

## 4. LESSONS LEARNED AND CONFLICTS HISTORY

# NEW RULES OF THE CONTEMPORARY WAR

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### ABSTRACT

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When examining security issues, the issue of war cannot be omitted, which is a source of enormous suffering, but also an incentive for technological innovation or a catalyst for social and political change. Although in the last decades the number of wars and their intensity has decreased, it still seems that they need a huge amount of money. It is also expensive to create weapon systems to ensure victory if a war occurs in the future. Discussions on what a war currently is are accompanied by the belief that it is distinctly different from wars in the past. Every age created its own art of war, which has changed in terms of measures, principles, and methods of fight over the centuries.

The aim of the article is to present new tools and ways of conducting military action in the face of new threats in the 21st century. In addition to describing the new conditions of warfare, non-state irregular armed forces as participants of modern armed conflicts has been presented. In the study, the topic of using modern technology, unmanned detection and destruction systems, precision weapons and stealth technology has also been explored.

### KEY WORDS

War, irregular armed forces, methods of conducting military activities, new technologies, precision weapons, stealth technology, unmanned systems of identification and destruction

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## Introduction

The world is now in the phase of sudden change. The turn of the 20th and 21st centuries was a time of general changes in most spheres of life. There is no doubt that the changes that are occurring in the present day also involve armed conflicts. With the development of military technology and changes

in the international security environment, it is justified to indicate necessary changes in the views on the use of armed forces in wars in the 21st century. Over the last few years we have seen the disappearance of "classic" wars, which were primarily determined by military force. Nowadays irreg-

ular armed forces have become the new element of armed conflicts and military interventions against them have entered to the global challenges of the democratic world. They are identified as a derivative of new security threats caused, among others, by terrorist organizations, fighting to achieve their goals. Faced with new threats, it was important for international security and the security of individual countries to examine the impact of modern military and information technologies on the nature and form of future armed conflicts and wars. Armed forces have faced the need to revalue their basic, classic concepts and organizational solutions. Battle field parameters are changing, we can see an increase of the combat capabilities of all types of armed forces by increasing the power, range, and precision of the weapon. Information and communication support develops, time to respond to threats is reduced, as well as a number of soldiers, and the use of new technologies and weapons plays a key role.

### Participants of the contemporary armed conflicts – non-state irregular armed forces

Changes in the environment of wars concern mainly new participants in armed conflicts, i.e. irregular forces. In classic wars, it was easy to identify an enemy, to assess his military potential, or his way of conducting military action. In irregular activities, it is very difficult, or often even impossible. When the enemy is irregular forces, the problem is also to define the boards of activity and the distinction between fighting militias and civilians. The irregular wars are also characterised by variable dynamics and intensity. There is no intense fighting with heavy fighting equipment, massive fire strikes or the involvement of numer-

ous troops. This was replaced by a range of asymmetric subjects, measures and impact tools, such as terrorist acts, civilian massacres, ambushes, suicide attacks, cyber-attacks, and even the use of weapon of mass destruction.

The definition – *the irregular forces* is not a new issue in the theory. In the literature of the subject, they are defined as units and formations that are not regular military units and include volunteer units, civic guards and guerrilla formation, subject to the person responsible for their subordinates, and respecting the laws and customs of war<sup>1</sup>. Members of irregular forms must distinguish themselves from the non-eminent population during the combat, and carry weapons openly. In theoretical terms, irregular formations are therefore part of the armed forces, but due to the specific conditions of conducted actions and tasks, they do not function in regular organizational structures, do not have uniform equipment and armament, and use specific tactics<sup>2</sup>. The issue of *irregular formation* requires reference to the *irregular actions* doctrinally defined by the Land Forces Regulations from 2008 as (...) *the type of combat actions conducted by specific means in the opponent's formation by tactical groupings created ad hoc, as required for a situation. These groups can be prepared in time of peace or created ad hoc during the war.*

By identifying an irregular war, it seems reasonable to compare it to a classical war. The obvious difference between a classical war and an irregular war is visible in the method of conducting the war. Significant differences between regular and irregular forces are also evident in the technique and methods of action.

