

THE PERSISTENT EFFECTIVENESS OF DECOYS IN LAND FORCES' OPERATIONS – LESSONS FROM THE RUSSIAN-UKRAINIAN CONFLICT –

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The ongoing war in Ukraine has changed the nature of armed conflict. Among other things, it has demonstrated that today's unprecedented technological developments have led to much greater risks to the protection of forces on the battlefield. The extensive use of unmanned aerial systems, both for fire control and especially for battle space reconnaissance, has made the battle environment extremely transparent. As a result, armed forces have had to find effective ways of protecting their own forces and operations. One of these measures has proven to be the use of decoys to mislead enemy forces and attack systems. The purpose of this article is to provide a comprehensive picture of the operational necessity of such methods and to offer recommendations based on the lessons learned in Ukraine, where both belligerents have made extensive use of such methods. I anticipate that these findings will contribute significantly to a deeper understanding of the implications of false targets in contemporary military operations.

Keywords: decoy; deception; operational advantage; protection; operating environment;

*Motto:
"Seeing more on the battlefield doesn't necessarily imply understanding
what's truly unfolding".*

Mick Ryan

INTRODUCTION

Russia's invasion of Ukraine through the "special military operation" (UN, 2022), which began on 24 February 2022, was a turning point in international relations worldwide. The world entered an era of fierce competition (Joint Doctrine Note 1-19 Competition Continuum, 2019, p. 1; Mazarr-1, 2018, p. 1; Mazarr-2, 2022, pp. 111-113; MCDP 1-4 Competing, 2020, pp. 1-3), with most actors moving towards accelerated armament. After a long period of peace, high-intensity military operations have returned to a Europe seemingly unprepared for them. This change has created new challenges and threats for European states, including Romania. The recalibration of security and defence policies has become a priority in the current context. However, it is still unclear how it will be implemented.

Beyond the atrocities inherent in any conflict and the suffering of those involved, the conflict in Ukraine has been and continues to be an inexhaustible source of lessons for adapting the structure of armed forces and the way conflicts are conducted. From inaccurate planning based on faulty assumptions due to self-interest, to the use and destruction of weapon systems, the Russian-Ukrainian conflict has revealed many important aspects of adapting armed forces to today's challenges. They should constitute the framework for adapting the security and defence policies of European states, including Romania.

Problem Statement

The Russian-Ukrainian war provides valuable lessons about the nature of contemporary conflicts. One of the lessons is that in a highly transparent environment, combined with the development of strike technologies much deeper into enemy territory and much more accurate, and an extremely shortened strike cycle from the moment of target confirmation, solutions for force protection must be found. This context has highlighted the importance and effectiveness of deception in modern military operations as a strategy of deception, and the conflict

offers a number of lessons that can support the adaptation of military forces. It is recognized that “*the return to great power competition against peer adversaries with advanced anti-access/area-denial (A2AD) capabilities requires a renewed focus on the use of deception*” (Hays, 2020, p. 56). The numerous examples of decoys in the ongoing Russian-Ukrainian conflict demonstrate the effectiveness and relevance of this deception technique in the current operational context.

However, most Western militaries, including Romania's, seem to have abandoned this approach in favour of heavily arming themselves with modern combat systems. The operational comfort provided by air and information superiority until the beginning of this decade has led to the loss of this art from the repertoire of Western armies. Another reason for the lack of interest in decoys in most Western militaries is that they are often seen as useless devices in today's operational environment, where highly sophisticated means of detection give the impression of increased transparency in the battlefield. However, as the Australian General Mick Ryan recognized, seeing more does not necessarily mean understanding more (Ryan, 2024), the way in which the Ukrainians have managed to deceive the Russians, who have such advanced intelligence-gathering sensors, is a testament to this.

Therefore, the research problem that lies at the basis of this scientific endeavour is the lack of training of Western military forces, including Romania's, in the effective use of decoys as a means of achieving force protection.

Research Objectives

In line with the research problem presented above, the main objective of this study is to identify certain lessons learned from the conflict in Ukraine that can be implemented by the Romanian Armed Forces in their efforts to adapt to the challenges of the current operational environment.

Thus, the study provides an in-depth analysis of the persistence of the effectiveness of decoys in military operations, based on the lessons learned from the ongoing conflict in Ukraine. By analysing in detail how they have been used in this conflict, the study also aims to provide a broader perspective on their effectiveness in contemporary military operations.

In this context, we pursue a number of secondary objectives, as follows:

- identify the operational benefits of using decoys in military operations;
- highlight the key challenges and opportunities presented by the current operational environment for the use of decoys;

- interpret the concept of false targeting in the context of the theory of deception;
- identify and interpret instances of the use of decoys in the Russian-Ukrainian conflict.

