

Operational Environment

With the collapse of the Warsaw Pact in the early 1990s, there was a shift from the concept of conducting large-scale operations against a close-to-peer adversary, as a situation arose with relatively minimal risk of war between states. The overall change was towards multinational peace support operations, i.e. less extensive deployment of military forces within the continuum of conflict.² After the events of 11 September 2001, the concept of conducting limited expeditionary operations aimed at acting against irregular forces – counterterrorist and counterinsurgency operations within the framework of conflict stabilisation in Iraq or Afghanistan came to the fore. This led to a change in military thinking, but also in the overall development of the armed forces, whose decisive task, instead of the combat operations, became support for the stabilisation of conflict regions within the framework of international crisis management.³

Politics and war

The change in the philosophy of conducting traditional military operations occurred only after the events in Ukraine in 2014. The stability of the external security environment was mainly affected by the dynamics of the development of the security situation in Ukraine and Russian–Ukrainian relations.⁴ The above was further deepened in 2022, when Russian military forces invaded the territory of Ukraine. Globally, the core task of the armed forces has come to the fore, namely to guarantee the defence and security of the state against an external armed attack by a foreign power, including against a conventional adversary, which does not only deploy its forces conventionally,⁵ i.e. a hybrid adversary in a “hybrid” Operational Environment (hereinafter: HOE). This way of waging

¹ Armed Forces Academy of General Milan Rastislav Štefánik.

² Marek 2019.

³ ANDRASSY 2019: 80–107.

⁴ MUŠINKA 2021.

⁵ MATTIS–HOFFMAN 2005: 18–19.

war is usually referred to as hybrid war and threats associated with current conflicts as hybrid threats. Due to the blurred or missing boundaries between war and peace, and the involvement of unclear or covert actors, it is not easy to face such threats. Just as hybrid warfare is conducted by a mixture of military and non-military means, the response to hybrid war must include a mixture of military measures complementing a comprehensive package of non-military, i.e. political, economic, diplomatic and other means.⁶ A comprehensive understanding of the HOE is almost impossible due to its complexity. It is a difficult task not only during linear-symmetrical conflict, but especially if there is a nonlinear conflict, whether counterinsurgency or hybrid. Another important factor that greatly limits the possibility of understanding all phenomena and contexts in a particular operational environment as thoroughly as possible is time. One could claim that the less time one has to evaluate the operational environment, the more likely it is that the individual elements of the operational environment and their relationships are misunderstood.⁷ During recent decades, we have witnessed that conflicts are not conducted in the usual way. Wars are not declared and do not end by a peace agreement. Conflicts are still waged with the use of military instruments, but these are getting increasingly outweighed by non-military means such as economic sanctions, restrictions on the energy supplies, information operations, propaganda and dissemination of misinformation, terrorism and increased involvement of non-state actors. Systematic attacks on states are referred to as colour revolutions, grey zone conflicts, unconventional wars, unrestricted wars, or non-linear wars. The boundaries between peace and hybrid war, combatants and non-combatants are blurred.⁸ The fundamental dilemma of conflicts and wars with limited objectives after World War II such as Korea, Vietnam, Afghanistan, Chechnya and Iraq was the achievement of political goals in the country of intervention and also the termination of the deployment of military forces so that their withdrawal did not look like a defeat.⁹ Without legitimate and dedicated political support, a military instrument of state power cannot be used for the achievement of a relevant and, at the same time, desired political result. Also, without legitimate support from allies and one's own country, it is impossible to pursue political

⁶ EEAS 2015.

⁷ SPILÝ 2014: 132–140.

⁸ HOFFMAN 2007.

⁹ KOMPAN–HRNČIAR 2021: 87–107.

goals and effectively use the space and time created by military intervention. Without such support, there is a general perception of partial failure, which results from the different perspectives of politicians and military commanders on their responsibilities and capabilities in times of conflict, war, or intervention. Politicians are necessary for determining political goals, ways and means, but military instruments of power are used to achieve them. Military forces are executing activities in accordance with their standards and political directives, even in very violent conditions, by very violent solutions. Therefore, it is up to the politicians to determine the political outcome of the war, including the hybrid war, which can also be achieved using the military instrument of power.¹⁰ When defining military strategy in hybrid warfare, it is appropriate to understand the characteristic of politics, resulting from the political system and processes and its violent manifestation, which is called war. For this definition, we can consider the quote “war is nothing but a continuation of politics with the admixture of other means”¹¹ as one of the foundations. War is directly based on the definition of conflict, which is one of three basic relationships and situations, the others being the state of security and crisis situation, which are the result of relations between communities of states, the states themselves, nations, and other elements of the social structure of society. Neither peace nor war exist in their extreme forms. Ideal peace is a utopia, and absolute war is a theoretical construct with unlimited violence. Instead, these terms belong to both ends of the conflict spectrum, expressing the wide variety of evolving conditions existing between states. Somewhere between these terms lies the definition of a hybrid war, when it is already difficult to determine whether we could evaluate the situation as war or as peace.¹² War is generally a conflict between states, organisations, or larger groups of people, characterised by the use of violence or physical force between the warring parties. A typical feature of war is the fact that the parties involved are convinced that the use of military force is the only way to resolve mutual disputes.¹³ Traditional definitions of war have focused on armed conflict between states, in which one or both sides usually fight for national survival. Such a conflict is close to the concept of absolute war, a situation that requires the mobilisation of all national resources. However, we could consider hybrid

¹⁰ KOMPAN 2020: 106–113.

¹¹ CLAUSEWITZ 1946.

¹² KOMPAN 2020: 106–113.

