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This paper uses the recent conflicts involving the Russian military in eastern Europe to illustrate an emerging change in the character of modern warfare. These actions have demonstrated possible future operating requirements. This paper explores the continued relevance and modernization of the United States' Military capabilities informed by the future challenges and against a "near-peer competitor." This paper will examine Russian strategy, particularly hybrid warfare in a contemporary context, utilizing examples from the Ukrainian conflict. Subsequently, this paper will review U.S. military capabilities to determine where the U.S. military needs specific improvements to counter Russian hybrid warfare.

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MASTER OF MILITARY STUDIES

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**The World's Best Military Needs a Facelift:  
The Implications of Contemporary Russian Strategy on the U.S. Military's Preparedness**


SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF MILITARY STUDIES

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## Executive Summary

**Title:** The World's Best Military Needs a Facelift:  
The Implications of Contemporary Russian Strategy on the U.S. Military's Preparedness

**Author:** Major Roe S. Lemons Jr., United States Marine Corps

**Thesis:** The evolving nature of Russian military strategy in modern warfare has the U.S. military at a disadvantage. The U.S. military must innovate in information operations, and innovate new tactics and equipment in modern combat to counter future threats.

**Discussion:** This paper uses the recent conflicts involving the Russian military in eastern Europe to illustrate an emerging change in the character of modern warfare. These actions have demonstrated possible future operating requirements. This paper explores the continued relevance and modernization of the United States' Military capabilities informed by the future challenges and against a "near-peer competitor." This paper will examine Russian strategy, particularly hybrid warfare in a contemporary context, utilizing examples from the Ukrainian conflict. Subsequently, this paper will review U.S. military capabilities to determine where the U.S. military needs specific improvements to counter Russian hybrid warfare and the developments it uncovered that are relevant to modern warfare.

**Conclusion:** A study of the use of Russian hybrid warfare demonstrates that the U.S. military is not yet prepared to counter the emerging threats. To better ready itself, the U.S. military needs to improve its Information Operations capability, ground based indirect fires, and improve its survivability of mechanized forces on the modern battlefield.

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## Introduction

Russia's military intervention in Eastern Europe indicates a new, more assertive foreign policy, demonstrating its confidence and strength for NATO and the world. The recent operations in Ukraine and—to an extent—Georgia are reminiscent of the Soviet era and have increased global awareness of Russia's geopolitical designs.

Russia's return to assertive attempts to dominate neighbors and bring them back into its sphere of obedience has not been a sudden event, rather a steady process of escalating pressure. This process has run in parallel with the growth in Russia's confidence and strength. . . Russia began testing a series of hostile levers against the newly independent states on its western periphery. Of these, energy cut-offs are the best known; but others include economic warfare, financial and social destabilization, cyber offensives in various forms and more.<sup>1</sup>

This synergy between the national and military leadership during Russian aggression may cause significant problems to NATO partners including the U.S. military. From a geopolitical perspective, Russian aggression in Eastern Europe has been seen before most recently with the Soviet Union. What is alarming is the conduct and application of military strategy that seems to be a different approach from Russia and needs to be analyzed. The U.S. military is coming off over fifteen years of warfare in both Iraq and Afghanistan. While the U.S. has gained significant combat experience, a majority of it was fighting a counter insurgency and was not against a near-peer competitor. These experiences could have atrophied high end conflict capabilities or created capabilities that will not translate well against a comparable adversary. The Russian's application of hybrid warfare demonstrated a significant increase in capability against another state actor. The evolving nature of Russian military strategy in modern warfare has the U.S. military at a disadvantage. The U.S. military must innovate in information operations and innovate new tactics and equipment in modern combat to counter future threats. The purpose of this paper is threefold: (1) to better understand hybrid warfare from a historical context and recent activities, (2) to highlight U.S. military key vulnerabilities, and (3) to recommend improvements or changes to U.S.

military doctrine and strategy.

## Context

### Disinformation

Russian hybrid warfare is based on the evolutions of the concept of disinformation.

Disinformation comes from the Russian word *dezinformatsiya*, which refers to techniques to mislead and influence policy, attitudes and public opinions through deception and other means.

The hallmarks of disinformation are called the four Ds: dismiss, distort, distract, and dismay. The first recorded use of disinformation was in Imperial Russia when, during “the 1917 Revolution, the Tsarist secret police employed similar deceptive techniques, using foreign agents . . . to sow dissent among émigré groups. . . by covert subsidies to selected journals.”<sup>2</sup> During the Cold War, the Soviets codified the practice and created a disinformation department within their intelligence services.