Although the results of the study can be applied to all armed forces, they are mainly addressed to the Romanian Army. This is *the target of this research*. Moreover, I would like to emphasize the *main limitation of the research*, which is the use of only the information circulated in the public space, a limitation imposed mainly by the information protection measures taken by the two belligerents, given that this conflict is still ongoing.

Research Methodology

The conducted study is a qualitative one, attempting to capture the full range of implications regarding the use of decoys in the current operational context. I would like to mention that the proposed objectives are those that have guided this chosen approach. Accordingly, the study does not aim to test hypotheses, but the research questions are those that direct the study towards the fulfilment of the proposed objectives. These are as follows:

- ❖ *What are the operational benefits of using decoys in military operations?*
- ❖ *What challenges and opportunities do the current operational environment present for the use of decoys?*
- ❖ *How do decoys fit into the theory of deception?*
- ❖ *What lessons can be drawn from the Russian-Ukrainian conflict on the use of decoys?*

The research strategy is a case study to identify the key elements that have contributed to the effectiveness of deception in the military operations in the conflict in Ukraine, using secondary data due to the impossibility of direct access, one of the challenges of ongoing military conflicts.

Paper Structure

The paper is divided into three parts in terms of objectives and research questions. Thus, the first part analyses, from a theoretical point of view, the concept of *decoy*, the advantages it can offer in the design of operations, and the opportunities and challenges that the current operational environment offers for this approach. I then analyse how decoys work from the perspective of deception theory, and finally examine a number of examples from the conflict in Ukraine to identify valuable operational lessons for the purpose of this study.

DECOYS – CONCEPT, BENEFITS, CHALLENGES AND OPPORTUNITIES

The modern battlefield is characterized by a multitude of threats and challenges for the armed forces. The saturation of the battlefield with sensors and technological devices that allow constant monitoring of troop movements and military equipment has become a reality in today's conflicts, requiring constant adaptation and innovation of military strategies. It has become increasingly difficult to conceal military intentions and actions. In this respect, a concept that has proven its usefulness over the years, that of deception, has returned to the attention of military specialists in response to these challenges, in order to ensure the survival and effectiveness of armed structures in the new conditions of combat. The persistent effectiveness of decoys in military operations is a topic of great interest in the current context of the Russian-Ukrainian conflict. However, as mentioned in the identified research problem, it is insufficiently considered by the Romanian Armed Forces.

Concept

First, I recognize that the definition and basic concepts associated with decoys are essential to understanding their role in military strategies. For this reason, this section is devoted to a theoretical analysis of the importance and use of decoys in military operations.

In the context of military operations, the term decoy refers to *“an imitation of a person, object, or phenomenon intended to deceive the enemy's surveillance or detection systems and thereby mislead the enemy”*. (FM 1-02.1 Operational Terms, 2024, p. 21; AAP-06, 2021, p. 39). Tactical ground decoys are therefore fictitious devices designed to deceive enemy observers by simulating one or more vehicles, artillery, radar, combat installations, or other items of interest to the enemy such as bridges, buildings, or various communication routes.

Decoys have always played a crucial role in armed conflict. There are countless historical examples of their use. The most famous dates back to the Second World War, as part of the Allies' Operation *Quicksilver*, to deceive the Germans about the true location of the Normandy landings. It involved the creation of a fictitious force, the 1st US Army Group, to be perceived by the enemy as a real threat. The location of this fictitious force was set in the south-east of England, *“poised”* to invade Europe through the Pas-de-Calais, the most logical option from the German point of view.

This fictitious force was even mentioned in German documents, demonstrating the viability of the strategy. The use of fake military equipment, such as inflatable tanks or wooden planes, was instrumental in shaping the Nazi perception of the Allied landing zone. The power of deception to influence the conduct of military operations can never be underestimated.

Operational Benefits

Decoys can make a significant contribution to **maintaining a high level of operational capability** of military forces by diverting the enemy's attention away from high-value targets. A Chinese study shows that a 1:1 ratio between real and decoy targets can reduce the losses of military units by up to 40%, and a 3:1 ratio in favour of decoys by 50% (Information warfare gives rise to a camouflage revolution, 2012). It can therefore be seen that false targets play a crucial role in achieving force protection by providing the adversary with alternative targets, thus reducing his chances of engaging the real ones.