¹³ VEJMEJKA 2005.

war as an intersection between the economic, social and military domains, so it is a social and military phenomenon simultaneously. Therefore, the use of force in hybrid warfare is determined by broader contexts based on politics and not solely on military capabilities or lack thereof. In a hybrid war, states fight over material interests or values, and opposing social groups compete for resources, identity, religion, or emotional expression. War, including hybrid war, generally ends in destruction, mutual attrition, compromise, defeat, surrender, or simply a pause before its next violent or nonviolent phase.¹⁴ Each war has its specific causes, but in general, one could claim that the most fundamental reason is always the human desire for power. Political conflict usually transforms into war when political opponents sense an opportunity, based on their relative power and understand war as a means to defend and spread their truth and expand their influence. Power is inherently unequally distributed and its distribution varies in time and character from one society to another. Power could be understood as a material component determined by the amount of resources or physical means of coercion in terms of weapons and units. At the same time, we could also understand power as a non-physical intangible component that results from legal, religious and scientific authority, intellectual or social prestige and reputation and that supports the diplomatic or military instrument of power.¹⁵ In its essence, power provides the means to attack and, at the same time, repel the attack of another entity.¹⁶ Politics is thus the process by which power is distributed in human society. A process of distribution that may be relatively fair by consensus, inheritance, election, or tradition. This process could also be chaotic with the use of violence, revolution or struggle. In any case, the dynamics of politics creates a constant pressure on the distribution of power and a change in the power arrangement. Political events are the result of conflicts, that is, the activities of compromising or antagonistic parties and their interactions. We could apply exactly these same characteristics to hybrid warfare, which makes it an instrument for policy enforcement, i.e. power sharing. In its essence, war, and hybrid war as such, is an act of force intended to force adversaries to fulfil someone else's will. Hybrid war could be characterised as a long-term and wide-spectrum organised action on adversaries with social and economic impact, the purpose of which is to achieve a certain political goal or goals. Classical war

¹⁴ BASSFORD 1997.

¹⁵ BASSFORD 1997.

¹⁶ VEGO 2009.

is a violent manifestation of tensions and disagreements between political groups. It begins when political conflict reaches an emotional level where organised violence is unleashed. In a hybrid war, however, unleashed violence could only be understood as one of the tools and not as the only exclusive tool.¹⁷ In general, we could claim that political leaders use the military instrument of power in hybrid warfare when they consider its political necessity, regardless of whether it is beneficial in the given situation or not. This means that even military strategists in hybrid warfare must fully understand the political objectives, which could sometimes be very emotionally or militarily unclear. They must be able to transform these political goals into military effects that will support the achievement of the desired political outcomes.¹⁸

Politics and military strategy

We could claim that the strategic environment of hybrid warfare is defined by the nature of politics and the interactions among political entities. Such a complex environment tends to be influenced by dynamic and sometimes contradictory factors that result from the rationality and emotionality of politics. The creator of military strategies should be able to evaluate the importance and peculiarities of these factors and the extent of their influence on the strategic environment of hybrid warfare. Based on the dynamism of the environment, strategies are then created as long-term plans to achieve a political goal or goals.¹⁹ Military strategy in hybrid warfare is part of a national or even international strategy that represents the way in which military power can be generated and deployed and how military instruments support other power instruments to achieve the political goals of a given country or group of countries. Documents that guide military strategy must clearly state how the military strategy will integrate with other non-military elements of the strategy. It is also necessary to clarify the mutual relationship between military strategic goals and the achievement of political-strategic outcomes.²⁰ The military forces in a hybrid war are basically responsible for creating and maintaining the conditions required by other entities

¹⁷ NEMETH 2002.

¹⁸ VEGO 2009.

¹⁹ BASSFORD 1997.

²⁰ KOMPAN 2020: 106–113.

or in favour of other power tools. It is highly unlikely that the resulting strategic state will be achieved by military activities alone. After deciding on the final strategic goal (end) and the role of the armed forces in achieving it, resources are allocated and a decision is made on how to appropriately use them. An adequate military strategy in hybrid war depends on the successful alignment of ends (goals), ways (strategic directions) and means (resources):

- Ends (Goals) – the crucial factor in establishing clear and unambiguous goals in hybrid warfare. However, at the strategic level, it is not always possible to establish a permanent objective due to the complexity of the strategic environment. If the strategic objectives are not clearly defined, the initial planning will have to be executed according to a general political directive, which may lead to a partial misunderstanding of the adversary's intentions. There is also a difference between a strategy for the complete achievement of the envisioned end state and a strategy for interrupting the deployment at a strategically convenient moment. Those two differ in character and time frame, and focusing only on the complete achievement of the resulting state could reduce the chance of ending the conflict with lower resources (means) spending.
- Ways (Directions) – if objectives and means are available, a plan is developed to ensure the best use of available resources, including a directive on the use of means to achieve hybrid warfare objectives. Directions could be, for example, strategic plans on countering hybrid threats. Planning should consider the likelihood of change in goals or means, and plans should also be prepared for unexpected events which have to be always expected in a hybrid war.
- Means (Resources) – the means available for the fulfilment of the plan are the resources or capabilities assigned after the process force generation and tailoring the requirements necessary to counter hybrid threats. These means should be used in a way that does not conflict with the strategic objectives within the given policy framework, even if this would not be the most efficient way to use them.²¹

In essence, in hybrid war as in classical war, we could recognise two ways of deploying military force to impose one's own will on the adversary while linking political goals with military strategic ones. The first is based on the

²¹ BASSFORD 1997.

complete elimination of the adversary's military capabilities so that he cannot continue to resist. The second way is to inflict only limited physical losses on the adversary but to emphasise the decline in the morale of the population and combatants or the loss of political will to resist so that he begins to negotiate or immediately accepts the stipulated terms. The first alternative can be called the strategy of annihilation and it is associated with unlimited political goals. This means that we seek out and eliminate the specific military defence capabilities of the adversary, thereby disarming him and giving him no room for negotiation, but only for the unreserved adoption of our will. The second alternative can be called erosion strategy and it represents limited political goals. In this strategy, we try to inflict such losses on the enemy that negotiation and ending the fighting is a more lucrative alternative compared to continuing the resistance. Anyway, regardless of the application of any strategy, the achievement of goals, so-called victory, depends on the use of economic, diplomatic, and informational tools, and the use of military force is only a supporting factor of the other tools.²² Therefore, a thorough understanding of the interrelationship among political and military objectives is essential for all military strategists in hybrid warfare, whether applying or resisting it. It may be that military factors will guide policy at some point. Political goals, on the other hand, will always influence the nature of the conflict. The more effort is made when the existence of the system is threatened and there is a clear justification for armed intervention, the more obvious the military character of the conflict will be. Based on the end state, the political goals of a certain entity can be divided into limited and unlimited/high-end.²³ Unlimited political goals are aimed at eliminating the adversary as a political entity, it means eliminating political representatives, including political organisational structures. Limited political goals are rather aimed at forcing the adversary to negotiate or accept proposals without eliminating political structures or initiating a process of political change.²⁴ Based on the above facts, it is clear that unlimited political goals will mostly be supported by a military strategy of annihilation, in hybrid warfare. The strategy of erosion is not initially suitable in achieving unlimited goals, because when the adversary understands that our goal is to eliminate him completely, he will try to use all available resources to avert such a threat and preserve his existence. Limited political goals could

²² KOMPAN 2020: 106–113.