Russians refer to the release of disinformation as “active measures” which covers a wide variety of covert and special activities. David Kux, a career foreign service officer, explains:

Overall, where active measures fit in the Soviet framework may be better understood by considering the whole spectrum of Soviet foreign policy endeavors through the optic of “white,” “gray,” and “black” operations. Normal diplomatic, trade, aid, and informational efforts can be considered “white” or overt activities. “Gray” activities are those involving communist fronts, foreign communist parties, “clandestine” radio stations, or well-known media outlets for disinformation. While not officially acknowledged to be Soviet sponsored, semi- overt “gray” activities are widely known as under Soviet direction and control. In contrast, “black” activities involve genuinely clandestine operations: the use of agents of influence, spreading false rumors, duping politicians and journalists, and disseminating forgeries and faked documents.<sup>3</sup>

The disinformation departments were employed mainly by the proxy wars being fought between the Soviets and U.S. The disinformation included fake news stories of murder, espionage, and assassination attempts that attacked the credibility of the U.S. and sometimes involved minimal covert action in the “gray area.” As the cold war continued into the 1970s and 1980s, the

sophistication increased and covert actions increased until the fall of the Soviet Union. However, the tactics, techniques and procedures of disinformation were inherited by the successors of the Soviet leadership and refined and incorporated into the foundations of what would become hybrid warfare.

### **Hybrid Warfare**

The concept this paper refers to as hybrid warfare has many other names: ambiguous warfare, gray area, and non-linear war, to name a few. Russian leadership is adamant that they do not practice a hybrid war strategy, so the term is a western construct that is used to explain Russian behavior. “[T]his concept is nothing new, that aspects of hybrid war mentioned by Western analysts have been practiced since warfare began.”<sup>4</sup> The Russian use of hybrid warfare comes from a position of perceived military weakness. “[T]he Kremlin understands its position of military weakness vis-a-vis the U.S. . . . and thus avoid[s] direct confrontation.”<sup>5</sup> Russia understands that it is at a disadvantage in a conventional sense and compensates for this perceived disadvantage subtly and indirectly, refining and improving its strategies born from Soviet disinformation tactics.

In the Chechen conflicts of 1995 and 1999, Russia tried, with limited success, to control the narrative of the conflict by dominating the flow of information. “[O]fficials then realized with dismay that, in information terms, they were still outmaneuvered by a notionally weaker and less capable enemy that was more adept at use of the newly arrived internet, where ‘even a small and relatively impoverished adversary could achieve information dominance over a stronger opponent.’ ”<sup>6</sup> The military identified its failure in the information realm, but did not improve upon it to its fullest extent following the Chechen conflicts. However, the Russian leadership identified deficiencies in its capabilities.

In February 2007, Vladimir Putin gave a speech in Munich asserting that, “Russia would no longer accept the U.S.-led, unipolar model of international relations and that Russia would implement its own independent foreign policy in pursuit of its geopolitical interests.”<sup>7</sup> President Putin stated to the world, and more specifically NATO, that Russia would begin more aggressive military operations. Shortly after this statement, Anatolyi Serdyukov was named as the new Russian Minister of Defense.

Before any significant changes could be implemented, the Russo-Georgian war broke out in the August 2008. The purpose behind the war was to achieve Russian geopolitical objectives with the annexation of Abkhazia, weaken Georgia, and prevent NATO from expanding. Although the war was a success for Russia, it also identified significant issues with its military strategy and capability. “Despite Russia’s success in evicting Georgia from South Ossetia and Abkhazia, Russian forces suffered from outdated equipment and poor training when fighting the more technically advanced, Western equipped Georgians.”<sup>8</sup> This began a large-scale overhaul of Russian military capability and strategy. “In 2008, the administration raised military spending by almost a third and overhauled the armed forces and defense industry in order to tackle Russia’s post-Cold War military decay.”<sup>9</sup> In November 2012, General Valery Gerasimov replaced Serdyukov as Russian Minister of Defense and is credited with clearly articulating the practices the west refers to as hybrid warfare.

General Gerasimov’s concept appealed to the Russian military leadership when he published “The Value of Science is in the Prediction: New Challenges Demand Rethinking the Forms of and Methods of Carrying out Combat Operations” in *Voyenno-Promyshlennyy Kurier* (VPK). In his article, General Gerasimov posited a new way of approaching warfare in a holistic manner, utilizing all the sources of national power while combining information, regular and irregular forces to achieve objectives. Hybrid warfare is a mix of Soviet-era methods combined

with unconventional tactics and information warfare to achieve political-military goals. In other words, hybrid warfare advocates the use of special operations forces to encourage insurrection while using local media, social media, and fake news to influence a targeted audience.

