is interesting (Figure 1).

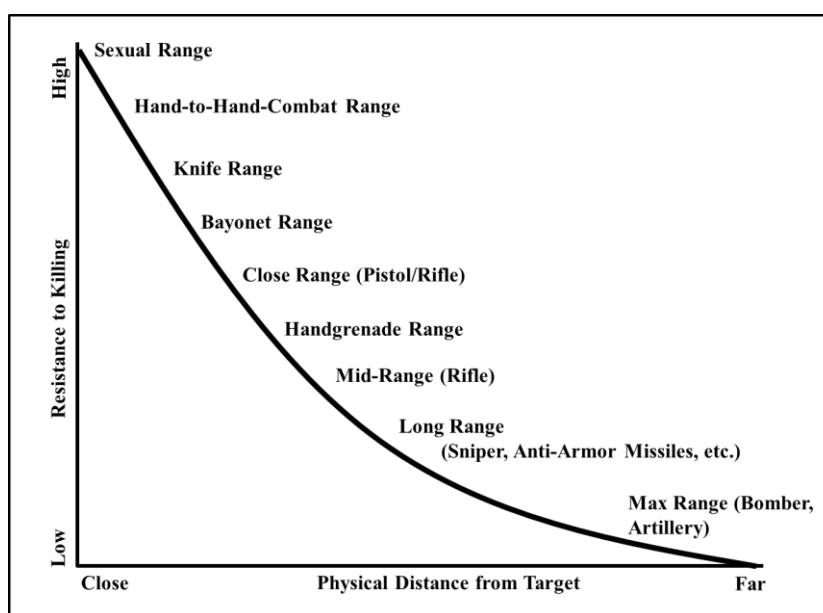


Figure 1. Grossman’s graphic on killing and physical distance

Grossman, Dave, *On Killing: The Psychological Cost of Learning to Kill in War and Society*, New York: Back Bay Books, 1995, 98.

But especially Chamayou’s (2013, 114-124) emphasis on unmanned systems on killing from a distance is much more dramatic. The most important point emphasized by Chamayou is that the war practice revealed by the drone shatters all understandings of war

within the framework of concepts such as non-combatant warrior, invincible army, zero-loss war, risk-free war (Kardeş, 2018, 101). Therefore McMahan states that “our own societies are, however, perpetually in danger of fighting unjust wars” (McMahan, 2009, 3).

According to Kardeş (2018, 101) replacing the war of humans with the war of machines as one of the utopias of the industrial age. Chamayou states that this substitution has actually taken place and that what is now at issue is “adversary who is treated as a dangerous material” in the face of remotely controlled machine which becomes a weapon of war (Chamayou, 2013, 24).

In the words of Kardeş, the battlefield and the adversary are being decontaminated by turning it into a unilateral “safe area”. Chamayou reads this as the radicalization of asymmetric warfare. In the eyes of the UAS pilot, war becomes a computer game. Therefore, war loses its Clausewitzian duel-quality and turns into a game of hide and seek, or more effectively a hunting activity, where the UAS seeks and destroys, while the adversary escapes as a hider (Chamayou, 2013, 34). Kardeş sees the transformation of military operation into a manhunt as a formality beyond the Clausewitzian chameleon metaphor (Kardeş, 2018, 102). We think that the method of killing gains a meaning beyond the wonderful trinity, and we agree with Kardeş in this regard. Because now the use of primordial violence has taken on a different content than archer or artillery. Chance and probability fueled the need for more detailed calculations, and subordination has gone beyond the battlefield. Thus, the effect made from outside the battlefield has become permanent.

3. ASYMMETRY IS ESSENTIALLY PRAGMATIC

As known, the aim of military operations is to dominate the battlefield. It is important to control the scope and tempo of the operation. Regardless of the type, or scope of the operation carried out and the conditions of the tactical situation, the unchangeable purpose is to take the initiative, to maintain the tempo of the operation and to benefit from the success. Dominance in the battlefield can only be achieved in this way.

On the other hand, establishing dominance in the battlefield is only possible by achieving superiority. The main factor that provides superiority is the breaking of the adversary’s will to fight. For this, it is essential to carry out the operation with a tempo and intensity that the adversary cannot cope with, thus combining mobility, superiority of information and protection of force. This kind of superiority drags the adversary into an irreparable collapse.

Although physical destruction seems to be the most effective way to bring about this collapse, the complete physical destruction of the adversary cannot always be possible. In fact, success through physical destruction is the last method to be used because it is difficult and costly to achieve in terms of casualties, materials, and time.

Making a low-cost impact requires pragmatic thinking, because pragmatism is based on obtaining the maximum benefit at minimum cost. According to pragmatic thinking, the war should be completed as soon as possible, with the deadliest blows on the adversary. For this, combined force structures and combined effects should be created. The commanders of mixed forces put the adversary in an inextricable situation by combining the different capabilities of different forces in a complementary and supportive way. While the adversary escapes from the effects of one activity or system, it is exposed to another. This situation paralyzes the adversary, destroys it and forces it to surrender. What gives asymmetry a pragmatic character is not just that it paves the way for low-cost successes with combined effects on the adversary (Metz and Johnson, 2001, 15). Additionally, the low-cost success

leads to the commander's maximal operational benefit from her/his decision, which adds another pragmatic quality to the asymmetry.

Moreover, the dissimilarity dimension of the asymmetry that became evident in both conventional and counter-terrorism operations in the Middle East which surrounds Türkiye also shapes the establishment of maneuver superiority. It is necessary to add a new method called "unmanned air maneuver" to the known maneuver superiority methods. Well, what is this unmanned air maneuver, then?