²³ BASSFORD 1997.

²⁴ BASSFORD 1997.

be achieved by a strategy of erosion, which in this case is more socially and politically acceptable, and based on lessons identified from recent conflicts, even feasible. In specific cases, it is also advantageous to use a military strategy of limited annihilation, which would be focused only on the military component or even only on specific military capabilities or other capabilities, so the loss of will to resist will be the only possibility to survive.²⁵ Based on the knowledge gained, we could claim that political and military strategic goals are fundamentally different in hybrid warfare, despite the fact that military strategic goals must be based on political goals. Political objectives should describe a vision of what the desired political outcome state is, i.e. what we want to achieve, including success criteria in hybrid war. Military strategic objectives should define how to achieve the desired political outcome by military instruments of power,²⁶ even in hybrid war.

Peculiarities of Hybrid Warfare

We could understand war, in accordance with Clausewitz's claim, as a natural and fundamental part of politics,²⁷ because it represents the basis of politics, that is the struggle for power, and hybrid war is no exception to this claim. War is a long-term organised action, mostly violent, and also mostly between political opponents. According to Clausewitz, the political intention is the purpose, the war is the means, and the means cannot be divorced from the purpose.²⁸ War, including hybrid war, could therefore be defined as a "policy tool" or even more precisely identified as a tool for solving political disputes.²⁹ Such an understanding of war can already be found in the work of the Chinese philosopher and military strategist Sun Tzu from the 6th century BC, who claimed that a ruler starts a war by giving orders to his duke. But only the duke will win, whose ruler does not interfere in the command of the army.³⁰ This means that war without a political decision and determination of goals is not sustainable.

²⁵ KOMPAN 2020: 106–113.

²⁶ VEGO 2009.

²⁷ CLAUSEWITZ 1946.

²⁸ CLAUSEWITZ 1946.

²⁹ KREJČÍ 2011.

³⁰ TZU 1910.

At the same time, but after the start of the war, it is necessary to leave military activities in the competence of military commanders and political activities in the responsibility of politicians. Military and civilian leaders have different competencies, perspectives and responsibilities. Therefore, close cooperation of political and military representatives is necessary so that military forces and means are used to achieve the right political goals in hybrid warfare.³¹ War represents total violence and conflict resolution using maximum force.³² But war is still only one of the means to resolve conflicts, terminal in its essence. First of all, it is necessary to use international law and diplomacy to resolve conflicts. But one should not forget the lessons from history and the statement by the Prussian king Frederick II The Great that “negotiations without weapons is like music without instruments”.³³ In determining political goals, especially those that could be achieved by military instruments of power, it is necessary to maintain close cooperation among political representatives and the military component. Maintaining national and military strategies as separate strategies sets the stage for later failure to achieve policy goals in hybrid warfare. Such a separation opens a gap between political goals and military plans, which should be bridged by a strategy that determines exactly how to use military force to achieve the desired political result and not just the military result in hybrid warfare. A military strategy, the application of which military targets are effectively destroyed, is successful from a military point of view, but may fail from a political point of view, unless it also has an impact on the politics of the adversary.³⁴ Therefore, a thorough understanding of the hybrid operating environment is essential, and not only by military commanders but also by political representatives. The operational environment is generally understood as the sum of conditions, circumstances and influences acting on the deployment of capabilities and reflected in the decision of the military commander. The operational environment is a multidimensional system. Understanding its structure and its internal and external relationships is a determinant for success in modern military operations.³⁵ It is part of the overall security environment, which expresses the spatial dimension of security, where security actors operate at a specific time

³¹ BETTS 2002: 23–30.

³² KREJČÍ 2011.

³³ REDDAWAY 1904.

³⁴ KOMPAN 2020: 106–113.

³⁵ SPILÝ 2014: 132–140.

and with specific security interests. The security environment is the environment in which the reference to social entity asserts its security interests in interaction with the sources (carriers) of security threats.³⁶ Thus, a change in the security environment will also affect fluctuations in the operational environment, and this will also affect the decision-making of military commanders. For the purposes of a closer understanding of the current hybrid operational environment, it is essential to understand the current security environment with an emphasis on the military strategic environment, because it is the strategic environment that directly determines the strategy, and it shapes the operations that fulfil it.³⁷ This means that the security environment shapes the operational environment, which influences the decision-making of commanders. Therefore, in hybrid warfare, commanders at all levels of command and control are required to constantly monitor and correctly assess the adversary's objectives in order to avoid surprise and at the same time to maintain the ability to conduct sustainable operations in the designated operational environment. The adversary usually tries as a priority to disrupt the ability to move and manoeuvre in all domains,³⁸ which causes a delay or even failure to carry out military operations,³⁹ and thus also a failure to support other instruments of power. At the same time, the adversary is interested in disrupting the command and control system, which causes disruption of the entire decision-making cycle of observation, orientation, decision and action, and thus the loss of initiative and pace of military operations. This could be caused, for example, by disrupting the global positioning system, cyberattacks,⁴⁰ data piracy, neutralisation of the transmission infrastructure (satellites, transmitters), or attacks on power production or transportation networks.⁴¹ The study of modern conflicts shows that they mostly start and end in the land operational domain.⁴² Therefore, their solution often requires the deployment of such military force and such military capabilities that are able to implement control and manoeuvre in the land operational environment and at the same time to maintain contact with the population in the given domain. The land environment is characterised

³⁶ ŽÍDEK–CIBÁKOVÁ 2009.