An important aspect to understanding Gerasimov's view of the military and non-military entities is, "[t]he leveraging of all means of national power to achieve the states ends is nothing new for Russia, but now the Russian military is seeing war as being something much more than military conflict . . . war is now conducted by a roughly 4:1 ratio of non-military and military measures."<sup>10</sup> What the West perceives as ways to avoid war, such as diplomacy, economics, and information, Gerasimov advocates as ways to conduct war.

"The nature of hybrid operations makes it very difficult to detect or even determine ex post facto when they begin, since confusing the enemy and neutral observers is one of its core components."<sup>11</sup> The purpose of hybrid warfare is to confuse and persuade an enemy to take actions one has predetermined him to make. The ultimate goal of hybrid warfare is to take advantage of weakness or gaps (information, diplomacy, military, or economic) in other countries.

Gerasimov's concepts are best explained through its six main phases of implementation (see Figure 4). The first phase is the incitement of protest and violence by ethnic Russians in target states, the so-called "fifth column." This has the effect of setting conditions for follow-on operations. In phase two, "Russia uses economic warfare and diplomatic/political pressure to intimidate, coerce, punish, and undermine governments in target states as a means of further weakening them."<sup>12</sup> In phase three, Russia infiltrates a country with Special Operations Forces (Spetnaz) or the "little green men" to activate sleeper networks and further incite discord. In phase four, Russia begins to strategically deploy forces to begin overt military campaign to seize objectives and terrain.<sup>13</sup> In phase five, Russia begins its information/disinformation campaign of deception aimed at creating doubt about their intentions, which delays any response by outside

actors. Finally, in phase six, Russia enacts measures to reduce the view of conflict while consolidating its successes and ensuring a government is installed that is friendly to Russian interests. It is important to keep in mind that these phases are not always sequential and could occur simultaneously or not at all, dependent upon the situation.