<sup>1</sup> W. Więcek, Taktyka formacji nieregularnych, Zeszyt naukowy AON, No. 2 (95) 2014, p. 175.

<sup>2</sup> Słownik terminów z zakresu bezpieczeństwa narodowego, AON, Warsaw 2002, p. 77.

Tab. 1. Differences between traditional and irregular wars

	Traditional wars	Irregular wars
Participants	National armies and block alliances	Paramilitary groups, organized criminal groups, mercenaries, parts of the national army
Aims	National or block matters	Gaining identity, ethnic exclusion
Warfare	Vertical, hierarchical command, meaning of battles, extremist tendencies, advanced military technology	Distracted, directed against the civilian population, atrocities: rape, starvation, siege, the use of light weapons and landmines
Economy of war	Centralized, autarkic, total, full employment, high production	Open, decentralized, low participation, humanitarian aid, grey market, high unemployment, low production

Source: J. Czuputowicz, *Bezpieczeństwo w teoriach stosunków międzynarodowych*, [in:] *Bezpieczeństwo międzynarodowe*, ed. K. Żukowska, M. Grącik, Teoria i praktyka, SGH-Oficina Wydawnicza, Warsaw 2006, p. 78.

The basic forms of conducting irregular activities are diversion, liquidation, psychological attacks and ambushes, and thus almost the same as in guerrilla activities. The principles most frequently mentioned in the literature of the subject and at the same time, most important for the operation of irregular forces include initiative, the dissipation of forces and concentration of effort, surprise, mobility, flexibility of actions, avoidance of fighting, knowledge of the area and secret of activities.

From different, both intentional or unintentional reasons, irregular formations do not adopt an organizational structure based on transparent divisions. Depending on needs and capabilities, they may have a distinct hierarchical division, usually very complex or flattened, without a clearly defined higher level in hierarchy. Main representatives of irregular forces as adversaries of the armed forces in the irregular war should include partisans. They are treated as „[...] participants in armed conflict not belonging to the regular armed forces, operating as a rule, in the hinterland and behind the enemy areas in volunteer units, composed mainly of the local population”<sup>3</sup>. In addition to partisans, there are also terrorists. The fundamental differences between terrorists and partisans are manifested in the ways in which they prepare their attacks (terrorists

attack mainly civilian objects) and the territory of action. The place of dislocation is usually the territory of their own country but also places outside its borders. Attacks are usually made by members of small groups. Terrorists seldom maintain territory over a longer period of time, they only take it over for a very short time. In addition, terrorists are characterized by lack of uniformity and the fact that they do not respect the law of armed conflicts. As far as the guerrillas are concerned, the objects they attack are primarily important government buildings, places of military representation and police. The place of dislocation is the territory of their own country. Attacks are carried out by larger paramilitary and military formations. Partisans maintain a large part of the territory, sometimes they introduce so-called „free zones”. They often wear uniforms and may respect the law of armed conflicts.

## New conditions for conducting armed conflicts

The experience of past armed conflicts as well as the principles of martial arts are the basis for developing the rules of fighting by an irregular opponent. As it was previously stated, if the effect of irregular forces can be effective, it must be in line with the principles of effective learning – praxeology. The actions of the irregular forces are

<sup>3</sup> Mała encyklopedia wojskowa, Warsaw 1970, v. 2, p. 572.

based on the conviction that properly used force and stronger will, cleverness and persistence will overcome the much stronger military opponent. Such actions combine the tactics of guerrilla armed struggle with misinformation directed at undermining the enemy's (aggressor) belief in justice and the legitimacy of war<sup>4</sup>.