In addition, the use of decoys can contribute to **increasing the adversary's uncertainty** about the operational situation, which can lead to decision-making errors on the adversary's side. In this way, decoys exploit one of the constant characteristics of warfare throughout history, namely uncertainty. Because of this specific aspect of the nature of conflict, decoys have been, and continue to be, a practical and relatively inexpensive way to gain tactical advantage on the battlefield. Moreover, their use can ensure that the adversary is misled about the organization, combat strength and intentions of the force. By creating a superior numerical picture of one's own forces, decoys can even help deter certain enemy actions.

Decoys can also be used to **draw attention to certain operationally irrelevant areas or targets** by increasing the illusion of their importance, thereby facilitating freedom of movement for friendly forces at times and in areas critical to mission success.

In addition, decoys can be used to **attract the enemy's attention and force him to reveal his position and intentions**. This strategy is extremely useful in creating vulnerabilities for the enemy and successfully destroying some of his critical equipment.

Reducing an adversary's warfighting capability by causing him to waste resources destroying targets that are in fact false is a major benefit of decoys and can significantly influence the conduct of military operations in the long term.

The same Chinese study mentioned earlier shows that a 3:1 ratio in favour of decoys can increase the enemy's consumption by 70% (Ib.). Moreover, maintaining an adversary's confusion about the effectiveness of its strike capabilities can contribute to increasing the chances of achieving surprise, as it may cause the adversary to redeploy its resources inefficiently, placing them in a position of operational vulnerability.

False targets can also be used to **ensure the replacement of military equipment in the contact area**, creating the illusion that the force in question is still in position, when in fact it is ready to intervene in another area. It can facilitate the surprise effect of the adversary, thereby increasing the tactical effectiveness of military operations.

In addition, the proven efficiency of decoys can have a **positive impact on troop morale**, contribute to the achievement of military objectives, and be a **destabilizing factor for the adversary** by creating a climate of uncertainty and confusion.

In today's information age, where information has taken on new dimensions, the use of false targets can also be used as a **disinformation strategy** to confuse the adversary and create a false perception of the intentions and capabilities of one's own forces. Publicly promoting the success of one's own decoys on the battlefield will have a powerful psychological effect on the enemy, casting doubt on his future decisions.

As it has been demonstrated, there are a myriad of operational benefits that decoys can bring in support of military objectives, provided they appear credible to the adversary. In this respect, there are two **relevant factors** in enhancing the credibility of decoy targets, namely their fidelity and the operational significance of their exploitation.

Fidelity refers to the degree of realism of the target. A high-fidelity decoy must accurately reproduce the characteristics of the target it is imitating in electromagnetic space. It is not enough that it looks like the target, it must also have the appropriate thermal signature, the acoustic and electromagnetic emissions of the target, to effectively attract and manipulate the enemy. The operational importance of the decoy is how it fits into the image the deceiver wants to present to the adversary. The more it respects the real way of fighting, the more effective it will be. In this respect, it is important to consider the specific details of the construction of this image. For example, the camouflage of false targets, the positioning of decoys in the specific tactical operation or the creation of a realistic illusion of the environment

are essential aspects to make the use of decoys in support of military operations more effective. In order to increase the chances of success of decoys, it is essential that the above be consistent with the adversary's level of situational understanding.

Challenges and Opportunities in the Current Operating Environment

There are countless examples of the use of decoys throughout history. Regardless of the time period and social development, effective solutions have been found to develop them to a point where they can prove their operational effectiveness on the battlefield. However, today's unprecedented technological development puts additional pressure on their use in military operations. The ongoing conflict in Ukraine highlights the constant threat of unmanned aerial systems (UAS), indirect fire or electronic warfare (EW), all of which hinder the effective use of decoys in military operations. At the same time, the changing nature of conflict in today's operating environment provides a number of opportunities for the use of decoys to gain advantage over the enemy. This section briefly outlines the key challenges and opportunities for the role of decoys in today's operational environment.

Modern surveillance systems, such as advanced drones, satellites and radars, can more easily detect differences between decoys and real equipment, requiring the creation of highly realistic decoy targets, including simulated heat signatures and radio communications specific to the original. With the development and proliferation of electronic warfare capabilities, the electromagnetic signature of a decoy has become essential. It necessitates the need to gain superiority over the adversary's signature management to increase the chances of successful deception. (Ryan, 2024). Multi-spectral decoys can therefore provide an effective response to the challenges of the current operational environment, offering significant advantages in target simulation and adversary confusion. Today, ad hoc efforts to deceive the adversary, including the use of decoys, have become increasingly easy to detect and counter, so the importance of multi-spectral decoys has grown significantly. In this respect, adaptability and innovation must be the measure of operational success. In addition, to increase the credibility of decoys, it is essential to construct a compelling narrative for the adversary to achieve favourable results in attracting attention and misleading them.