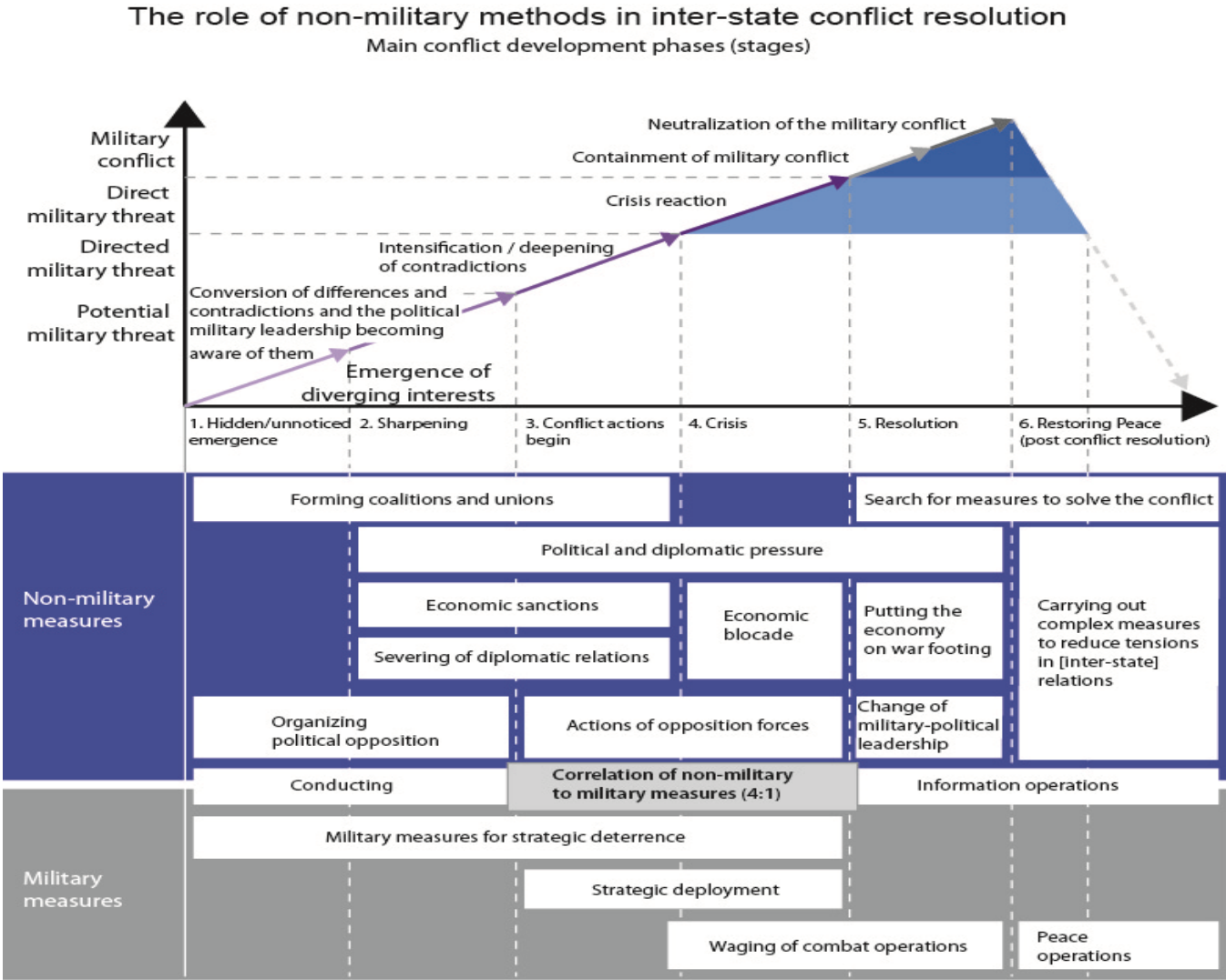


Figure 1. PHASES OF HYBRID WARFARE.<sup>14</sup>

Gerasimov’s vision of current and future operations leans heavily on the use of information warfare and technological superiority. Through his use of lethal and non-lethal means in a synergistic package, he has created a competitive disadvantage for the U.S. military. To go along

with Gerasimov's advocated adaptation in warfare, the Russian military is also upgrading its conventional military capability. As Gerasimov states, "War in general is not declared. It simply begins with already developed military forces. Mobilization and concentration is not part of the period after the onset of the state of war . . . it proceeds long before that."<sup>15</sup> This sentiment from Gerasimov is just another example of the unity of Russian strategy that ties in all the elements of national power in its conduct of war and is an innovative way of force deployment. This synergy in strategy creates many challenges for the U.S. military that is fiscally restrained, has a reduced footprint in Europe, and has been overstretched with conflicts in Iraq and Afghanistan. With the use of Hybrid warfare by Russian forces in recent conflicts the U.S. military should make observations to ensure they are able to counter any potential threats.

### **U.S. Key Vulnerabilities**

The Russian and Ukrainian conflict (Russo-Ukrainian conflict) that is now in its third year had non-traditional origins when compared to conventional warfare. What began as a relatively bloodless superpower intervention in Crimea morphed into a proxy separatist insurrection in the Donbas area and then turned into a year-long "real war" as western militaries would define it.<sup>16</sup> The Russians displayed dominance with disinformation and information operations, conventional and unconventional warfare, and the use and support of proxy forces during the conflict between the Ukrainian military, Ukrainian separatist forces, and the Russian military. Ultimately, tensions with the conflict were reduced with two cease fires, Minsk I (September 2014) & II (February 2015). Although Minsk II is in effect today, hostilities still exist between the Ukrainians and Russians and has the attention of the international community. The Russo-Ukrainian conflict caught much of the world by surprise because it involved state on state violence in Europe, which called into question the future security in the region. Additionally, the conflict highlighted Russia's pivot towards hybrid warfare that had been previously under-appreciated and

misunderstood—often muddled with the U.S.’s own constructs of “fourth generation warfare,” “non-linear-warfare,” or “hybrid war.”<sup>17</sup>

The U.S. military—from recent operations going back to 2001—is accustomed to dominance on the land, air, and sea. Only considerations in the land and air are relevant to recent Russian operations. Additionally, the U.S. military—during that same time—was primarily focused on relatively low-intensity combat in counter-insurgency environments. The purpose of this section of this paper is to highlight the U.S. military’s three key vulnerabilities to developments that emerged from the Russo-Ukrainian conflict. The effective coordination and use of information operations, employment ground based indirect fires, and survivability of mechanized forces.

### **Information Operations**

The U.S. military is most vulnerable to Russian hybrid warfare’s extensive use of highly effective employment of Information Operations (IO). IO is fundamental to the Russian hybrid warfare methodology. In her article on IO in the Ukraine, Mara Snegovaya asserts:

Russia’s concept of hybrid warfare relies heavily on information warfare . . . Russia modern information warfare adapts Soviet reflexive control to the contemporary geopolitical context. “Reflexive control” is defined as a means of conveying to partner or an opponent specially prepared information to incline him to voluntarily make the predetermined decision desired by the initiator of the actions.<sup>18</sup>

Russia has a long history of employing effective IO which they now have adapted to contemporary operations called Reflexive Control Theory. Employed at all levels of war, Reflexive Control is the means of conveying to a partner or an opponent specially prepared information to incline him to voluntarily make the predetermined decision desired by the initiator of the action.<sup>19</sup> This methodology is uniquely Russian, with the emphasis being to “control” the adversaries’ decisions. In comparison, the U.S. military’s approach is to attempt to deliver a narrative and inform through IO, as observed in an article by General Ralph Baker which asserts, “information operations are

activities undertaken by military and nonmilitary organizations to shape the essential narrative of a conflict or situation and thus affect the attitudes and behaviors of the targeted audience.”<sup>20</sup> U.S. military doctrine defines IO as “the integrated employment, during military operations, of information-related capabilities in concert with other lines of operation to influence, disrupt, corrupt, or usurp the decision-making of adversaries and potential adversaries while protecting our own.”<sup>21</sup> The vulnerabilities to the U.S. military’s approach is in its lack of integration and capabilities.