4. A SHORT DEFINITION: WHY TO TREAT UNMANNED AIR MANEUVER SEPARATELY?

Many military publications emphasized that superior maneuver involves shifting troops and/or elements to appropriate areas, considering the subsequent operation, accumulating in a way that will provide superiority over the adversary, carrying out the operation and arranging it again for the next operation (FM 100-5, 1986, 12; FM 100-5, 1993, 2-5; FM 3-90-1 C2, 2015). It is aimed to integrate fire and maneuver to provide maneuverability and to destroy the adversary in this context. To have the maneuver superiority, weapon systems, the mobility and operational readiness of the units should be superior to the adversary. As will be remembered, the methods of maneuver superiority of classical effect-oriented operations are strategic attack, support by fire (in fire and maneuver), and maneuver by fire ((FM 3-90-1 C2, 2015, B-3 (Strategic attack), B-10 (Support by fire)). In Turkish joint doctrine, there is an additional task called as "maneuver by fire." This task is implemented by army aviation, tank units, and naval platforms without occupying geographic objectives.

Today UASs are used for reconnaissance and surveillance purposes as well as maneuvering elements (esp. armed UAS/A-UAS) employed for individual attacks, swarm attacks and suicide attacks (Sharre, 2018, 112). Of course, an UAS included in the MUM-T, can be used as an element of the integrated maneuver of army aviation rotary wing and unmanned aircraft system to conduct movement to contact, attack, reconnaissance, and security tasks (Chandler, 2020, 60). In this context, A-UAS can be used as a maneuver-by-fire element of the MUM-T, as well as directing the maneuver of attack helicopters with fire as a fire-support element. In addition, the UASs and attack helicopters can be forward observers of strategic attack. As an army aviation task force, MUM-T is not the subject of this article.

On the other hand, the reader can wonder why the author limit such usage of UAS solely to army aviation. Of course, the navy and air forces can also benefit from UAS for similar reasons. However, the use of the UAS as a maneuver by fire element as part of the MUM-T outside of the ground forces is both quite limited and, as stated in the introduction, is not the subject of this article. This type of usage is integrated with a surface maneuver (FM 3-04, 2020, 2-4). Because naval platforms are much larger than land platforms and have their own maneuver by fire equipment, they give UASs more restricted maneuver tasks. Air forces, on the other hand, use the UAS as a strategic attack element, not as a maneuver by fire element.

As a main principle of tactical operations, fire is the most important tool that affects the adversary in combat. The adversary is destroyed or suppressed by fire. The firepower available in battle should be used in the most effective way in place and on time. The fire is executed by establishing a fire base during the operation, as needed. It is used in coordination with movement and maneuver in attack.

At the same time, movement and maneuver are actions performed to increase the

effect of fire, to gain the superiority of the situation over the adversary, and to approach the adversary and destroy or capture her-/him in the place where she/he is located. Movement means displacement as a term; maneuver refers to directing the movement to points that will gain superiority over the adversary. Maneuver is a purposeful and conscious application of movement. Movement becomes meaningful with maneuver. Maneuver is done by adapting the movement to the terrain (Cardon, 2016, 16).

4.1. Unmanned air maneuver is Different from Fire and Maneuver

As a technique applied at tactical level, fire and maneuver is the directing of the firepower on the target by putting the adversary in an unfavorable situation by maneuvering to destroy it or to control a region. Therefore, the forces that will apply fire and maneuver primarily divide the task as maneuver and fire support elements. These are either the elements of the same unit that work alternately or they are the elements of the same mixed force even if they do not change their duties (Figure 2).

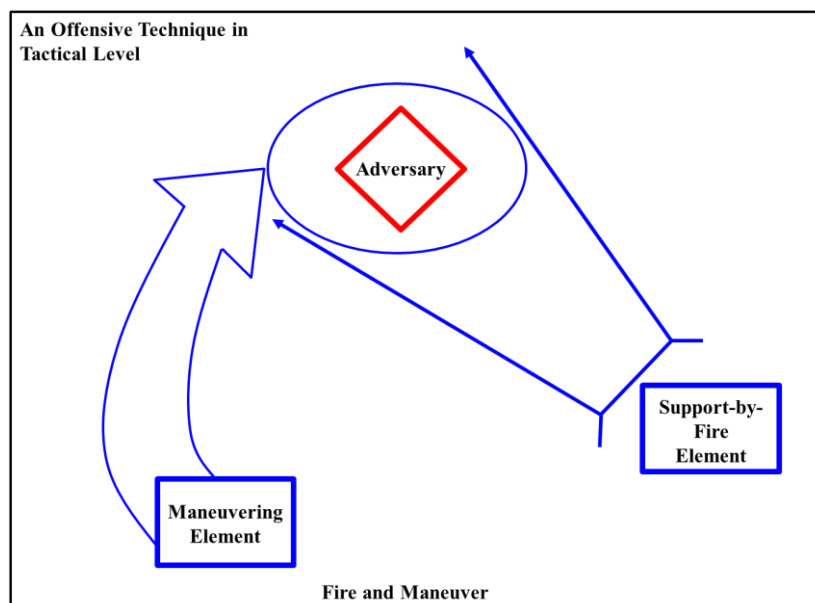


Figure 2. Fire and Maneuver
Figure by Author

Unmanned air maneuver has traces of fire and maneuver, but it is different from it. Although the UAS, which is the most important element of unmanned air maneuver, can act as a fire base in fire-and-maneuver, it cannot be in the same form as the maneuvering element and cannot undertake the maneuvering task when it comes to its turn. In this context, unmanned air maneuver cannot be fully integrated into the concept of fire-and-maneuver since the UAS can only serve as a supporting element.