³⁷ Department of the Army 2019a.

³⁸ Department of the Army 2019a.

³⁹ Asymmetric Warfare Group 2016.

⁴⁰ *Bezpečnostná stratégia Slovenskej republiky* 2021.

⁴¹ VAN COPPENOLLE et al. 2022.

⁴² IISS 2020.

by a multifaceted morphology and varying physical properties; therefore, its control should be carried out in such a way as to create conditions for further activities. When planning and executing operations, it is also appropriate to consider the fact that the land environment is a permanent living space for the population, which brings a specific measure to conducting operations.⁴³ Timely and accurate deployment of adequate military forces, as well as maintaining their mobility, protection and sustainability is essential for the success of operations.⁴⁴ This is because the conduct of operations in a hybrid war, especially in a land environment, is characterised by the following aspects, which can also be called challenges for the deployment of military forces in a hybrid operational environment:

- Varying density of deployed forces and resources – due to a non-linear operational environment, which also causes dispersion of efforts and makes it difficult to focus and concentrate forces, and at the same time places high demands on freedom of movement and manoeuvre. Therefore, a high level of unit mobility, reliability, communication and interoperability is required, which makes it possible to increase the level of coordination between operational factors of time and space.
- Immediate sharing of acquired data – has a decisive impact on the conduct of operations in the land environment, as it ensures a higher degree of freedom of movement in the area of operations.
- Conducting operations inside an environment shaped by human activity – from minimally shaped (e.g. agricultural landscape) to extremely changed (megapolis), which requires a complex change in the methods of deploying forces and enormous demands for shaping such an environment in the event of its degradation. Part of the response is also the creation of new military concepts such as NATO's concept for conducting expeditionary network-centric combat operations. These operations are led by task groups of very high readiness based on ground forces (battalion and brigade combat groups), which are able to react almost immediately, effectively and precisely to threats even on the NATO periphery.⁴⁵

⁴³ ROLENEC et al. 2019: 33–40.

⁴⁴ PODHOREC 2012: 41–50.

⁴⁵ SCHULTZ 2017.

- Rapid change of the situation – caused by technical and technological development, which places high demands on rapid decision-making, increased protection of forces against high-precision weapons and continuous deployment of available sensors, because the reaction time is significantly reduced.⁴⁶
- Development of technologies and the development of new weapon systems – these significantly limit the manoeuvre in the area of operations (concepts of “Anti-access – Area denial”)⁴⁷ which instead of restricting the manoeuvre in an area, act rather point-wise and precisely on the components of the forces, which requires a great effort to support mobility to ensure a hidden and dynamic manoeuvre. At the same time, the need for constant movement also comes to the fore, because the development of new types of nuclear warheads, may lead to a return to the concept of their tactical use.⁴⁸

The development of the operational environment of hybrid warfare directly affects the change in the focus and the way the military instrument of power is used. Conventional and hybrid threats and the conduct of high-intensity conflict operations aimed at defeating adversary conventional forces from the territory of an attacked NATO member state are coming to the fore.⁴⁹ Military activities are inherently complex and require the joint action of all actors in the crisis area. Military activities, even in hybrid warfare, dynamically apply combat power, but this power must be legitimate, consistent in targeting, stoppable, controllable and generated specifically and at the same time adequately for each specific situation. Following the nature of the hybridization of conflicts, it is necessary for military activities to be in full synergy with other non-military activities, as part of a comprehensive approach to solving the emerging crisis. The general goal of military activities is to gain a military advantage over the adversary. This advantage could be achieved by a complex combination of the following two types of activities, namely:

- conventional kinetic military activities – focused on the physical part of the hybrid operational environment

⁴⁶ GRESSEL 2020.

⁴⁷ JENZEN-JONES – LYAMIN 2014.

⁴⁸ LOWTHER 2020.

⁴⁹ Asymmetric Warfare Group 2016.

- information activities – focused on the perception of the hybrid operational environment, i.e. the mostly non-physical component of the hybrid operational environment⁵⁰

Both types of activities will always produce an effect that will be followed by a dynamic interaction between the actors of this process, in some cases difficult to predict. Therefore, success in the hybrid operational environment will require finding the right balance between both types of activities, including through the appropriate alignment of operational factors in a hybrid operating environment.⁵¹

Perception of operational factors

Due to changes in the operational environment and the hybridisation of conflicts, military operations could also be conducted against organised non-state armed forces (proxy groups, mercenaries). The immediate goal of military forces is to maintain their own freedom of action and limit the freedom of action of adversary forces and their freedom of movement. Operations are conducted at a high pace and this increases the demand for their security (e.g. logistics, information collection). When operating in such an environment, it is necessary to consider the goals of the adversary, which will mostly be aimed at limiting and influencing the operations themselves or at least taking advantage of instability, using any means (terrorism, criminal activities, disruption of public order, etc.) in all military domains of a hybrid operational environment, including informational one.⁵² Effective application of the military instrument should be aimed to use the hybrid operational environment to their advantage. Therefore, it is necessary that operational factors such as time, space, force and information are perfectly coordinated during military operations in hybrid warfare. Military commanders must constantly assess the relationship of time, space and force, including in relation to the informational environment and information. The correct alignment of presented factors creates the conditions for success in military operations.⁵³ A fundamental requirement of military operations in

⁵⁰ Department of the Army 2019a.

⁵¹ McCuen 2008: 107–113.

⁵² Hoffman 2007.