Most leaders in the U.S. military recognize that integrated information operations are critical for success. However, observations from recent U.S. military operations in Iraq and Afghanistan demonstrate that there is not an integrated IO plan that can be utilized by the joint force. Doctrine provides little guidance to commanders which creates a disjointed and sometimes myopic approach to IO, where commanders are left to figure it out for themselves on the ground. The lack of integration leads to numerous, and sometimes contradictory, messages by units operating in close vicinity to one another. For example, in Iraq in 2009-2010, the Army’s 1st Armored Division developed an IO plan around five themes with eight supported messages per a theme.<sup>22</sup> However, there was no mention of this plan being integrated with adjacent units or into the overall narrative of the U.S. military’s strategy at the time. This led to IO being limited to gimmicky programs such as posters, fliers, radio messages, and leaflet drops, which only had the result of informing the targeted audiences in tightly localized areas.

The disconnect in the U.S. military’s IO integration could be exploited by the Russian’s superior capabilities. Russian IO is directed from the top levels of government and utilized among others: Russian television (RT), social media, and cyber capabilities that are synchronized in their efforts. The purpose of these efforts is to launch covert and overt IO on a mass scale, thereby messaging to global, regional and local audiences. It has shown the ability to rapidly spread

carefully crafted lies and disinformation to generate discord at local and international levels.<sup>23</sup> The current U.S. capabilities in IO have nothing to compare to the capabilities that the Russians possess. Although the Joint Integrated Operations Warfare Center (JIOWC) has responsibility to support Combatant Commanders (COCOM) they do not synchronize the messaging. The COCOM's are responsible for implementing and IO but they cannot compete with the state sponsored capabilities the Russians can leverage.

### **Ground Based Indirect Fires**

Current national security advisor, General H.R. McMaster succinctly states the U.S. military's problem, "[w]e are outranged and outgunned by many potential adversaries,"<sup>24</sup> Historically, the U.S. military has balanced this problem by having a robust air power capability in conjunction with its ground based fires. The military has adhered to the principle of "combined arms," meaning that each supporting arm complements another's in execution. The implementation of hybrid warfare as witnessed may have mitigated capability. The U.S. has relied historically upon air delivered fires to overcome its numbers disadvantage but this may not be the case in the future. "We made the assumption several years ago that we'd be able to achieve and maintain air supremacy, the war in Ukraine puts that in doubt."<sup>25</sup> It was further observed in the Ukraine that modern overlapping dense air defense kept Ukrainian Air Force close air support and attack helicopters out of the battle due to their lack of sophisticated electronic countermeasures and air defense suppression capabilities.<sup>26</sup> These capabilities uncovered the critical deficiencies in munitions, assets, and observation of fires by unmanned aerial vehicles.

The U.S. military's experience in counter insurgencies has created an over-reliance on precision munitions, collateral damage concerns, and distributed operations. The purpose for U.S. indirect fires is to provide overwhelming massed and surprise fires to its adversaries with crushing effects on equipment and will. Because of the focus on collateral damage, the U.S. military's

capability in this domain has significantly degraded. The entire U.S. inventory compared to the Russians of ground based fires assets is not very robust and includes a small mixture of cannon and rocket assets:

- 3 types of Cannon Howitzers: M119 105mm howitzer with a range of 19kms firing traditional high explosive rocket assisted ordnance and the M777 155mm howitzer and M109 155mm self-propelled howitzers both with max ranges of 30km firing high explosive rocket assisted ordnance.
- 2 types of wheel and track based long range rocket launchers: High mobility artillery rocket system “HIMARS” and Multi-launch rocket system “MLRS” which both have max ranges of 80kms firing a standard GPS guided unitary round.