Irregular and terrorist activities, used against the state and its structures or against military forces (intervention, occupation) are characterized by:

- large disparities between military and economic potentials of conflict parties;
- different formal and legal status of parties, one party is not subject to international law;
- avoidance of a regular battle (confrontational fight) against the asymmetry of the forces and the threat of incurring losses unprofitable against possible benefits;
- maintaining the initiative by attacking the enemy (people, objects, equipment), with the surprise of place, time, means of attack, the scope of the attack includes critical infrastructure facilities, state power centres and its representatives, cyberspace, blackmail, misinformation, and propaganda;
- a different approach to how the armed forces are used by the involved parties (the overriding aim of the weaker party is to maintain armed activity and a potential threat, take offensive actions in unconventional forms, to involved and non-involved participants; and the aim of the stronger party is to suppress the opponent's activity (or elimination), apply the principles of the law of armed conflicts, protect non-aligned participants, limit the use of force to the minimum necessary);
- specific rules of action: initiative, surprise, dispersion, mobility and the flexibility of

activities, careful preparation of activities, avoidance of fighting and the secret of action;

- diverse causes of regular force and irregular conflicts (classical ideological, geopolitical, and irregular conflicts – causes in pursuit of obtaining political identity, taking control of the territories without isolating the new state and without building its structures);
- unlimited territorial coverage of irregular activities, such as terrorism<sup>5</sup>.

The fight of armed forces with irregular forces may last for months or years, but even for decades, and for the possible victory of the latter may come because they may gain advantage gradually in time and space, with the support of the public and the receipt of legitimacy to exercise the authority<sup>6</sup>. A crucial factor that irregular forces need for victory seems to be time. With enough time, irregular forces can be better organized, while with bigger space, these forces can choose where and when they want to fight. If the state hits the overwhelming force, the space allows the irregular forces to retreat and accept the fight only when conditions are more favourable to them<sup>7</sup>. On the other hand, the difficult terrain that restricts the manoeuvrability of the armed forces is, for lightly armed irregular forces, a tremendous opportunity for balancing the disadvantages in technology, organization and quantity.

After examining the rules of regular forces and the rules of irregular forces, it can be clearly seen that irregular warfare is much different from the classical war. Of course, some ways of fights are very similar. The difference between regular and irregular

<sup>4</sup> J. Karpowicz, *Wojny naszych czasów*, Zeszyt naukowy WSOSP, No. 2/2014 (23) p. 68.

<sup>5</sup> J. Karpowicz, *Wojny naszych czasów*, Zeszyt naukowy WSOSP, No. 2/2014 (23), p. 69.

<sup>6</sup> A. Wetoszka, J. Nowak, R. Bartnik, *Użycie lotnictwa w walce z siłami nieregularnymi*, Wyd. WSOSP, Dęblin 2011, p. 36.

<sup>7</sup> A. Wetoszka, J. Nowak, R. Bartnik, *Użycie lotnictwa w walce z siłami nieregularnymi*, Wyd. WSOSP, Dęblin 2011, p. 36.

activities is mainly about time and regulation of activities. Regular activities are characterized by long-term impact on the opponent and the fact that they are generally run by large military groups. They are always planned and almost always they are run by regular troops of the Armed Forces. Irregular activities are characterized by a short impact period and high mobility of small troops. Breaks between fights are definitely longer than fighting itself. They involve avoiding a frontal clash with a stronger enemy and attacking with surprise, while maximizing the use of defensive terrain and weak elements in the enemy forces. Significant differences between regular and irregular forces are also visible in the technique and methods of action. The weapon in an irregular war can be almost everything. Irregular forces, apart from using conventional weapons, such as small arms, explosives materials, and mortars, often use the unconventional measures, such as traps, exploding buildings and installations, or even passenger aircraft. In their use there can also be portable nuclear charges and various, often very dangerous chemical preparations. The choice of weapon depends primarily on accessibility. It is also important to be effective. In countries where communication infrastructure is well developed, and the availability of various civilian technical devices facilitates the continuous diversification of the means and means of attack, irregular operations are quite facilitated.