⁵³ Vego 2009.

hybrid warfare is to obtain and maintain freedom of action, i.e. the ability to make a variety of critical decisions to achieve assigned military objectives. And it is precisely the appropriate balance of individual operational factors that is the primary aspect of success.⁵⁴ The factor of space includes the land, sea, air and space domains, including all their distinctive features that affect the deployment of military forces. If the space factor is not correctly and realistically evaluated or is completely ignored, military operations fail in hybrid warfare. The stated premise is based on the fact that space will always be the source and at the same time the goal of military operations. The goal is that without control of the space, the execution of military operations is greatly limited or impossible. It becomes a resource due to the need for sufficient space to deploy and concentrate military forces, perform manoeuvres and conduct operations. Space must therefore be controlled to such an extent that military objectives can be achieved in hybrid war. Military commanders should be able to understand the basic characteristics of the space in which they will conduct operations of hybrid warfare, its dynamic and topographical components and the distances between areas of interest. The basic historically proven logical parallel applies that larger military forces require more space for movement and manoeuvre. Space, with its distances and physical characteristics, is therefore a critical factor for the deployment of military forces in a hybrid operational environment. Of course, we could evaluate the factor of space as essential, but we do not evaluate it as the most important, because only the factors of time and force add importance to it.⁵⁵ The factor of time is very closely connected with the factor of space, but time, unlike space, is much more dynamic and especially unrepeatable. The loss of space is replaceable because space could be regained or at least shaped to one's advantage, but the loss of time provides a definite advantage to the adversary in hybrid warfare. In its essence, the parallel applies that the larger the force, the more time it needs to be deployed in an operation, and this is further amplified by the size of the space in which it operates or in which it is to be deployed. Since World War II, it has been obvious that military units spend several times more time in preparation and moving than in conducting the activity itself.⁵⁶ This brings with it the risk that even the smallest incident such as the

⁵⁴ VEGO 2009.

⁵⁵ VEGO 2009.

⁵⁶ LAWRENCE 2017.

restriction of movement can disrupt the temporal sequence and synchronisation of the subsequent combat activity, thereby making it difficult to achieve military objectives. When planning military activities, a certain time flexibility is left for unforeseen circumstances (threats or opportunities), but in standardised activities there is reliance on a norm, which may not be plausible for a specific hybrid operational environment. With the development of technologies, the importance of time as an operational factor also comes to the fore. Technologies provide the ability to move quickly, continuously collect and process information, and provide an advantage over a technologically inferior adversary, but against peer adversaries, their advantages become disadvantages such as overloading systems, limiting mobility. In any case, the time gained, even if relative, must always be used to gain an advantage, without any hesitation or delay. Optimising one's own internal processes including decision-making, activation time, reaction time, and at the same time disrupting the same processes of the adversary and thereby the adversary will relatively lose the initiative seems to be the most suitable way of gaining time.⁵⁷ The time factor can be considered fundamental in the hybrid operational environment. Documented by modern operations, where technologically advanced military forces were able to overcome large distances in a relatively short time, e.g. coalition invasion of Iraq (more than 500 km in 20 days)⁵⁸ or control a large country, e.g. Operation Serval in Mali.⁵⁹ In general, we could say that the ability to act faster than the adversary brings a decisive advantage. A numerical or spatial disadvantage can be partially or completely offset by the ability to more quickly achieve the assigned objectives in a limited time. The force factor (understood as available forces, e.g. military forces) represents, in its narrowest sense, the military instrument of power. Available forces are not only limited to military forces, but also to other components which are contributing to the overall success. In general, we could say that the greater the amount of available forces available compared to the adversary, the more freedom of action the commander has in hybrid warfare.⁶⁰

⁵⁷ VEGO 2009.

⁵⁸ Iraq War 2003–2011.

⁵⁹ SHURKIN 2014.

⁶⁰ EEAS 2015.

Holistic view of domains

We could consider the factors of space, time and force traditional. In contrast to them, the factor of information represents a factor that is inherently different from others. It is a consequence of the controllability of information, i.e. the possibility to significantly disrupt or direct the flow of it, and at the same time the indeterminacy and immeasurable nature of what information is. Information is always a source of power, but especially in the current information age, it can bring confusion and a source of system overload. A proper assessment of a force, space and time cannot be made without accurate information about all important aspects of the hybrid operational environment and operational situation. Accurate, timely and reliable information is fundamental to the decision-making process and it could also affect the morale, force cohesion and support of the population. Thus, the hybrid operational environment is an environment directly affected by the hybrid war and all instruments of power are applied in it. It contains all actors and their activities. It includes all physical and non-physical spaces and factors that are relevant to all domains (sea, land, air, space, cyber and information). The operational environment, and thus also the hybrid operational environment, is usually described as a set of interconnected elements, namely political, military, economic, social, informational and infrastructural, including physical environment and time, also known as PMESII-PT (hereinafter: PMESII-PT, to be described later in detail). By analysing PMESII-PT, it is possible to achieve an understanding of the hybrid operating environment, which creates conditions for synchronised and adequate creation of effects using instruments of power. By the correct application of instruments of power and additional capabilities aimed at creating effects on PMESII-PT elements, it creates the conditions for achieving the projected political outcome. This means that a thorough understanding of the hybrid operating environment is critical to the successful application of instruments of power, including the military one. It is essential that the military forces have an analytical tool in place to assess the operational environment to the required and possible extent. Although some authors claim that analytical tools evaluating the operational environment in a symmetric conflict cannot sufficiently analyse the operational environment in an asymmetrical conflict, we dare to argue that they can serve as a starting point for an overall understanding of the operational environment. And it is time that is the factor that will decide to what depth the crew manages to understand such a complex operational

environment.⁶¹ When choosing the appropriate analytical tool, care should be taken of its relative complexity. It should include as much of the overall operational environment as possible in its analysis steps. The chosen analytical methodology has to be able to describe all relevant aspects of the operational environment providing commanders and staff with a comprehensive understanding of it. A comprehensive understanding of the operational environment is necessary for supporting the planning staff activities and for shaping how the commander and staff conceptualise what relevant actors can and will do. The chosen analytical methodology has to be a continuous process consisting of sequential steps that ensures a systematic assessment of all relevant aspects of the operational environment and the relevant actors. In the first step we will describe and evaluate the operational environment, in the second step we will evaluate the actors in it. The analytical task for step one is to develop a geospatially based perspective of the operational environment overlaid with a cyberspace perspective and the information environment. The operational environment consists of four physical domains, a cyber domain and an information environment. Physical domains consist of land, air, maritime and space domains. Domains affect each other, and none of them can exist in isolation. Since the physical aspects of the operational environment are not homogenous, various land and maritime areas may require greater or lesser descriptions depending on the relative geographical complexity of the region. The information environment connects and penetrates through each domain.