Comparably, the Russians have placed in emphasis on MLRS since the Cold War due to its range and lethality. In the mid-1980s the Russians maintained a ratio of one MLRS system to four traditional artillery systems. This is a proportion Ukraine had maintained in its artillery park. However, the Russians have substantially increased their ratio of rocket launchers to artillery so that, in the Donbas, it is now three MLRS to four traditional tubes. The Russian emphasis on the massive use of area fire is in stark contrast to the Western preoccupation over the last decade with precision-strike.<sup>27</sup> This trend as a result to hybrid warfare is highlighted by the 5 types of MLRS systems and capabilities the Russians used in just the Russo-Ukrainian conflict:

- BM-21 *Grad (Hail)* - original 122 mm 40-round mounted launcher mounted on a Ural-375 chassis, rocket range 20km firing a traditional round with high-explosive;
- BM-21-1 *improved Grad* - a 122 mm 40-round launcher mounted on a Ural-43201 truck with new rocket with 50 percent increased range, satellite navigation, automated fire control, and auto-laying system firing a new version with DPICM as well as canister sub-munitions (HEAT, Anti-tank, mines);
- TOS-1 - a 220 mm 30 round launcher mounted on T-72 chassis, with a range of 6km specializing as a flame thrower of thermobaric warheads;
- BM-27 *Uragan (Hurricane)* - 220 mm 16 round launcher, with a range of 35km capable of firing a wide array of munitions including; DPICM, cluster mines, anti-tank munitions and thermobaric warheads;
- BM-30 *Smerch (Whirlwind)* - 300 mm 12 round launcher with a range of 90km, canister capable of carrying DPICM, sub-munitions, top-attack self-guided munitions and thermobaric warhead.<sup>28</sup>

Although, this lack in assets and capabilities is significant, capability of munitions in the U.S. arsenal is even more disturbing. Philip Karber describes the history of the munition gap as:

In the 1980s, the US introduced an entire new family of artillery sub-munitions—DPICM (Dual-Purpose Improved Conventional Munitions), artillery and MLRS delivered cluster mines and top-attack munitions. It was widely believed that, since we had them and the Russians did not, this was a unilateral advantage and it gave Western forces 4–10 times the effectiveness of traditional high-explosive munitions. Evidence from Ukraine is that now this asymmetry has been reversed.<sup>29</sup>

The use of sub-munitions at bare minimum compensated for the difference in assets between the U.S. and Russians and, in most cases, gave the U.S. a marked advantage in capability. This advantage became a weakness once Secretary Gates directed the U.S. to observe an international convention against the use sub-munitions and clustering munitions due to concerns of collateral damage during third world conflicts. The result is an entire generation of advanced conventional munitions being purged from the U.S. military's stocks.<sup>30</sup> The Russo-Ukraine conflict shows that Russia is moving in the opposite direction of the U.S.

The U.S. military is at a distinct disadvantage in regards to fire support assets and munitions capabilities. The U.S. military has been focused on distributed operations and utilizing both cannon and rocket precision munitions, with a reliance on aviation fires. The only significant improvements have been towards precision munitions with minor upgrades to fire support assets. U.S. military artillery units sometimes struggle with conducting large scale exercises that require them to mass comparable to their Russian counterparts. The Russians have been able to improve upon their munitions capabilities in the form of cluster munitions and also validated their focus of MLRS assets to support hybrid war. Russian artillery and MLRS have utilized advance munitions which caused eighty-five percent of all casualties in the Ukraine. For example, at Zelenopillya, in a combined MLRS fire strike that lasted no more than three minutes, two Ukrainian mechanized battalions were virtually wiped out with the combined effects of top-attack munitions and thermo-

baric warheads.<sup>31</sup>

The next development is the use of unmanned aerial vehicles (UAV) for the observation of fires. The U.S. has enjoyed almost unilateral employment of UAVs during its recent conflicts using them for primarily reconnaissance and strikes of high value targets. Of note, Russian UAVs do not yet have the ability to conduct a strike. The Russian approach is based on coordination to speed up the “kill loop” with the focus on massing fires. The Russo-Ukraine conflict was the first time that UAV employment was observed in signaling numbers by both sides.<sup>32</sup> During the Russo-Ukrainian conflict the Russians used at least fourteen types of UAVs in conjunction with indirect fires. The Russians emphasized tactical/operational ranges to identify targets, coordinate multiple sensors, and massed a strike with high lethality from indirect fires.<sup>33</sup> The unique approach they used established a “groupment” of UAVs to ground-based assets based on like capabilities that could confirm a target, send a kill order through a well-organized command, control the system for coordination, and deliver the massed strike quickly.