4.2. Unmanned air maneuver is Different from Maneuver by fire

As a part of the Air-Land battle, the concept of "maneuver by air" is mentioned in the 1986-version of U.S. Field Manual, Operations. According to the field manual, the attack helicopters are the main elements of the maneuver by air (FM 100-5, 1986, 42). As a NATO member, Turkish doctrine has also adopted this approach. However, Turkish doctrine counts also tanks in the attack technique of maneuver by air which aims fixation and destruction

instead of occupying a geographical objective. Turkish doctrine deals with maneuver by air within the concept of maneuver by fire. Additionally, while maneuver by fire made by the rotary wing is used in battle and full-spectrum operations, the maneuver by fire made by the tanks is within the scope of conventional warfare.

Of course, maneuver by fire is done with the aim of destroying the adversary. However, unlike fire and maneuver, it does not aim to take control of a geographical area and is applied at both tactical and operative levels (FM 3-90-1 C2, 2015, 1-10). In this context, maneuver by fire is to affect targets with high accuracy by using systems combined with maneuvering in which fire and maneuverability are integrated. The maneuver-by-fire-element directs the fire on the target by maneuvering to the distance where it will be effective on the target. These elements, who direct their fire on the target with maneuver, do not have the ability to capture and control the land. However, they can detect the effects they create on the target.

Maneuver affects the adversary more psychologically than fire. The use of fire and maneuver in an integrated way, with speed, further increases the psychological effect on the adversary. Maneuver by fire makes it easier to break the adversary's perseverance and will to fight more quickly. The maneuvers of attack-helicopters and tanks are possible examples of maneuver-by-fire (Figure 3, Figure 4) in the land warfare.

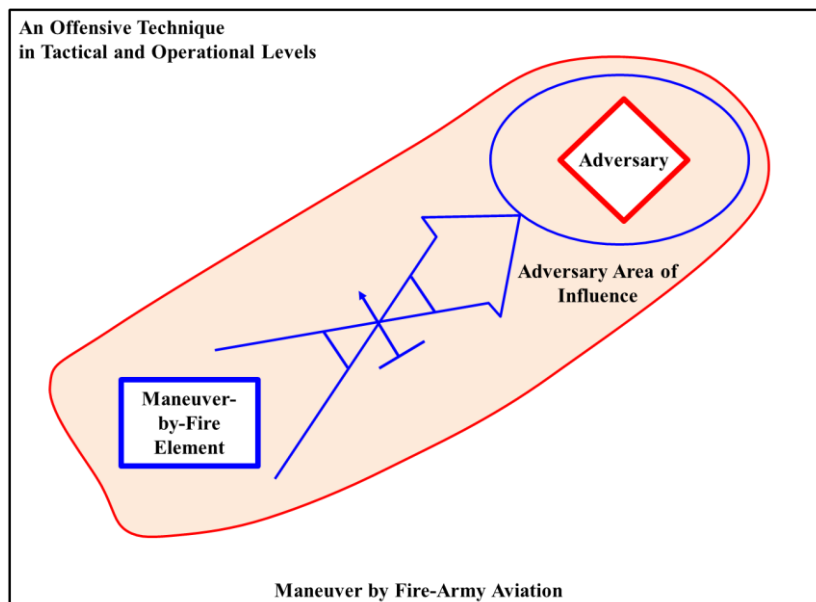


Figure 3. Maneuver by fire (Army Aviation)
Figure by Author

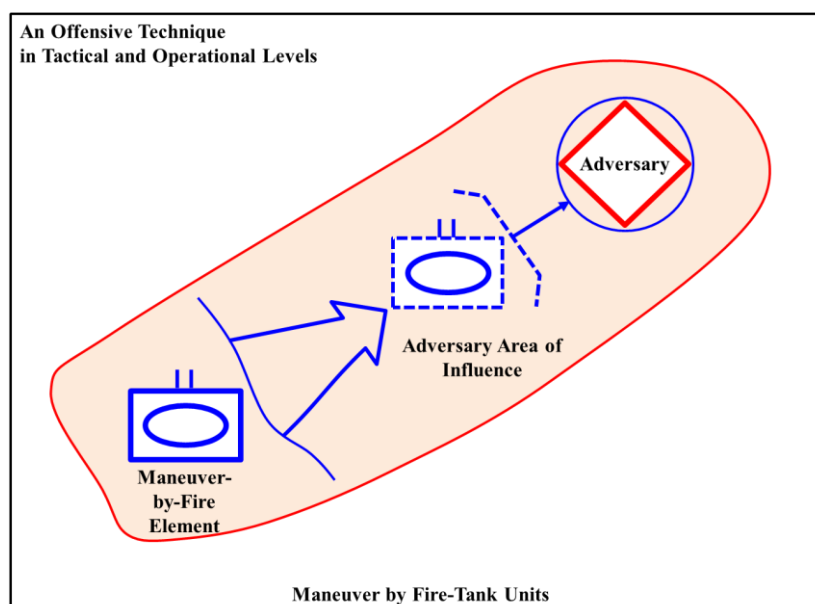


Figure 4. Maneuver by fire (Tank Units)
Figure by Author

According to the U.S. military doctrine, considering the possibilities provided by technological developments and developments in weapon systems, the troops should have the capability and ability to maneuver by fire against targets at long depths (JP 3-0 C1, 2018, VIII-3; JP 3-09, 2019, III-4).