In addition, the rapid pace at which contemporary conflicts are being transformed by the armed forces adaptability can pose a major challenge to the effective use of decoys. The conflict in Ukraine demonstrated the initial success of many capabilities (UAS Bayraktar TB2, HIMARS etc.), which were later countered

by countermeasures adopted by the opposing side as part of the adaptation process, significantly reducing their effectiveness. It also poses a challenge to the use of decoys, which must keep pace with changes on the battlefield in order to remain relevant. This requires continuous adaptation of both operational procedures and the technologies used to increase the fidelity of the replicas built.

However, the same operational environment can also present a number of opportunities to be exploited through the ingenious use of decoys. First, technological development can help improve the reliability of decoys. It can also provide the framework for the emergence of new ways and means of deception. For example, in the future *“decoys will have the ability to mask visual, thermal and radar wavebands and will be an integral part of defence systems. It should be technically feasible to have entire structures of **robotic decoys** for deception operations, but simple ones designed to mimic the electromagnetic signature of manoeuvre unit command posts are more likely to be developed in the near term”*. (Science & Technology Trends 2020-2040 – Exploring the S&T Edge, 2020, p. 44). The reliance on military cyber structures may provide the framework for the development of cyber *“honeypot”* fake targets that can be used to lure and identify attackers.

Furthermore, regardless of the technological development of information-gathering sensors, the primary target of deception, and therefore decoys, is the human mind, which remains susceptible to deception. (Bennett, 2007, p. 12). Thus, constructing an image that matches the opponent's prior beliefs can ensure the successful use of decoys.

In addition, the rapid pace of change in the contemporary tactical environment has placed additional pressure on the need for rapid target engagement. Thus, shortening the identification-engagement cycle may prove to be an advantage in the modern use of decoys, which can more easily and effectively deceive enemy forces due to the reduced time imposed on collection systems for target confirmation.

INTERPRETATION OF DECOYS IN THE CONTEXT OF THE THEORY OF DECEPTION

The concept of deception is an integral part of the broad field of deception. Deception is the totality of actions taken to deceive the opposing force commander by manipulating his perception of the operational situation and eliciting a behavioural response that provides an advantage to the deceiver. (AJP3.10.2, 2020, p. 4; FM 3-13.4, Army Support to Military Deception, 2019, pp. 1-1). It can therefore

be seen that decoys fit the definition of deception perfectly. They are used to create an illusion of reality for the adversary and cause him to make incorrect decisions, which can result in one of the many operational benefits previously presented in this paper.

At its core, deception is a communication process between the deceiver and the target. The essence of the deception process is the presentation of certain observables to the adversary, which he can interpret in such a way as to form the desired perception of the deceiver, on the basis of which the expected response can be made. American doctrine describes this process in three steps: *“see – think – do”* (FM 3-13.4, Army Support to Military Deception, 2019, pp. 2-5).

Within this framework, the tools used to create the observables that the adversary must identify are what the theory calls the **means of deception**. They fall into three broad categories: physical, technical, and administrative. As far as false targets are concerned, referring to the definition given at the beginning of the first section of this article, we can say that they fall into the first stage of the American methodology, representing means of deception. They can be used to present the wrong message to the opponent, to manipulate his perception in accordance with the proposed objectives, in order to provoke a specific reaction, be it action or inaction. Thus, the use of decoys is intended either to induce the adversary to take an action that is actually unfavourable to him, or to induce him not to take an action that would be advantageous to him. In both cases, the intent is to manipulate his behaviour.

Decoys are essential tools in deception operations, supporting the manipulation of enemy perceptions and influencing enemy decisions during military operations. Their use supports most of the principles of deception as defined by R.V. Jones (Jones, 2013, p. 24), a renowned researcher in the field, as follows:

- fake targets can be used to deceive the enemy into believing that your forces are in a location other than the real one by placing them in the fake location so that the enemy is trapped or distracted from the real targets;
- fake targets may replicate weapon systems that are not in the force or are present in limited numbers to distort the adversary's perception of the number of forces and weapons held;
- presenting decoys in such a way that they appear to be protecting a particular area or about to take certain actions that threaten the adversary can attract the adversary's attention and resources when, in fact, the decoy intends to do something else;

- decoys can also create a false impression of the location and timing of the deceiver's future actions by focusing the adversary's attention on an operationally irrelevant area or time;
- the use of false targets may cause the adversary to misinterpret the nature of the deceiver's future tactical actions, leading the adversary to prepare or respond inappropriately;
- decoys can exploit the adversary's misconceptions about the deceiver's knowledge of the operational situation, potentially influencing the deceiver's decisions and causing him to alter his plans;
- the use of false targets can reinforce the impression of success or failure of the deceiver's actions, causing the adversary to misinterpret the operational situation and react inappropriately.