- Very long-range strategic surveillance high-altitude UAV flying along the border and Ukrainian southern coast;
- Long range higher-altitude fixed wing drone flying over Ukrainian positions beyond Brigade rear area;
- Medium-range fixed wing drone used in target acquisition and real-time engagement with less than 15 minute response time, associated with Urgan and Smersh Multiple Launch Rocket System
- Short-range fixed wing drone particularly associated working with BM-21 MLRS targeting;
- Very short-range tactical quad-copter used for scouting defense positions and post-strike Battle Damage Assessment (BDA).<sup>34</sup>

As an example of the effectiveness of this system note that in the Russo-Ukrainian conflict, after an overflight by a drone that identified a Ukrainian position, a target was destroyed within 15 mins by a Russian BM-21 MLRS system, then the drone returned to the position and conducted an immediate BDA.<sup>35</sup> The Russian use of drones for an aerial observer is very innovative and has been proven effective in the Ukraine. In short, the strength of the Russian approach is its ability to

deliver rapid massed fires against a typical area target with an intensity and speed of target location not seen on any modern battlefield.<sup>36</sup>

The key components of the Russians tactical approach to coordination of fires are speed and massing of fires. In contrast the U.S. use of drones and fires is primarily concerned with target discrimination, which takes time, and the precision employment of fires usually by the armed drone itself. There is no organization or formation in the U.S. military that has groupments of drones and ground based fires that is as effective as the Russian organization. At best, training conducted between UAVs and artillery is an ad hoc organization- or unit-level endeavor to improve the capability. Furthermore, with the U.S. military's experiences in counter-insurgencies that sometime produce large signatures of troops at large bases and patrol bases alike this creates a significant concern especially considering the lethality of previously mentioned strike at Zelenopillya destroying to two mechanized battalions.

The Russian-Ukrainian conflict demonstrated the U.S. military's key vulnerabilities regarding fire support. The U.S. has inferior numbers in fire support equipment and sometimes in capability. Russia's focus on MLRS capabilities has provided them with an advantage on range and lethality when compared to the U.S. capabilities. The distinct advantage the Russians identified through hybrid conflict was with cluster munitions. This was further highlighted as a deficiency when paired with the Russian's usage of observation via UAVs which focuses on speed and the ability to mass on their adversaries. The tactical and operational problems these developments present can be accounted for by the observations of the Russian's employment during the Russo-Ukrainian conflict.

### **Survivability of Mechanized Forces**

Light infantry fighting vehicles (IFVs) have gained increased emphasis in the U.S. military and around the world since the Cold War, prioritizing mobility and fire-power over survivability.

Seventeen of the U.S. Army's thirty Brigade Combat Teams are built around a mechanized capability based on IFVs. However, the use of armor in the Ukraine identified significant shortfalls the IFVs will have on the modern battlefield. Armor played a pivotal role for both sides in the Russo-Ukrainian conflict and was essentially a draw because both sides' tanks were equally protected due to the prevalence of explosive reactive armor (ERA) on all employed tanks. ERA essentially defeats all single warhead anti-tank guided missiles (ATGMs). Neither the Ukrainian or Russian forces had access to the U.S. military's dual tandem warhead ATGMs such as the TOW or Javelin missile systems, making the primary anti-tank weapon in the Ukraine the main gun of the tanks combined with direct fire artillery and rendered infantry ineffective against heavily armored vehicles like tanks. The increase in tank survivability is inverse to IFV survivability. The belligerents in the conflicts observed the primacy of tanks and turned their weaponry on light infantry vehicles and transports with devastating effects. This problem was captured poignantly in the Ukraine by the increased lethality of artillery munitions, medium caliber cannons, ATGMs that had catastrophic effects sometimes killing or severely burning everyone aboard the IFVs.

The current stable of IFVs in the U.S. is aging and falling behind in survivability requirements on the modern battlefield. General McMasters stated "we have no current major ground combat vehicle development program underway . . . the Bradley fighting vehicle . . . will soon be obsolete . . . as anti-tank weapons outstrip their armor . . . but they will remain in the Army inventory for the next 50 to 70 years."<sup>37</sup> The U.S. military has been improving its fleet of IFVs and for purposes of this paper they are identified as the U.S. Army's M-2 Bradley, Stryker, and the USMC's Light Armored Vehicle (LAV). Much like their Ukrainian counterparts, they are lightly armored but mount powerful medium sized cannons they give them disproportionate lethality to survivability on the battlefield. After it was identified that tanks were nearly omnipotent on the battlefield, both sides turned their weapons to IFVs with astonishing observations:

- Troop losses were so high soldiers on both sides prefer riding on top of the vehicle as opposed to riding in it;
- Assaults tended to be conducted with dismounted rather than mounted infantry; and
- The vehicles mounting the automatic cannon tended to be used in an over-watch suppressive fire role rather than exposed forward.<sup>38</sup>

Although the IFVs had the mobility to keep up with the tanks, they lacked survivability once a determined defender with advanced weaponry—such as ATGM or artillery DPICM—was encountered. The results were catastrophic kills of IFVs and ultimately led the Russians to have to completely change tactics leaving the remainder of the force vulnerable due to the IFVs failure.