At first glance, attack by fire may seem like a method that resembles a lot to unmanned air maneuver and so inclusive that it does not require a new definition. But unmanned air maneuver is different from attack by fire. For example, although it seems possible to compare the movement of an armed UAS to an attack helicopter, one should not rush to include the unmanned air maneuver in the attack by fire. Unlike the tank unit commander or pilot who chooses the target and directs the maneuver to the target, the UAS pilot has no adversary present in her/his location. In other words, the decision-making processes of the UAS pilot are dependent on psychological variables that are quite different from the army aviation pilot.

In attack by fire, both the system and the individual who manages the system are within the influence area of the adversary, whereas in the unmanned air maneuver, the system is within the adversary's area of influence, but the human who manages that system is outside the adversary's area of influence.

Although not causally related to maneuvering superiority, there are also differences between UAS and army aviation or planes in terms of reconnaissance and surveillance tasks. This situation requires positioning the UAS in a separate category as a means of information superiority. This is because the activities of an army aviation team, i.e. one undertaking reconnaissance and surveillance tasks, are limited to the biological and technical capacities of the pilots. It would also depend on the sensitivity to air defenses and the movement capacity of those helicopters and planes.

Unmanned air maneuver is based on being able to affect the adversary for a long time without being in the same place. Although long-range precision-engaged fire systems like

missiles can be considered as the first unmanned systems to have emerged towards the end of the last century, the unmanned air maneuver suggested in this article is slightly different from precision engagement.

UAS has a greater movement capacity than helicopters. Due to its surveillance technology, it can observe without being affected by the adversary's low/medium altitude air defense systems. The UAS can stay in the target area longer than a helicopter or a plane. Unlike the pilot of the manned vehicle, many people in the system control rooms and operation centers of all levels can simultaneously see and evaluate the area monitored by the UAS.

4.3. Unmanned air Maneuver is Different from Strategic Attack

Strategic attack is essentially a part of the joint fires processes and tasks. As an offensive tactic, strategic attack is carried out by land elements-such as missiles and long-range artillery, MLRS, naval and aerial elements in all kinds of operational and strategic level operations (JP 3-09, 2019, I-2).

The purpose of strategic attack is to destroy, wear and punish the adversary. The fire is directed at targets within range of the system/platform without maneuvering. Cross-border movements of land forces are out of question in strategic attack (Figure 5).

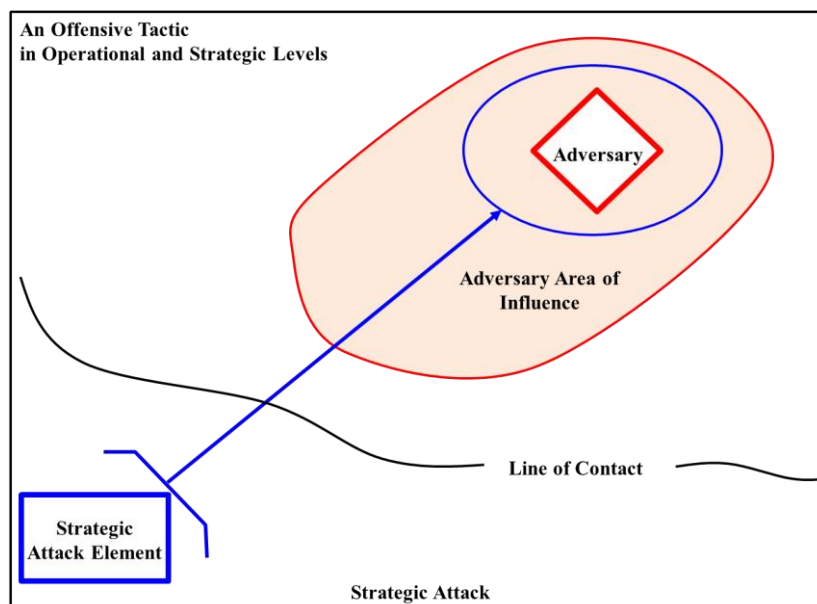


Figure 5. Strategic attack
Figure by Author

In terms of army aviation of land elements and sea and air elements, the obvious difference between maneuver-by-fire and strategic attack is that these elements are used in the area of influence of the adversary, where they engage in maneuver-by-fire, and outside the area of influence in strategic attack (JP 3-09, 2019, xii; FM 3-90-1 C2, 2015, B-3). According to the doctrine, "the long endurance of UA necessary to support their ISR missions enables them to provide extended support to TST, HVT, and HPT missions. UA can also support or

conduct CAS, SCAR, AI, and other joint fires missions (FM 3-90-1 C2, 2015, III-8).”²

On the other hand, it is difficult to include unmanned air maneuver within the scope of strategic attack. There are several reasons for this. As stated before, the precision fire is expected to be intense and highly effective, as the strategic attack is done to destroy, wear, and punish the adversary. Therefore, the precision engagement systems are the strategic attack elements that affect the operation not continuously but instantaneously, based on punishment of the adversary, whose targets should be limited to military units due to their wide range of influence, and therefore, which are more within the scope of conventional warfare. However, armed UASs do not have as much potency as artillery, MLRS and missile systems due to their payload limitations (Barnhart, Marshall, and Shappee, 2021, 64-65). Today, terrorists use civilians as human-shields, or civilian settlement as shelters, limiting the strategic attack. Therefore, strategic attack leaves its place partly to the precision engagement and mostly to unmanned air maneuver based on the confirmation of the target and continuous surveillance until the actual strike occurs, especially in the hybrid warfare.