False targets also imply a high degree of versatility in terms of the concepts with which deception operates. Thus, in terms of their operational role, decoys can support **both A Type – ambiguity-producing deception (Type A) or M Type – misleading deception (Type M)** (Daniel, 1980, p. 8; FM 3-13.4, Army Support to Military Deception, 2019, pp. 1-6; JP 3-13.4, Military Deception, 2017, pp. 1-9; MCTP 3-32F Deception, 2024, pp. 2-9). Leading the adversary to a particular decision by presenting false indicators is an effective strategy of using false targets to reduce the adversary's level of uncertainty. It involves exploiting his prior beliefs about a given situation and encouraging them by exposing decoys. As a result, the adversary will be inclined to choose the option that is actually advantageous to the deceiver. False targets can also be used to confuse the opponent. Public exposure of the success of such methods can create uncertainty and hesitation in the adversary's future decisions, which can help make the deceiver's actions more effective. It can be seen, therefore, that decoys can be considered an effective tool in the theory of deception, since they can be used for either creating or eliminating ambiguity, a crucial element in manipulating the recipient's reality.

In addition, since false targets are an element used to be observable and attract attention, their use can be achieved mainly through the **simulation method**. It involves creating objects or situations that suggest a certain reality in order to attract attention and mislead the receiver. Although less common because of their complexity and much higher risk, decoys can also be used through the other specific method of deception, **dissimulation**. While simulation involves the use of false targets, dissimulation is more complex. It involves first influencing the adversary's

perception of the success of the decoys and then, against this background, modelling real equipment that appears to him to be fake. As we have seen, it involves a higher degree of risk, but it can be a deceptive solution in extreme cases.

Given their nature, that of attracting attention, the use of fake targets is mainly achieved through **display** as a **specific tactic of deception**. It involves the simulation of equipment or actions to mislead the adversary as to the disposition, size, or intent of the forces initiating the deception. In this regard, decoys can be used to create the illusion of a situation that requires a particular response from the adversary.

The use of false targets can also help increase the effectiveness of misleading actions that employ other tactics. Thus, their appropriate use can ensure the credibility of a disinformation campaign or, by diverting the enemy's attention to other areas, ensure the concealment and camouflage of real forces and actions.

It can be seen that the analysis of deception theory highlights the versatility of the decoy concept in terms of its use in different operational contexts. Thus, false targets play a crucial role in supporting deception operations and contribute to shaping the enemy's perception of the tactical situation (Friedman, 2017, p. 76) and, consequently, its vulnerability.

OPERATIONAL LESSONS FROM THE USE OF DECOYS IN THE RUSSIAN-UKRAINIAN CONFLICT

In the current Russian-Ukrainian conflict, the use of decoys has been a particularly important technique used by both sides to gain tactical advantage. Understanding the nuances in which decoys have been used by the two belligerents can provide valuable operational lessons about the dynamics and complexities of modern warfare. For this reason, the first part of this section will examine the most significant examples of decoy use in the Russian-Ukrainian conflict. It should be recalled that the analysis is based exclusively on information that has been made public through open sources; classified information is not taken into account. However, I accept it as normal for an ongoing conflict in which each side has implemented OPSEC security measures to protect their technologies and deception strategies.

Examples of the Use of Decoys in the Russian-Ukrainian Conflict

The Ukrainian Army's use of decoys

A prime example dates back to the Battle of Kharkiv in May 2022. (Ukraine Deploys Gun-Toting Mannequins to Drive Russians from Kharkiv, 2022). The use

of mannequins to create the image of a larger Ukrainian force than in reality was intended to increase the threat level to the Russians. Even though they were relatively rudimentary, crudely equipped and armed with decorative weapons, they could have misled some Russian reconnaissance drones and been mistaken for real Ukrainian soldiers from a distance. The effectiveness of decoys in this conflict has been documented, with videos suggesting Russian artillery attacks on Ukrainian positions that appeared to be defended by such decoys (Rivero, 2024). These attacks demonstrated the effectiveness of diversionary tactics, using decoy targets to draw enemy fire and gain battlefield advantage. It is important to note that these decoys represented the role of improvisation and were not equipped with equipment specifically designed for military use, but were creatively used to enhance the tactical effectiveness of the Ukrainian forces, as can be seen in *figure 1*.