The relationships between each domain and the information environment are shown in Figure 1. Each domain consists of physical areas that need to be identified and analysed. Physical areas include a defined operating area consisting of the associated areas of influence and interest that is necessary to conduct operations within the operational environment. Depending on the nature of the mission/operation, the balance of the analytical effort may not be equally distributed between the domains.⁶² Description of physical areas within the operational environment considers specific environmental factors. These factors include but are not limited to:

- terrain, topography, hydrology, meteorology, oceanography and space, surface and subsurface environmental conditions (natural or human-made)

⁶¹ NATO 2016.

⁶² Department of the Army 2019b.

- distances associated with the deployment and employment of forces, the location of bases and ports, other supporting infrastructure
- METOC and space environmental factors include the entire range of atmospheric (weather) phenomena, from the sub-bottom of the Earth's oceans to the top of the atmosphere and space environment (space weather)⁶³

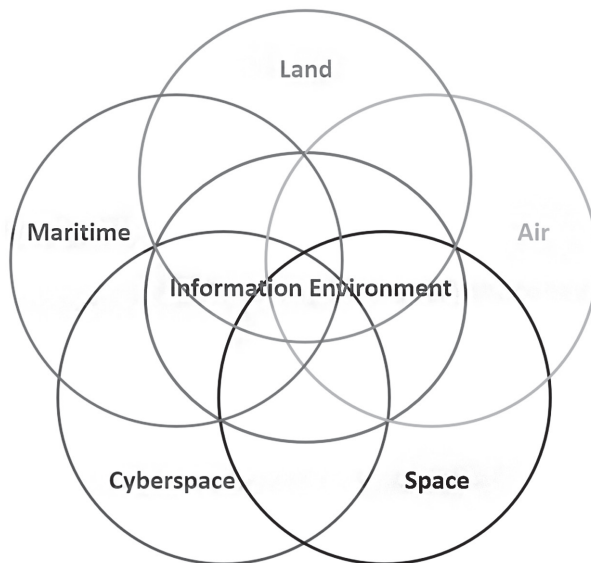


Figure 1: Holistic view of the operational environment

Source: Compiled by the authors

The land domain is the most frequently evaluated domain due to its high population density per square kilometre. Descriptions of the operational environment's land domain are focused on terrain features. Descriptions also include infrastructure aspects of the terrain as well as human and information dimensions.⁶⁴ Very important is to always consider the effects of weather as well as changes that may impact operations. It is also important to analyse the combined effects

⁶³ Department of the Army 2019b.

⁶⁴ SKALICKÝ–PALASIEWICZ 2017: 276–280.

of wind, temperature, humidity, sunlight, topography and precipitation, and their impact on a system or network. The results of land domain analysis provide us with the basis for determining which courses of action can best exploit the opportunities the terrain provides and how the terrain affects the actor's available courses of action.⁶⁵ The maritime domain is comprised of the world's oceans, seas, bays, estuaries, islands, coastal areas and littorals. In open ocean areas, distant landmasses and supporting shore infrastructure may impact operations primarily due to the range of an actor's systems and sensors. Littoral areas may contain geographic features such as straits or chokepoints that restrict operations. The analyst should be aware of the legal arrangements that apply to the actors in this domain.⁶⁶ The aspects of the maritime domain should be evaluated to determine how they impact relevant actors and courses of actions. The evaluation of potential key geography must be based on the degree to which such maritime features control or dominate the operational environment or provide a marked advantage. The locations of naval bases should be evaluated in relation to their ability to support sea control or amphibious operations. During amphibious operations, the evaluations of the maritime and land domains should be combined to identify amphibious landing areas that not only can be supported from the sea, but also connect with advantageous land avenues of approach leading to key terrain objectives.⁶⁷ The air domain is the operating medium for fixed-wing and rotary-wing aircraft, air defence systems, unmanned aircraft systems, cruise missiles and ballistic and anti-ballistic missile systems, which only operate in this domain. Aerial avenues of approach are different from maritime and ground avenues. Nevertheless, the air domain is partially influenced by surface characteristics. Additionally, the effects of weather conditions on the air domain are particularly crucial.⁶⁸ The space domain is the part of the operational environment for satellites, spaceships, space stations, air defence systems, and ballistic and anti-ballistic missile systems that operate within space. Actors that have access to the space domain are afforded a wide array of options that can be used to leverage and enhance capabilities. Every actor potentially has access to the space domain through the purchase of services.⁶⁹ Thus, the monitoring and

⁶⁵ ROLENEC et al. 2019: 33–40.

⁶⁶ Department of the Army 2019b.

⁶⁷ Department of the Army 2019b.

⁶⁸ Department of the Army 2019b.

⁶⁹ VYKLICKÝ et al. 2022: 3–20.

tracking of relevant actors' assets is necessary for a complete understanding of the operational environment. Space capabilities have proven to be significant multiplier when integrated into operations. Space capabilities include global communications; positioning, navigation and timing (PNT) services; environmental monitoring; and space-based intelligence, surveillance, and reconnaissance.⁷⁰ The importance of the cyber domain is significant today. Most of non-kinetic and kinetic actions too are conducted in the cyber domain. There is a prediction that the core operations of the next warfare generation will be conducted in the cyber domain. This domain consists of all interconnected networks of information technology, including systems and networks, which are separated or independent. The cyber domain encompasses all forms of digital activities. Each of the physical domains mentioned above has specific characteristics in which the cyber domain helps actors apply power or influence the operational environment. Operations in the operational environment are increasingly interwoven with or at times can be dependent on the cyber domain. Cyber as a domain go beyond the Internet and everything connected to it, including standalone and intermittently connected networks and other digital hardware and systems.⁷¹ A description of the information environment is paramount for a thorough understanding of the operational environment. The current state of the information environment, communications means and methods, sources, influencers, cognitive patterns, social-cultural perspectives, historical narrative and many other aspects are intrinsic to the operational environment. Publicly available information can provide insight into many factors affecting the operational environment. It can provide baseline information about public perception and immediate identification of events. The information environment is the aggregate of individuals, organisations and systems that collect, process, disseminate, or act on information and includes the cyber domain. Both friendly and adversary forces are aware of the significance and reach of information-related capabilities to gain an asymmetric advantage in the information environment.⁷² The domains make it clear how important it is to identify and evaluate the actors within the operational environment to include their capabilities and limitations, their current situation, centres of gravity, doctrine, patterns of operation, as well as tactics, techniques and procedures. Analysts need to identify all relevant actors within the operational

⁷⁰ Department of the Army 2019b.