In addition, strategic attack systems do not cross the border. In other words, just like in the unmanned air maneuver, the decision makers are away from the adversary’s influence in strategic attack. However, to be able to have an effect over it, the UAS must approach its target, depending on the detection range of its camera and the range of its weapons. This is an advantage of unmanned air maneuver compared to strategic attack.

Although dynamic targeting is one of the main principles for both strategic attack and unmanned air maneuver, a relative advantage of UAS stands out in this regard. Consequently, the fact that the strategic attack is carried out across the border and restricted to punishment limits it in time. This type of punishment is both costly and limited by the projectile’s duration of flight. Therefore, the strategic attack can be carried out for a certain period. A similar situation can be observed in the close air support of the air force. In addition to other functions of air operation, the duration of a supersonic aircraft in the target area, which takes a close air support task, is determined by the combat mission it receives. However, a UAS can stay in the battlefield for 5-7 hours (Turkish systems), depending on its payload³.

Finally, in strategic attack, a friendly ground unit maneuvering with fires is often absent, while the unmanned air maneuver is often performed in the adversary’s area of influence, and on the surface, there is often a friendly unit arranging the fires (Figure 6). The unmanned air maneuver element may consist of a single UAV, or a drone swarms may undertake this task (Sharre, 2018, 18).

² The abbreviations in the citation refer to phrases below:

- AI : Air interdiction.
- CAS : Close air support.
- HPT : High-payoff target.
- HVT : High-value target.
- ISR : Intelligence, surveillance, and reconnaissance.
- SCAR : Strike coordination and reconnaissance.
- TST : Time-sensitive target.
- UA : Unmanned aircraft.

³ For detailed information see; *Introduction to Unmanned Aircraft Systems*. Third Edition. Abingdon, Oxon, UK: CRC Press.

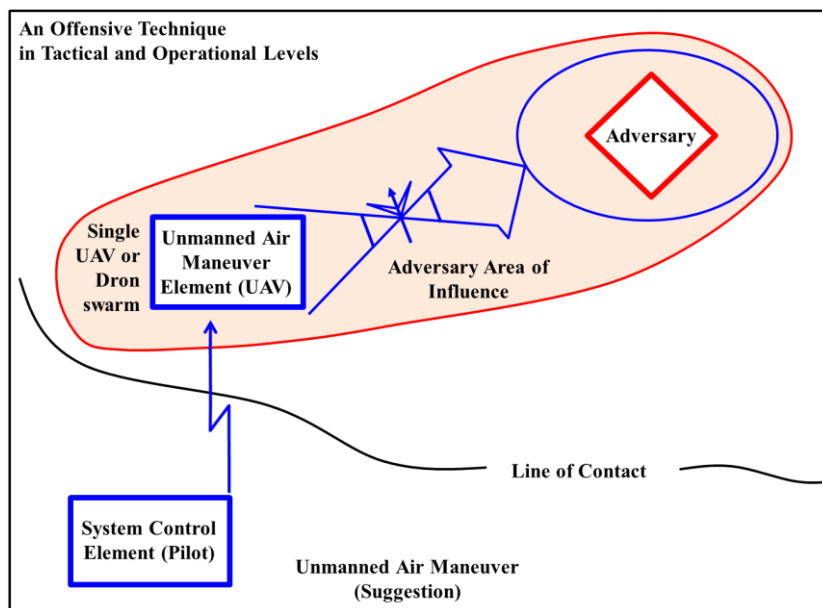


Figure 6. Unmanned air maneuver (Suggestion)

Figure by Author

Another feature that distinguishes unmanned air maneuver from the above three methods is in terms of purpose and objectives. Unmanned air maneuver can be performed for the purposes of destruction, attrition, and punishment. However, since UAS technologies have not yet reached the satisfactory level to meet operational and tactical needs, these purposes should be limited for now. Indeed, the objectives do not have the variety in other methods.

The distinctive nature of the UAS makes it asymmetrically deadly to the adversary. On the other hand, it is not necessary for the UAS to carry weapons itself. Because the UAS can continuously monitor the battlefield, and it can also create deadly effects by ensuring that the maneuvering forces are direct to their targets safely to create the desired effects on targets with high accuracy.

For now, UASs are mostly effective against exposed individual units, terrorists, and semi-hardened targets (Martin and Steuter, 2017, 95). It is expected that this will continue for a while. Therefore, it is more appropriate to describe the battlefield activities of unmanned systems under a separate title.

5. UNMANNED AIR MANEUVER CAUSES A NEW WAY OF WAR

Today unmanned air maneuver, due to the width of the complexity of the operational environment has become a pragmatic method. Because, as mentioned before, pragmatism based on maximum benefit at minimum cost and seeks opportunities for the operational success. The UAS is the most effective method in dealing with threats and opportunities that appear in the wide area of operation by avoiding adversary air defense systems.

UASs contribute to Turkish Armed Forces' maneuver superiority in two ways. First, UASs support manned activities and second, they act as the main elements of maneuver. Support for manned activities is provided by determining and identifying of targets, observing them until the moment of strike, firing the identified targets with high precision and evaluating the effects after the strike. In these methods, UASs either act as a support element of fire and maneuver or act as a direct maneuver-by-fire element.

Maneuver by fire is performed by sending individual systems to individual targets or by attacking the specified targets as a swarm (Sharre, 2018, 45). The new style swarm attack is the participation of other fires in a way that increases the effects of this attack. In addition to forcing the adversary to engage with more than one target, attack leaves no choice but to avoid or counter, which leads the adversary to error and ultimately discourages it.