## New tools and methods of conducting military action in the face of new threats

The characteristic feature of armed conflicts of the first decade of the 21<sup>st</sup> century is huge disparities between the parties, both in the equipment and technological level of the fighting forces. A regular army,

with open access to technology, supporting governmental political forces, fights with irregular troops that lead the guerrilla warfare and the actions of a rebellious nature. However, despite the crushing prevalence, regular troops face many tactical problems<sup>8</sup>. An irregular enemy uses forms of military action such as directed against legitimate authority, a society that supports that authority and the international forces that try to save the peace, with avoiding decisive military action.

Fighting with the irregular enemy, often referred to as anti-partisan action, is now a rapidly growing martial art. The experience gained during the fight against an irregular opponent makes it easier and allows us to point out certain traits that characterize this type of clash. Fighting with irregular forces takes place on a multi-dimensional scale and forms several multi-faceted relationships in the field of military and non-military activities. We can assume a number of characteristics which can be used to counter this opponent by regular forces in a way adequate to the characteristics determining the rules of operation of irregular forces. The variability of the actions taken to defeat an irregular opponent and their specifications and purpose allow for the identification of several characteristic principles, such as initiative, activity, continuity, speed of reaction, surprise and cooperation.

Fighting in new conditions of armed conflicts and with a new enemy may be conducted not only by the aforementioned methods. It is also run through, for example, searching, chase, getaway, ambush or surrounding of the enemy. Combat tactics will be used depending on the tactical situation, and on the terrain conditions, the nature of the enemy's actions, and the

<sup>8</sup> W. Więcek, *Zwalczanie przeciwnika nieregularnego*, AON, Warsaw 2010, p. 3.

capabilities of the troops. Ways of carrying out activities can occur independently or can be interrelated. In order to function effectively in these types of battles, modern military command systems have the following requirements:

- the ability to plan activities and make decisions and to transfer them to troops in the best possible way, in the shortest possible time;
- the ability to choose and use the means and systems of combat in an optimized way to the adopted objective and operating conditions;
- the ability of the subordinate forces to fight and their co-operation and security, adequate to the development of the situation;
- the ability to schedule tasks and control the forces and results of activities to the extent necessary for the planning and response process and to fight with the enemy<sup>9</sup>.

Moreover, in order to effectively counteract irregular forces, programs were implemented to create the necessary tools for armed fight in the form of air-space reconnaissance and attack systems, adapted for selective elimination strategies.<sup>10</sup> Wars in these environments require adaptation of some of the armed forces to the new military, organizational, training, equipment and command conditions. Strategic assumptions about war operations in the environment of new threats show changes both in operational art and in tactics. They are focused on finding new weapons and support systems for the battlefield. The means and tools used in land, air and sea wars are rapidly transformed.

In irregular operations, land forces will probably be forced to fight dispersed in dif-

ferent, even far regions. This will result in the need of adequate information, logistics and combat support. The well-known classical role of indirect attacks and attacks supporting the main forces will very likely continue to be very important also in this advanced new system of armed conflicts. They may include disturbances in the enemy manoeuvres and stopping and destroying their units with precision weapons. All these changes can lead to a very functional and effective counteracting of the new threats. Surely the land army will continually develop and improve its means of action.

Also, the tools of airspace wars are subject of the significant and rapid changes. The increasing technical and technological advancement of modern aircraft makes them extremely useful, particularly in reconnaissance and surveillance operations. And as it is well known, a good recognition is a key part in the course of warfare, and can often determine victory or defeat. So far, air space has been dominated by manned aircraft, and it is inevitable that they will be replaced by unmanned platforms that are difficult to detect. Unmanned aircraft will likely play an increasingly important part in warfare. They will be able to operate without the help of an enemy-guarded airspace for a very long time, and thus can provide a very useful surveillance of a wide area. Unmanned combat aircraft with a long range of operation can be used to detect and destroy targets in critical conditions of devices and communication networks. They can conduct electronic fighting, recognition and precise targeting.