⁷¹ Department of the Army 2019b.

⁷² Department of the Army 2019b.

environment that may positively or negatively impact the accomplishment of the operation. These actors may include, but are not limited to adversary forces, the populace or segments of the populace, government, non-governmental and inter-governmental organisations.⁷³

Analytical methodologies applied

Applied analytical methodologies should aid in determining the actor's doctrinal way of operating and observed patterns of operation or potential deviation from observed patterns under similar conditions. Analytical methodologies are normally completed prior to the operation, and are continuously updated during operations. They can be applied independently but can also be combined to provide a more comprehensive and holistic view of the operational environment. Analytical methodologies that could aid in determining and evaluating actors include, but are not limited to human network analysis, centres of gravity analysis and current situation.⁷⁴ For human network analysis there are two analytical methodologies that can be used. The first is political, military, economic, social, informational and infrastructural plus physical environment and time (PMESII-PT), the second is area, structures, capabilities, organisations, people and events (ASCOPE). The relevance of PMESII-PT elements and characteristics will depend upon the specific situation associated with each operation. Some of the characteristics that may be considered significant during a sustained humanitarian relief operation may receive far less emphasis during combat operations against a single conventional adversary. Therefore, a tailored approach is imperative for the analyst.⁷⁵ The methodology allows for adaptation to the specific operation and situation within the operational environment. Based on the mission analysis, analysts will need to decide on how to best optimise their use of time and intelligence resources. This may involve decisions on what part of the methodology they need to place the most emphasis as well as the application and internal sequencing of the methodology itself. PMESII-PT is used to describe

⁷³ SKALICKÝ–PALASIEWICZ 2017: 276–280.

⁷⁴ SPIŠÁK 2016: 136–141.

⁷⁵ SKALICKÝ–PALASIEWICZ 2017: 276–280.

the operational environment with eight interconnected elements which are known as operational variables.⁷⁶ The PMESII-PT factors include:⁷⁷

- Political – describes the distribution of responsibility and power at all levels of governance including formally constituted authorities as well as informal or cover political powers. Political factor includes advisors, governors, mayors, political interest groups, cabinet officials, courts and policy documents.
- Military – explores the military and paramilitary capabilities of all relevant actors such as enemy, friendly and neutral in a given operational environment. Military factor includes individual leaders at all levels, plans and orders, defence ministry, command and control headquarters, air defence systems, artillery maintenance facilities, ammunition storage points and key terrain.
- Economic – encompasses individual and group behaviour related to producing, distributing and consuming resources. Economic factor includes banks, corporations, trade unions, contracting firms, market-places, shipping and distribution facilities, smugglers, automated teller machines, commercial depots, organised crime activities, agriculture and internet-based companies.
- Social – describes the cultural, religious and ethnic makeup within an operational environment and the beliefs, values, customs and behaviours of society members. Social factor includes ethnic groups, clans, social media groups of interest, tribes, religious groups, unions, associations, sports clubs, schools, cultural centres, health and welfare facilities.
- Informational – describes the nature, scope, characteristics and effects of individuals, organisations and systems that collect, process, disseminate or act on information. Informational factor includes plans and orders, newspapers, newsletters, information ministry, television networks, computer networks, information technology centres, intelligence agencies, leaflets, postal facilities, radio stations, national or influential speciality magazines or periodicals, social media applications, and other existing information infrastructure and mass communication capabilities.
- Infrastructural – is composed of the basic facilities, services and installations needed for the functioning of a community or society. Infrastructural

⁷⁶ HRNČIAR 2018: 87–92.

⁷⁷ Department of the Army 2019b.

factor includes nuclear power plants, hydroelectric dams, gas pipelines, aqueducts, waterways, pumping stations, rail yards, airports, port facilities, relevant factories, hospitals, schools, civil defence shelters, garbage disposal systems, highways, bridges, tunnels, dykes, sewage systems, storm drains, global system for mobile communication masts and server parks.

- Physical environment – includes the geography and manmade structures, as well as the climate and weather in the area of operation. All products and analysis done in the first step could be used.
- Time – describes the timing and duration of activities, events or conditions within an operational environment, as well as how the timing and duration are perceived by various actors.

ASCOPE is an additional analytical methodology consisting of six elements that should be considered when conducting analysis. ASCOPE is typically used in conjunction with the PMESII-PT. ASCOPE is leveraged by the intelligence staff at any level to view the operational environment from the perspective of the populace. ASCOPE places emphasis on the cultural and human parts of the environment. PMESII-PT findings can be augmented with an ASCOPE-directed view of the same data, creating a more accurate and complete understanding of the operational environment. ASCOPE elements are:

- Area – includes districts, market places, picnic areas, irrigation networks, parks, squares, cities and rural areas.
- Structure – includes prisons, police headquarters, banks, churches, courts, roads, cell towers, municipal buildings, supermarkets and tollbooths.
- Capability – includes dispute resolution, recruiting, access, means of justice, maintenance, financing, governance, policing and disaster relief.
- Organisation – includes government organisations, non-governmental organisations, host nation forces, bankers, religious leaders, builders and criminal organisations.
- People – include governors, host nation security forces, bankers, gangs and contractors.
- Event – includes elections, kinetic events, drought, weddings, funerals and festivals.⁷⁸

⁷⁸ Department of the Army 2019b.