On the other hand, the low-profile flight capability of UASs create an asymmetrical effect against adversary air defense. In addition to unarmed and armed using options, the ability to mount different types of weapons on the UAS provides flexibility in tactical use. Therefore, when UAS is used in combined task forces, it can get much more effective results.

Unmanned air maneuver is a cost-effective asymmetric method in many ways. First, producing UAS as a maneuvering element is much more economical than fighter jet, attack helicopter and tank. The training cost of the UAS pilot is also lower compared to the airplane and helicopter pilot. UAS's maintenance costs are also lower than manned aircraft. Ultimately, the UAS is more advantageous than attack helicopters and tanks in terms of decision-making processes, and motivation, as it does not directly risk the user's life.

As can be seen, one of the common features of Turkiye's counter-terrorism operations, especially in Syria and Iraq, is the development of the unmanned air maneuver in which the UASs actively take part. So, it would be appropriate to add unmanned air maneuver as a pragmatic effect when describing effects in any operational design.

On the other hand, it is clear that the UASs and in this context the unmanned air maneuver will begin to create a new strategic culture or way of war, and it has even begun. There is a new culture of conflict both for the UAS pilot who kills her/his opponent without existing in the combat zone, and for the soldier who has to be protected from a hunter she/he has never seen. The main tendencies of this culture will be different from the usual offensive/defensive dialectic. In this new strategic culture, the ethics of war stands for being the most questioned and most wanted quality. Psychopathology, which Chamayou draws attention to (2013, 106), is one of the important dilemmas of this new culture.

In this new way of war, the classic huma maneuver will be replaced by the UAS maneuver, which creates remote effects. The function of the surface maneuver-units will shift towards less risky missions rather than attacking the target under adversary fire. Maneuver missions in this context will involve more of clearing or damage control of targets that have been softened by the accurate fires of the UAS and detained by the UAS. Low altitude passive and active air defense measures, which have been gradually abandoned since the second half of the twentieth century, will begin to gain importance again due to the spread of fighter jets and guided missiles. However, this time, it is clear that air defense measures will be more costly, as the detection capability of airborne surveillance systems and the lethality of air-to-ground weapons increase.

The new generation air threat has the potential to change the character of the maneuver, too. Surface troops will have to avoid mass-maneuver because of the UAS threat. Once the UAS threat is reduced in bad weather conditions, mass-maneuver will again become difficult, possibly as visibility on the surface will also decrease. These conditions will force the maneuver elements to disperse. Thus, the maneuvering units will move in small groups and look for ways to converge on the target, which will increase the need for proactive and well-trained leaders and single combat training.

6. CONCLUSION

UASs are likely to be used extensively in hazardous and/or risky environments, in monotonous, prolonged and demanding tasks where human focus may be lost. On the other hand, unmanned systems with longer range, which can affect protected targets, with high destructive power, with high target detection/diagnosis capabilities and high accuracy of hit, are also becoming widespread. In this context, UASs will be able to create a force multiplier effect with their effective use in missions in a very complex and variable battlefield.

Due to the fact that a large number of portable units are on the move, supported by advanced control systems in the combat environment, the need for UASs that can dynamically detect and monitor troop movements in close to real time will increase. This entire framework enhances the potential for UASs to be used just like manned systems.

In this article, the remote-commanded maneuver of the UAS has been positioned in a different place than other maneuver superiority methods. Although there is a person in the ground control station, the UAS's maneuver has been named as "unmanned air maneuver". Unmanned air maneuver differs from other maneuver methods due to its sui-generis nature of decision-making processes. It is therefore described separately.

Of course, there is still no better alternative than the human that can direct war and contribute to cognitive processes. Therefore, the key role of human in UAS-human interaction seems to continue. On the other hand, human will continue to benefit from unmanned systems in a way that will reduce the risk to life safety or compensate for human errors. This orientation pushes human to seek pragmatic methods. Thus, UAS shows itself as a pragmatic method that provides cost-effective and operational benefits.

One of the connotations that Türkiye's counter-terrorism strategy has created in operational art is that it has provided the opportunity to intervene in the conflict area from outside, more effectively than classical methods of maneuver. This is where the "unmanned air maneuver" emerges. Moreover, Türkiye has been struggling with the asymmetric threats produced by the instability in the Middle East since the 1990s. It is one of the few states that engage and effectively use unmanned air maneuvers, both with the advantages provided by technological developments, the principle of compliance with the law, and because it is cost-effective. Perhaps, the UAS necessitates a redefinition of virtually all that is known about war. Unmanned air maneuver is developing by adding a new dimension to Türkiye's efforts on this issue.

REFERENCES

- Barnhart, R.K., Marshall, D.M., and Shappee, E.J. (2021). *Introduction to Unmanned Aircraft Systems*. Third Edition. Abingdon, Oxon, UK: CRC Press.
- Cardon, E.C. (Spring 2016). The Future of Army Maneuver–Dominance in the Land and Cyber Domains. *The Cyber Defense Review*. Vol. 1, No. 1. 15-20.
- Chamayou, G. (2013). *A Theory of The Drone*. Trans. Janet Lloyd. London: The New Press.
- Chandler, K. (2020). *Unmanning: How Humans, Machines And Media Perform Drone Warfare*. New Brunswick: Rutgers University Press
- Encyclopædia Britannica* (1962). Vol. 7.
- Field Manual No. 100-5. (5 May 1986). *Operations*. Washington, DC: Headquarters, Department of the Army.
- Field Manual No. 100-5. (June 1993). *Operations*. Washington, DC: Headquarters, Department of the Army.