Currently there is a worldwide tendency to move various tasks to unmanned cameras. The technical modernization of the Armed Forces of the Republic of Poland also moves in this direction. In the perspective of year 2030 they are one of the most im-

<sup>9</sup> J. Karpowicz, *Wojny XXI wieku*, Wyd. WSOSP, Dęb-lin 2014, p. 248.

<sup>10</sup> J. Karpowicz, *Wojny naszych czasów*, *Zeszyt naukowy WSOSP*, No. 2/2014 (23) p. 65.

portant components of the organizational structure of our Armed Forces. The Armed Forces of the Republic of Poland will have manned and unmanned land platforms (remotely controlled vehicles), air and naval vehicles equipped with modern navigation and sighting systems and precision weapons of destruction, as well as non-lethal weapons of mass destruction<sup>11</sup>. Our armed forces have potential opportunities to use modern combat systems, and in the future the latest advanced flight technology. This also applies to unmanned aircraft. Today unmanned aircraft perform many tasks in the contemporary battlefield<sup>12</sup>.

Work on unmanned aircraft weapon systems is now focused on increasing the precision of bullets, reducing their size and weight, increasing the range of operation and reducing the costs. All of these indicate that these actions will end in the creation of a different BSP-class fleet capable of hitting the air even in favour of single low-level subdivisions. It can be seen among others in the American plan of BSP development in Land Forces, which outlined the necessity of arming of all five groups of unmanned aircraft, with mini- and micro- unmanned aircraft. The work in this area is very advanced and not just in the United States<sup>13</sup>.

Another area of military action is the sea. The ability to dominate on this surface can be ensured primarily by introducing defence missions to the coast and seas of precision manoeuvring missiles and rocket weapons with an extremely wide range and high precision of fire and additionally unmanned aerial, reconnaissance and combat platforms. The sea battle will certainly

need to develop systems that will be able to early warning, use advanced technology of surface and underwater sensors, network-connected, both active and passive. The future fleet may be armed with missile ballistic missiles and supersonic missiles and unmanned combat robots. Autonomous unmanned works will perform offensive and defensive mine and reconnaissance operations. In addition, they can be used to take over or deactivate an enemy's underwater intelligence units<sup>14</sup>. The main tasks performed by the watercraft that carry out clashes at sea are the defence of the coast and the sea, air and sea operations and submarine operations, and in these areas, there will be significant changes and technological improvements.

At this point it is also worth mentioning that an important matter is to direct attention to the links between the economy and the war. The economy has always been a material base for the military. Economic military problems have accumulated with the advancement of the army and the art of war, and distortions and difficulties in support have increasingly affected the functional and efficient operation of military operations<sup>15</sup>. The concept of the commercial-economic war is understood as a set of military and non-military actions aimed at weakening and disorienting the country's economic and defence potential. The reason for doing this type of activity is both political and strategic factors. Such non-military influences are widely used in international relations and are acceptable by the international law<sup>16</sup>. In the commercial and economic war, it is important to monitor the global rankings of armaments companies,

<sup>11</sup> A. Rurak, *Możliwości zastosowania bezzałogowych statków powietrznych*, Zeszyt naukowy WSOSP, No. 2/2014 (23) p. 95.

<sup>12</sup> A. Rurak, *Możliwości zastosowania bezzałogowych statków powietrznych*, Zeszyt naukowy WSOSP, No. 2/2014 (23) p. 96.

<sup>13</sup> A. Truskowski, *Bezzałogowy aparat latający – efektywność i zagrożenie*, Zeszyt naukowy WSOSP, No. 1/2015 (24), p. 127.

<sup>14</sup> J. Karpowicz, *Wojny XXI wieku*, Wyd. WSOSP, Dęblin 2014, p. 265.

<sup>15</sup> M. Skarżyński, *Z historii wojny gospodarczej*, [in:] *Współczesna wojna, handlowo-gospodarcza*, J. Plączek (ed.), Wyd. Difin, Warsaw 2015, p. 15.