Figure 1: Mannequins used by the Ukrainian army
(Ukraine Deploys Gun-Toting Mannequins to Drive Russians from Kharkiv, 2022)

The use of dummies to protect high-value systems was another way in which the Ukrainian military implemented this tactic. Inflatable replicas of HIMARS systems have been instrumental in wasting expensive Russian capabilities designed to destroy them. A video posted on social media this year shows an Iskander missile costing around 3 million euros engaging such an inflatable system. (X, 2024). It is a concrete example of the effectiveness of decoys in operations carried out by the Ukrainian military. The importance and effectiveness of HIMARS systems in Ukraine's military operations has been proven in countless situations. Due to their outstanding performance, these systems have inevitably become high-value targets for Russian forces, who are aware of their power and destructive potential. This reality has significantly increased the need for their protection. Taking advantage of the Russians' desire to attack as many of these systems as possible,

as quickly as possible, the use of inflatable decoys, such as those produced by the Czech company "Inflatech Decoy" (Inflatech Decoy, 2024), has proven to be a crucial element in protecting HIMARS systems. The effectiveness of such decoys was also demonstrated by the fact that the Russians once announced that they had destroyed more systems than Ukraine had received from its allies. (Fact Check: Did Russia Claim it Destroyed 44 HIMARS Launchers in Ukraine?, 2022).

At the same time, Ukrainian forces have placed decoys throughout the depth of the Ukrainian lines in Kherson, Zaporizhzhia, and Donbass, representing replicas of various types of systems, whether Soviet or Western, such as M777 howitzers, D-20 or D-30 artillery systems, as well as other tanks or air defence systems, all of which represent high-value targets for the Russians (Rivero, 2024). To increase the credibility of these fake targets, they are equipped with signatures similar to the original – optical, radar or infrared. Moreover, also for this reason, they are mounted on towable platforms that ensure their deployability to increase Russian confusion. (Czech-made M270 MLRS inflatable decoy from Inflatech tricks Russian strike forces in Ukraine, 2024). *Figure 2* highlights a series of such decoys.



Figure 2: Examples of lures used by the Ukrainians, replicas of valuable systems
(compiled by the author)

In addition to providing protection, the Ukrainians have also used inflatable replicas of high-value systems to increase the threat level to the Russians. Placing such “capabilities” in close proximity to the contact has proven to be an effective and risk-free strategy to provoke a Russian response in order to minimize potential casualties in terms of human or material losses.

The efficiency of their use is also proved by the fact that one of the Ukrainian factories has directed its production to such decoys for the Ukrainian army. (Metinvest begins production of decoy military equipment that misleads the enemy, 2023). The efficiency of the products of the Metinvest factory is proven by the fact that more than half of the products delivered to the Ukrainian army have already been destroyed by the Russians. (Ukraine’s Armed Forces Employ Decoys to Locate the Source of Russian Artillery Fire, 2023). In addition, in early March, images of a replica of the Sentinel anti-aircraft radar left behind by the Ukrainian forces after their withdrawal from Advika appeared on social media platforms. The degree of fidelity of the radar, allegedly built in this factory, was impressive, almost indistinguishable from the original. (X, 2024).

Moreover, the reproduction time of the systems is not very long. For example, an M777 howitzer takes about two weeks, while a Ukrainian D-20 artillery system takes only four days. (Ukraine’s Armed Forces Employ Decoys to Locate the Source of Russian Artillery Fire, 2023). These replicas are built from simple and cheap materials, but are detailed enough to fool Russian troops and draw attacks to false targets. For example, one launcher is made from a piece of sewer pipe mounted on an old satellite dish. However, these replicas look quite real, as can be seen in figure 3.



Figure 3: M777 howitzer replica
(Metinvest begins production of decoy military equipment that misleads the enemy, 2023)

In addition, the construction of such replicas was used by the Ukrainians as an information operation (INFOOPS) in the fight against the Russians. Thus, they allowed teams of journalists to visit such a factory in order to document the degree of realism of the resulting products (‘A psychological weapon’: inside a Ukrainian factory making decoy kit, 2023). The visit and the positive impressions of the journalists were intended to create confusion and indecision among Russian decision-makers in future actions.

The Russian military’s use of false targets

Russian forces have extensive experience in using false targets in armed conflicts, as the intervention in Ukraine demonstrates. They have been using this method since the beginning of the conflict. A prime example is the arrow-like devices used as decoys for Ukrainian anti-aircraft systems to protect its ballistic missiles, unknown even to the Americans (Russia Deploys a Mystery Muniton in Ukraine, 2022). These devices are launched by Iskander-M missiles when they signal that Ukrainian anti-aircraft systems are being intercepted. Each device is equipped with electronic components and emits radio signals to jam or deceive enemy radars attempting to detect the Iskander-M missile. The device also contains a heat source to attract any projectiles attempting to destroy the missile. Figure 4 (a;b) highlights these devices used by the Russians as decoys.