Combining PMESII-PT and ASCOPE into a PMESII-PT–ASCOPE Matrix helps to get an understanding of the operational environment centered on human networks. Normally analysts use a PMESII-PT–ASCOPE matrix for the identification and analysis of friendly, adversary, neutral, or other actors. Understanding the changing interactions of these actors with each other and how their relationships and interdependencies change over time helps to understand the operational environment. Based on the data from PMESII-PT–ASCOPE correlation analysis we can conduct human network analysis in order to visualise and describe the interaction between actors and their relationship to other nodes like regions, natural resources, municipalities, equipment and software, that all contribute to a holistic view of the operational environment. A network perspective is based on a node-link analysis. This helps the commander and staff to visualise potential or actual strengths weaknesses, interdependencies key nodes and centres of gravity. This visualisation along with other factors will contribute to the development and analysis of courses of action. To describe and display how each actor interrelates with other actors by using a network perspective helps intelligence analysts to understand the operational environment in a more focused manner.⁷⁹ Based on the network analysis we are able to identify the actor's centres of gravity. A centre of gravity is the actor's source of power and is essential for an actor's ability to influence the operational environment. The actor relies on it for resources, recruiting, support, freedom of action and movement, continued willpower and moral justification. If the centre of gravity is under pressure or damaged by another actor, the entire network will be affected. A centre of gravity is always linked to the actor's objective. If, at some point, the actor's objective changes, the centre of gravity does not necessarily change as well. Taking away an actor's access to a centre of gravity or impeding the function of it will always affect the network. However, a resilient actor may be able to revert to a different source of power once the original identified centre of gravity is no longer available or effective.⁸⁰ There are a lot of analytical methods used for the centre of gravity analysis like the strategy rings model or fractal analysis process. But the most effective method for analysts to identify an actor's centre of gravity is to use the CG–CC–CR–CV model:

- Centre of gravity (CG) – the source of power that provides moral or physical strength, freedom of action, or will to act.

⁷⁹ Department of the Army 2019b.

⁸⁰ SPiŠÁK 2016: 136–141.

- Critical capability (CC) – a means that is considered a crucial enabler for a centre of gravity to function as such and is essential to the accomplishment of the specified or assumed objective(s). It is described by using a verb.
- Critical requirement (CR) – an essential condition, resource and means for a critical capability to be fully operational.
- Critical vulnerability (CV) – an aspect of a critical requirement which is deficient or vulnerable to direct or indirect attack that will create decisive or significant effects. It is described by a noun.⁸¹

A centre of gravity typically will not be a single node in the system, but will consist of a set of nodes and their respective links. However, a single node might be considered a centre of gravity as an exception. For example, when the adversary senior military leader is also the political leader, and the nature of the adversary's political and military systems is such that the leader's demise would cause support for the conflict by other leaders in these systems to collapse. A proper analysis of an actor's critical factors must be based on the best available knowledge of how actors organise, fight, think, make decisions, and on their physical and psychological strengths and weaknesses. Analysts must understand an actor's capabilities and vulnerabilities, and factors that might influence an actor to abandon or change strategic objectives. Analysts must also envision how friendly forces and actions appear from the actor's viewpoint. Otherwise, analysts may ascribe to actors' particular attitudes, values and reactions that mirror their own.⁸² The current situation provides an understanding of the present context, including all actors and all PMESII-PT factors of the operational environment. At the operational level, it will consist of several displays and descriptions of all relevant perspectives of each actor, including desired end states, modus operandi, capacities, support and training level and all other relevant elements of the operational environment, to include the impact of politics, social and economic considerations. Intelligence processing (collation, evaluation, analysis, integration, interpretation) is done to extract relevant information to explain the current situation, its dynamic and changes from the historic situation.⁸³

⁸¹ Department of the Army 2019b.

⁸² SKALICKÝ-PALASIEWICZ 2017: 276–280.

⁸³ SKALICKÝ-PALASIEWICZ 2017: 276–280.

The analyst will need to consider the following factors in assessing the current situation of the actors:

- composition
- disposition
- capabilities
- tactics, techniques and procedures
- logistics
- combat effectiveness
- command and control systems
- personalities
- potential courses of actions
- other additional information and data

Conclusion

In this chapter we aimed to outline characteristics of the operational environment as a cornerstone for a package of possible military response options applicable in the context of hybrid warfare. Thus the authors firstly presented the frame of the concept into space, actors and methods commonly used. The need to respond to hybrid threats in a hybrid way, ideally proactive and not reactive was emphasised, which was followed by a discussion of the basic pillars of successful responses to hybrid threats. The formulated strategy to respond to hybrid warfare should in all circumstances be nationally apolitical and must be based on defined political goals. The goal of the strategy is to initiate military activities and identify the military outcome state, which is sometimes at odds with democratic politics, which is based on avoiding constraints and seizing opportunities. Politicians try to find ways to keep divergent interests in consensus, which means avoiding long-term and resource-intensive conflicts until absolutely necessary. Therefore, it is essential for military commanders to understand the essence and nature of politics and the interests of the political subjects who are leaders in the conduct of war, even hybrid war. It must be clear that the most fundamental aspect of military strategy in hybrid war is answering the fundamental question of how to effectively use military means to achieve political goals. Other instruments of power should be able to exploit success from all alternatives of conducting military operations and at the same time ensure a quick and decisive conflict resolution based on the use of new knowledge and ideas so that the strategic interests

of the state are achieved. The hybrid operational environment creates military instruments of power dilemma of balancing their combat capabilities with other capabilities. The development of military technologies allows commanders to look for alternative concepts of deployment. This means that while the armed forces must be able to conduct decisive combat operations against adversary armoured forces, on the other hand, they are more likely to be deployed in crowd control as part of peace support or humanitarian operations. Comprehensive preparation of the operational environment is a demanding and very responsible activity. It requires a systematic approach and the use of appropriate analytical methods, procedures and tools. The result of a comprehensive preparation of the operational environment is a set of information about the physical environment in each domain and an explanation of how the physical environment, including the weather, involves conducting any activities. The next result of comprehensive preparation of the operational environment is to identify all actors and their properties, identify the centres of gravity and describe the current situation of each actor. All results of comprehensive preparation of the operational environment will serve commanders to determine the correct military response.

Questions

1. Which are the challenges for the deployment of military forces in a hybrid operational environment?
2. Which domains HOE consist of?
3. What are the definitions and purposes of PMESII-PT and ASCOPE analysis during the Intelligence preparation of the HOE?
4. Which are the most common features of the concept of hybrid warfare?

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