<sup>16</sup> J. Plączek (ed.), *Współczesna wojna, handlowo-gospodarcza*, Wyd. Difin, Warsaw 2015, p.11.

which allows for observing the changes in the organizational and ownership structure of the defence sector of a given country or group of countries<sup>17</sup>. The ranking created by the SIPRI (Stockholm International Peace Research Institute) examines the medium-term trends of the defence sector in all notified countries except China (no data available). The latest ranking released in 2015<sup>18</sup> proves the many years of dominance in the global armaments market of companies from the United States and Western Europe. These are the manufacturers of state-of-the-art weapons systems on all types of platforms: marine, land and air, and in the future, they will undoubtedly develop their systems also in space.

## Modern technologies and types of weapons

Today's state armed forces have been prepared and organized, mainly for armed conflict in interstate conflicts. Combating the non-state participants of conflict includes many other challenges, both in terms of combat measures as well as their range. Combat methods and of course costs are also important. The development of previously known weapons is evident, but the frequency of introducing new combat measures is also increasing. A rapid development of precision weapons, aerial and space reconnaissance, the development of modern stealth technology, and unmanned detection and destruction systems can be noted.

## Weapons and precision ammunition

Combat systems that provide detection, tracking, targeting, and target destruction are the indispensable elements of the contemporary battlefield. The development of this type of system has led to the search for

ever more effective long-range weapons. The development of means for detecting objects in the air and at sea allows, above all, for avoiding surprise, gives the initiative, and the advantage of the party that will first detect its enemy. A new generation of offensive guided weapons, including bombs and missiles, was equipped with electro-optical, laser or electromagnetic radiation self-healing detection systems. These weapons, at first not with a long range of action, turned out to be very accurate and allowed the tactical forces to attack a wide range of targets with the highest precision.

The use of targeted ammunition began during the Vietnam War. At that time, about 1% of this ammunition was used in relation to all combat measures. The Gulf War already yielded 9% of the consumption of targeted ammunition, whose accuracy increased several times. The airspace war in the Balkans demonstrated the superiority of precision weapons over the gravity. In these activities, the consumption of this type of ammunition was already 69% of the total combat capacity.

In the future wars, the forecasts show a significant advantage over the use of weapons and precision in warfare, reaching up to 90 percent. The key technological and strategic trends described in the *Theater Warfare 2020* concept were as follows:

- weapons and nuclear deterrence will continue to be needed at a strategic level;
- conventional wars will be conducted below the strategic level;
- targeted precision weapons will be the basis of the offensive potential, and will not dominate defensive actions;
- stealth technology is widely defined, and not only remains important, but it may become a central survival factor in the Centric Data Communication of the battlefield based on ammunition<sup>19</sup>.

<sup>17</sup> Ibidem, p. 394.

<sup>18</sup> <https://www.sipri.org/databases/armsindustry>, (accessed 04.10.2016).

<sup>19</sup> J. Karpowicz, *Wojny XXI wieku*, Wyd. WSOSP, Dęblin 2014, p. 95.

Precision-Guided Munition (PGM) and *Crius* maneuvering munitions during the last decades of the twentieth century were among those often used in wars. Precision-Guided Munition is a homing missile capable of receiving and transmitting data in-flight, enabling the co-ordination of a missile's accuracy by verifying the target's real-time coordinates and even changing the attacking object when a more cost effective target is detected. *Cruise* missiles can fly at low altitudes, even below the lower limit of the radar beam, and in some cases, hide behind obstacles. Missiles with new hiding functions will be even less visible for radar and infrared detectors. Modern missiles can be programmed to approach and attack targets in the most effective way. Many missiles can, for example, attack simultaneously from different directions. In addition, LACMs may use in-flight circumvention of areas of danger to get safely to their destination, thus avoiding radar and anti-air defence installations<sup>20</sup>.