Figure 4 a: Decoy devices for the protection of Iskander-M missiles (compiled by the author)

When the Ukrainians began attacking Russia’s military airfields, Russia resorted to fake targets to increase the chances of survival of its own capabilities, but also to cause the Ukrainians to waste their already scarce resources (Africk, 2024). A telling example of such a Russian practice is the image depicting a helicopter landing on a fake fighter plane drawn on the runway (Epstein, 2024).



Figure 4 b: A fake fighter plane, drawn on the runway (Epstein, 2024; Africk, 2024)

Similar to the Ukrainians, the Russians used inflatable replicas of their own weapon systems, as shown in *figure 5*. They would place the decoys in such a way that they would be discovered by the Ukrainians, then, after a few days, they would replace them with real systems to ambush the opposing forces (Kazakova, 2023). This type of tactic proved to be highly effective, at least in the initial stages. Even after the discovery of the Russian method of using these fake replicas, their usefulness continued to be considerable, increasing the level of hesitation and making it more difficult for the Ukrainians to target. In addition, one of the challenges of the conflict in Ukraine, the protection of command posts, is also felt by the Russians. For this reason, they used inflatable bunkers to make the Ukrainians waste their ammunition (Rivero, 2024).



Figure 5: Russian inflatable models (S-300 on the left and T-80 on the right) (Kazakova, 2023)

Another instance of the Russians using false targets was during the Ukrainian counteroffensive in the Zaporizhzhia region in the summer of 2023 (Kofman, 2023). In this case, the Russians, being on the defensive, used some of their own trenches

as bait for the Ukrainians. They planted explosives in these trenches, which they would detonate remotely when the Ukrainians went in to clear them (Khurshudyan, 2023). Moreover, for the purpose of wasting Ukrainian resources, the Russians used inert X-55 rockets to attract the attention and fire of Ukrainian anti-aircraft systems (Lisnichuk, 2022). Also out of this desire, the Russians used balloons with simple metal triangles suspended from them to appear as a missile or drone on Ukrainian radars. (Ukraine says it shot down 6 Russian balloons that appeared over Kyiv, 2023). It is worth noting the importance of these decoys, given that some anti-aircraft missiles supplied to Ukraine by Western allies can cost up to \$4 million each (Sullivan, 2022).

A final relevant example of how the Russians used decoys was to increase the protection of bridges, critical elements for the mobility of their own forces and resources (Helfrich, 2022). They used radar reflectors to create a signature similar to the bridge, installed next to the bridge to attract Ukrainian missiles, as can be seen in *figure 6*.



Figure 6: The Russians' ghost bridge (Helfrich, 2022)

Operational lessons and recommendations

The examples presented above demonstrate the viability of the false target concept in contemporary military operations. In addition, they provide valuable lessons for adapting forces to the demands of today's operational environment, the most important of which can be summarized as follows:

❖ Even the most rudimentary decoys can be enough to deceive the enemy. The use of decoys by the Ukrainians to slow down Russian operations has shown

that they can be very effective in creating distraction and confusion among the enemy. Thus, the imaginative use of all available resources in support of military operations can be critical to force protection and mission success.

❖ However, to increase the chances of success, decoys must keep pace with technological developments. Technology has been, and will continue to be, the primary factor influencing the adaptation of combat tactics (Piehler, 2013, p. 362). It is also true for decoys, which must evolve technologically in order to be successful in their operational role. Their degree of fidelity must correlate with the adversary's intelligence gathering capabilities. Therefore, adapting decoys to the specific challenges of the operational environment is critical to their success. In this respect, decoys must replicate not only the visual, but also the thermal or radar signature of the targets, their acoustic characteristics, and their behaviour in order to maximize their effectiveness.

❖ To add to the enemy's confusion, decoys must also have built-in systems that mimic the fake target's explosion or even a possible fire response, making it more credible to the enemy. In this way, the adversary will be tempted to believe that he has hit a real target. It has at least two advantages. First, it will increase the protection of the decoys, which will lead the adversary to stop looking for the real targets, and second, it will create a distorted picture of the operational situation, which may contribute to his subsequent surprise.

❖ The emergence of new capabilities on the battlefield, such as autonomous combat systems (robots), will require the continuous adaptation of decoys to these technological developments. Serious analysis is needed both from the perspective of deception of such systems by constructed replicas and from the perspective of how robots can become potential decoys to attract enemy attention. Therefore, continuous adaptation to the specific challenges of the nature of armed conflict must be an essential requirement for their success in future military operations.