- Field Manual No. 3-0. (14 June 2001). *Operations*. Washington, DC: Headquarters, Department of the Army.
- Field Manual No. 3-04. (06 April 2020). *Army Aviation*. Washington, DC: Headquarters, Department of the Army.
- Field Manual No. 3-90-1 C2 (13 April 2015). *Offense and Defense Volume 1*. Washington, DC: Headquarters, Department of the Army.
- Grossman, D. (1995). *On Killing: The Psychological Cost of Learning to Kill in War and Society*. New York: Back Bay Books.
- Hoffman, F.G. (2007). *Conflict in the 21st Century: The Rise of Hybrid Wars*. Virginia: Potomac Institute for Policy Studies.
- Joint Publication No. 3-0 C1 (22 October 2018). *Joint Operations*. Washington, DC: Joint Chief of Staff.
- Joint Publication No. 3-09 (10 April 2019). *Joint Fire Support*. Washington, DC: Joint Chief of Staff.
- Kardeş, M.E. (Ekim 2018). Dijital Çağda Savaş: Dron Örneği [The War in the Digital Era: The Example of the Drone]. *Etkileşim: Üsküdar Üniversitesi İletişim Fakültesi Akademik Dergisi*. 1 (2). 96-107.
- Mack, A. (January 1975). Why Big Nations Lose Small Wars: The Politics of Asymmetric Conflict. *World Politics*. 175-200.
- Martin, G. and Steuter, E. (2017). *Drone Nation: The Political Economy of America's New Way of War*. New York: Lexington Books.
- McMahan, J. (2009). *Killing in War*. New York: Oxford University Press.
- Metz, S. and Johnson II, D.V. (2001). *Asymmetry and U.S. Military Strategy: Definition, Background, and Strategic Concepts*. Carlisle, PA: Strategic Studies Institute.
- Reynolds, G.S. (2012). *The Emergence of Islam: Classical traditions in contemporary perspective*. Minneapolis: Fortress Press.
- Sharre, P. (2018). *Army of None: Autonomous Weapons and the Future of War*. New York: W.W. Norton & Company.

GENİŞ ÖZET

İnsansız Hava Araçları ile Manevra Üstünlüğü: Pragmatik Bir Yöntem Olarak İnsansız Manevra

Giriş

Etki odaklı harekât, rakibin ağırlık merkezlerini etkilemeye dayanır. Ancak, düşman daha belirsiz hale geldikçe, ağırlık merkezlerini tespit etmek zorlaşmaktadır. Böylece artık gücü ve ağırlık merkezi kesin olarak belirlenebilen bir rakip yoktur. Ayrıca teknolojinin savaş alanına etkisi önemli ölçüde artmış, karar süreçleri ve etkileri tarihin hiçbir döneminde olmadığı kadar hızlanmıştır.

Konvansiyonel güçler arasındaki savaşları çerçeveleyen bu değerlendirmeleri, konvansiyonel olmayan güçlerin dahil olduğu asimetrik çatışmalara uyarlamak mümkündür. Aslında hibrit çatışmalarda ağırlık merkezlerini belirlemek çok daha zor olduğu için klasik

etki odaklı harekât yaklaşımlarına yeni bir bakış açısı getirmek gerekmektedir.

Asimetrinin Bir Parçası Olarak Uzaktan Etkiler

Modern savaşta kuvvet sevki stratejik düzeyde ana çabayı oluştururken, manevra özellikle operatif düzeyde önemli hale gelir. Rakibin yaptığı hatalardan ve taktik başarıdan hızlı bir şekilde yararlanmak için manevra yapılır. Cesur bir planlama ile taarruz harekâtına öncelik vererek, hesaplanmış riskleri alarak harekâtı yönlendiren ve yöneten komutan, muhalif kuvvetlerin planını bozarak, istedikleri yer ve zamanda kuvvetleri kullanmalarını engeller.

Bu nedenle, hibrit savaşın karmaşık ve bulanık operasyonel ortamında yalnızca daha erken görebilen, durumu daha hızlı anlayabilen, daha erken karar verebilen ve düşmandan daha erken hareket edebilen karar vericiler başarılı olabilir. Böyle bir yetenek, iyi eğitilmiş pragmatik komutanların yanı sıra teknolojinin etkin kullanımını her zamankinden daha fazla gerektirir.

Bu makalede İHA'nın uzaktan kumandalı manevrası, diğer manevra üstünlüğü yöntemlerinden farklı bir yere konumlandırılmıştır. Yer kontrol istasyonunda bir kişi olmasına rağmen İHA'nın yaptığı manevraya bilinçli olarak "insansız hava manevrası" adı verildi. İnsansız manevra, karar verme süreçlerinin kendine özgü doğası nedeniyle diğer manevra yöntemlerinden farklıdır. Bu nedenle ayrı olarak açıklanmıştır.

Asimetri Aslında Pragmatiktir

Düşmanın çöküşünü sağlamanın en etkili yolu fiziksel yıkım gibi görünse de, rakibin tamamen fiziksel olarak yok edilmesi her zaman mümkün olmayabilir. Aslında fiziksel imha yoluyla başarı, zayıflık, malzeme, zaman, iç ve dış destek açısından elde edilmesi zor ve maliyetli olduğu için kullanılan son yöntemdir.