Moreover, new measures and recognition systems and combat management tools have far fewer restrictions on time, less time to set aims, generate co-ordinates, and plan attacks. In the last quarter of the century, solid objects and devices can be quickly and efficiently attacked using modern PGM. In view of these trends, high-mobility mobile targets, such as large mechanized units and surface vessels – are likely to become increasingly vulnerable to detection and thus easier targets for attack.

## Stealth technology

The stealth technology is probably not new anymore. Even the first military planes used camouflage and flew low over the ground so that they would not be detected. Over the years, the detection of objects such as

the bombers B-2, F-117, Sea Shadow, F-22, F-35 or YF-23 Black Widow II fighter jets has consistently declined. Stealth technologies are widely used in aviation because this military aircraft must perform a silent recognition or unnoticed attack. More and more often they are also used in the navy, and the latest combat ships, thanks to the technologies they use, are often able to escape quickly from the watchful eye of the radar.

The most important element of military invisibility is shape and suitable material. Stealth aircraft have a special shape that can suppress or rebound electromagnetic waves in the right direction so that they cannot return to the source. Stealth aircraft are therefore devoid of any protruding parts – its outer surfaces do not even have the slightest bumps or hollows. The hull of the airplane is built of a number of neatly connected flat structures that produce minimal radar echoes and dissipate radiation. Without proper modification of the plane shape, radar waves will not be dispersed and will return to the opponent who knows who he is dealing with. That is why many modern battle planes use mostly flat or sloping surfaces. It is also important to use materials that absorb radar (RAM). Without them each plane will be completely defenceless and completely exposed to the fire of the enemy. One of the most detecting items of the aircraft's elements is the radar, however with the masking of its traces, you can more or less deal with it. The greatest challenge, however, is the enormous amount of heat accumulated around the engine or emitted by friction, or even the simplest electronics. That is why the exhaust nozzles of F-22 and B-2 planes are so flat that they can partially dissipate heat. Builders rely on the implementation of a similar system in the latest F-35, which due to budget cuts, has been equipped with traditional nozzles. Here, however, there is another possibility, that

<sup>20</sup> Ibidem, p. 100.

is cooling exhaust gases by cold air. Scientists believe they will soon be able to create a completely new type of aviation fuel with better thermal properties.

Here it is time to ask whether total invisibility is at all within the reach of human technical capabilities? One day, people will probably manage to manipulate the falling light that it will be possible to hide the object in an electromagnetic bubble that will be invisible to a human eye. However, many specialized apparatus cannot be fooled. Equipment interfering with the proper operation of a radar and thermal traps launchers and radiolocation commonly used in the military are the simple attempts to deceive your enemies. These measures disturb enemy electronics, minimizing the acoustic signals or magnetic field of the attacking object. In practice this means maybe a few seconds of "true" radar invisibility, and even such a short time may be key to the success of the planned mission<sup>21</sup>.

## Conclusion

A new enemy, new operating conditions, and new threats, all of which resulted in significant structural, technological and tactical changes in the classical armed forces. It is estimated that changes in the environment of war include, above all, situational awareness, communication, information transmission, scope, precision, speed and the secret of activities, and what is also important, automation. Technological progress leads to huge changes in military systems. This progress and new technologies are primarily responsible for changing battlefield parameters and increasing the combat capabilities of all types of forces by increasing the power, reach and precision of weapons, information and communication support, increasing mobility, reducing time to respond to threats and of

course the efficiency. In a war environment, we deal with the process of revolutionary change. There is a transformation of the means of conducting wars, new tools, new means of fighting. The adaptation of new advanced tools, the development of information acquisition and collection systems, and digitization and robotization processes play an important role. There is a noticeable increase in the combat capabilities of all types of forces. The power, reach and precision of the weapon have also increased. The number of troops decreases by increasing their efficiency and effectiveness. We can notice the proliferation of unmanned technologies and new types of weapons, which will provide the potential to change not only the tactics of action but the whole military strategy.

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<sup>21</sup> <http://www.airforce-technology.com/57350/technologie-stealth/>, (accessed 02.09.2016).