❖ The picture created by the use of decoys must be as realistic and complete as possible, but also consistent with the enemy's expectations of the operational situation. To achieve this goal, decoys must be placed in areas that make operational sense, and their placement and operation must be consistent with operational procedures. Special attention must also be paid to their camouflage, which must blend with the environment to create the most realistic illusion of the presence of friendly forces.

❖ Ingenuity in the use of decoys can ensure operational success. Examples include the use of fake replicas of HIMARS systems to induce the adversary to withdraw certain key capabilities or devote additional resources to their protection,

the use of trenches as decoys in defensive operations, or the use of fake devices to attract the adversary's expensive missiles.

❖ Decoys are an important asset in protecting high-value proprietary capabilities. Distracting the enemy and redirecting enemy attacks to false targets are effective strategies for misleading the enemy and protecting your assets. For example, in the context of today's conflict challenges, the use of decoys is critical to protecting own command posts. Command posts have been, and will continue to be, one of the most important enemy targets on the battlefield. Their destruction means disorganizing the enemy's forces, which will contribute to neutralizing his ability to coordinate his actions and respond effectively on the battlefield. Thus, the creation of false positions and structures, supplemented by systems imitating radio communications, the placement of false antennas imitating the communications system of the command post and inflatable vehicles can mislead the enemy into attacking these elements of great importance to him with expensive attack systems, wasting his own precious resources. This will also complement and help protect the deceiver's real command and control systems.

❖ Wasting the enemy's resources is one of the primary operational functions of deception. In a conflict of attrition such as the one in Ukraine, logistical support can be the decisive capability in winning or losing the war. For this reason, the effectiveness and adaptability of decoys used by military forces is essential to increase the chances of operational success.

❖ In the information age, when the main attribute of information has changed from knowledge to influence, the effectiveness of the use of decoys in the military actions of ground forces can be used as information operations, thus increasing the degree of indecision of the enemy in his future actions.

❖ Finally, it is absolutely necessary to monitor the effectiveness of one's own decoys and evaluate the enemy's reaction to them in order to ensure their adaptation to the existing operational situations. It is a truism that the effectiveness of decoys is determined by how quickly they are destroyed by the enemy.

CONCLUSIONS

The process of adaptation is essential to the survival of any organization, including the military. For this reason, it is crucial to identify the critical elements of the way in which the armed forces operate and to be able to transform in a timely manner. As the battlespace becomes increasingly transparent, the battle strategies and tactics employed to ensure force protection and mission security must be

constantly adapted. The use of decoys in military operations is a critical issue in this context, as they can provide a variety of operational benefits, as the ongoing conflict in Ukraine has so far demonstrated.

This study has analysed how these decoys have been used in the aforementioned conflict and can conclude that this art is far from dying out. On the contrary, its proven effectiveness shows how essential it is in modern military operations. Therefore, armed forces, including the Romanian ones, should consider paying much more attention to deception as a component of military operations. Some of the reasons can be considered as follows:

- firstly, not all potential adversaries have advanced ISR capabilities to cover the entire confrontation space;
- secondly, all ISR systems have some limitations. Many of them can process signatures in several spectrums, but never in the entire electromagnetic spectrum simultaneously;
- thirdly, it can take several days to validate targets, which could give an advantage to the use of false targets;
- fourthly, a single questionable element is sufficient to cause the adversary to become indecisive and to gain significant operational advantage;
- finally, precision munitions are extremely expensive and in short supply, so decoys can contribute significantly to the waste of valuable adversary resources.

Therefore, the Romanian Armed Forces should, inter alia, carry out the following activities in order to enhance their own capabilities for the effective use of false targets in military operations:

- develop doctrines and procedures for their integration during operations specific to each branch and service;
- train their own forces on how to use decoy integration during military exercises;
- integrate decoys into simulation exercises and war games;
- continually monitor technological developments and adapt their own decoys and specific operational procedures;
- test the effectiveness of own decoys;
- purchase prefabricated multi-spectral decoys. Their price is much lower compared to any real equipment;
- one procurement option would be to earmark part of the price of a particular weapon system, e.g. 1%, for the purchase or research development of its replicas;

- consider the establishment of a dedicated structure in the Romanian Armed Forces. The Russians continue to maintain the independent 45th camouflage regiment, one of whose tasks is the use of decoys.

In conclusion, I believe that the Romanian Armed Forces should increasingly incorporate the use of decoys in its military operations as a means of protecting own forces and actions in an increasingly transparent operational environment. It is also necessary to take advantage of the lessons learned from the current Russian-Ukrainian conflict, which provides the perfect risk-free environment for learning and adapting new tactics, techniques and procedures.

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