Düşük maliyetli bir etki yaratmak, pragmatik düşünmeyi gerektirir, çünkü pragmatizm, minimum maliyetle maksimum faydayı elde etmeye dayanır. Pragmatik düşünceye göre, savaş, düşmana en ölümcül darbelerle mümkün olan en kısa sürede tamamlanmalıdır. Bunun için birleşik kuvvet yapıları ve birleşik etkiler oluşturulmalıdır. Karma kuvvetlerin komutanları, farklı kuvvetlerin farklı yeteneklerini tamamlayıcı ve destekleyici bir şekilde birleştirerek düşmanı içinden çıkılmaz bir duruma sokar. Düşman bir faaliyetin veya sistemin etkilerinden kaçarken, bir başkasına maruz kalır. Bu durum düşmanı felç eder, yok eder ve teslim olmaya zorlar. Asimetriye pragmatik bir karakter kazandıran şey, sadece düşman üzerinde birleşik etkileri olan düşük maliyetli başarıların önünü açması değildir. İlave olarak, düşük maliyetli başarı, komutanın kararından maksimum operasyonel fayda sağlamasına yol açar, bu da asimetriye başka bir pragmatik nitelik ilave eder.

Bir Tanımlama: İnsansız Manevra Neden Ayrı Tanımlanmalıdır?

İnsansız manevrada ateş ve manevra izleri vardır ama ondan daha farklıdır. İnsansız manevranın en önemli unsuru olan İHA, ateş ve manevrada ateş üssü görevi görse de manevra unsuru ile aynı formda olamaz ve sırası geldiğinde manevra görevini üstlenemez. . Bu bağlamda insansız hava manevrası, ateş-manevra kavramına tam olarak entegre edilemez, çünkü İHAS sadece bir destek unsuru olarak görev yapabilir.

İnsansız manevra ateşle manevradan da farklıdır. İHA ile kara havacılığı arasında manevra üstünlüğü ile nedensel bir ilişki olmasa da keşif ve gözetleme görevleri açısından da farklılıklar bulunmaktadır. Bu durum, bilgi üstünlüğü aracı olarak İHA'nın ayrı bir yerde konumlandırılmasını gerektirmektedir. Bunun nedeni, keşif ve gözetleme görevlerini üstlenen kara havacılık faaliyetlerinin, pilotların biyolojik ve teknik yetenekleriyle sınırlı olduğu kadar,

o helikopterlerin veya uçakların hava savunma hassasiyetine ve hareket kapasitesine bağlı olmasıdır. İnsansız manevra, aynı yerde bulunmadan düşmanı uzun süre etkileyebilme esasına dayanır.

Füzeler gibi uzun menzilli hassas nişanlı atış sistemleri, geçen yüzyılın sonundaki ilk insansız sistemler olarak kabul edilebilse de, bu makalede önerilen insansız hava manevrası, ateşle taarruzdan veya hassas angajmandan da farklıdır. İHAS'ın ayırt edici doğası, onu düşman için asimetrik olarak ölümcül kılar. Öte yandan İHA'nın silah taşımaya da gerek yoktur. İHAS, muharebe alanını sürekli olarak izleyebildiği için, manevra kuvvetlerinin güvenli bir şekilde hedeflerine yönelmesini sağlayarak ve hedefleri yüksek isabetle etkilemesini sağlayarak ölümcül etkiler de yaratabilmektedir. Şimdilik İHAS'lar çoğunlukla açıktaki münferit hedeflere, teröristlere ve yarı sert hedeflere karşı etkilidir. Bunun bir süre daha devam etmesi beklenmektedir. Bu nedenle insansız sistemlerin muharebe sahasındaki faaliyetlerini ayrı bir başlık altında anlatmak daha uygundur.

İnsansız Manevra Yeni Bir Savaş Tarzına Yol Açmaktadır

Günümüzde insansız hava manevrası, harekât ortamının karmaşıklığı ve genişliği nedeniyle pragmatik bir yöntem haline gelmiştir. İHA, düşman hava savunma sistemlerinden kaçınarak geniş muharebe sahasında ortaya çıkan tehditlerle mücadelede ve fırsatlardan istifadede en etkili yöntemdir. Bu yeni savaş biçiminde klasik insanlı manevranın yerini uzaktan etkiler yaratan İHAS manevrası alacak. Satih manevra birimlerinin işlevi, düşman ateşi altında hedefe taarruz etmek yerine daha az riskli görevlere doğru kayacaktır.

Sonuç

Elbette, savaşı yönlendirebilecek ve bilişsel süreçlere katkıda bulunabilecek insandan daha iyi bir alternatif yoktur. Bu nedenle, İHA-insan etkileşiminde insanın kilit rolü devam edecek gibi görünüyor. Öte yandan insan, can güvenliği riskini azaltacak veya insan hatalarını telafi edecek şekilde insansız sistemlerden yararlanmaya devam edecektir. Bu yönelim insanı pragmatik yöntemler aramaya iter. Böylece İHA, maliyet etkin ve operasyonel faydalar sağlayan pragmatik bir yöntem olarak kendini göstermektedir.

Türkiye'nin terörle mücadele stratejisinin operatif sanatta yarattığı çağrışımlardan biri de, klasik manevra yöntemlerinden daha etkin bir şekilde çatışma alanına dışarıdan müdahale imkânı sağlamasıdır. İşte burada “insansız hava manevrası” ortaya çıkıyor. Ayrıca Türkiye 1990'lı yıllardan itibaren Ortadoğu'daki istikrarsızlığın yarattığı asimetrik tehditlerle mücadele etmektedir. Gerek teknolojik gelişmelerin sağladığı avantajlar, gerekse hukuka uygunluk ilkesi ile insansız hava manevraları yapan ve etkin olarak kullanan ender devletlerden de birisidir. İnsansız manevra, Türkiye'nin bu konudaki çabalarına yeni bir boyut kazandırarak gelişmektedir.