Although the U.S. military had challenges in its own right with its IFVs in both Iraq and Afghanistan due to improvised explosive devices (IED) and in some cases ATGM attacks, it did not experience the sophistication and coordination from a uniformed force that was experienced in the Ukraine. The Ukrainian IFVs did not have armor protection when faced against Russian mechanized forces utilizing ATGMs, artillery and MLRS fire power. Even when IFV tactics were adjusted to account for the increased lethality on the battlefield it unfortunately degraded the capabilities and purposes that IFVs bring to the battlefield in form of mobility with firepower. The U.S. military employs there IFVs in their mechanized formations in a similar fashion as the Ukrainians and have significant lessons learned on how to organize and prepare for a mechanized fight on the modern battlefield.

### **Recommendations**

The Russo-Ukrainian conflict should focus the U.S. military on emerging trends that could be experienced in future conflicts. This conflict was between two near-peer states and revealed how the Russians would utilize hybrid warfare on a modern battlefield. The conflict followed the construct that Gerasimov designed and lays out a framework of how his construct will appear in practice. It displayed the prominence of information operations and how it truly drives Russian

actions, and showcased the increased modernity in Russian capabilities and technology. Most importantly, it has allowed the U.S. to examine its vulnerabilities in information operations, indirect fires, and survivability of IFVs and make recommendations to mitigate current U.S. military challenges.

### **Information Operations**

The most significant improvements that the U.S. military has is in the IO realm. Russia's superiority in this realm is due to history and its unified IO construct that truly incorporates IO into a unified message from the top of government to the tactical unit on the ground. Russia also has the advantage to utilize active measures—"lie"—which is acceptable in Russian culture. In order for the U.S. military to develop a viable counter to Russian disinformation, it should be truly synchronized throughout the joint force, improved through professional military education, and employed in all training exercises.

Although the JP 3-13 stresses the importance of IO and has doctrinal procedures and organization, there is no true unifying command. Each service has an institution which is equivalent of an IO command but each service conduct IO differently according to their own needs. The Joint Information Operations Warfare Center (JIOWC) currently "supports" the combatant commanders IO needs. The JIOWC needs to be the supported institution in an information age in order to insure a synchronized IO concerns from the national level down to the tactical level. If this does not happen, the U.S. will continue to be outmatched with multiple and conflicting messages when compared with the Russian's use in hybrid war.

Next, Information Operations should be taught at every level of officer professional military training. Intelligence and information drive operations and currently it is not addressed at in any Army Basic Officer Leadership Course (BOLC) or its equivalent the Marine Corps—The Basic School (TBS). IO is only minimally addressed in both Company level PME for both the

Army and Marine Corps at no more than two hours of instruction in schools that are six and ten months respectively. It should be addressed and covered progressively throughout an officer's career to increase understanding of the planning requirements that IO requires.

Finally, the only way the U.S. military will improve in its IO capability is by repetition and implementation. Information operations should be treated like one of the six warfighting functions and accounted for in all exercises at all levels. Currently, IO is typically only addressed at the battalion level and higher which puts the U.S. military at a deficit. By implementing IO tasks into junior leaders training and exercises it would increase their understanding of how to implement IO which would increase junior leader's capabilities and the force as a whole.

### **Ground Based Fires Refinement**

The Russian displayed significant capabilities with their indirect fire capability in the form of munitions and their tactical groupment of UAVs with ground based fires assets. Russia's increase in capability is alarming, especially in an environment that the U.S. military's expectation of air superiority may be threatened. This threat can be mitigated by a material, organization, and tactical solution. The U.S. military needs a replacement cluster munitions such as DPICM, UAVs in the Artillery structure, and a "Re-green" on survivability techniques on the battlefield.

Since an improvement or replacement to both artillery and MLRS is not a realistic option, very soon the U.S. military needs a viable replacement for DPICM. Cluster munitions allow more lethality to be obtained by fewer munitions fired. Removing DPICM from the ground based fires has decreased its capabilities while at the same time increasing its conventional munitions expenditure and logistical requirement. This occurs due to the need to increase the amount of munitions on a target to attempt to achieve the same effects a cluster munition would have with fewer rounds. The U.S. military should request a rescinding of the restrictive policy letter signed by former secretary gates on the restriction of usage of cluster munitions with a dud rate above one

percent. This is a self-imposed restriction that has created a distinct disadvantage on the battlefield. Additionally, the military should make it a priority for research and development for a replacement to a lower dud producing cluster munition for ground based fires.

Next, U.S. artillery units should have UAVs within their structure and organization. The triad of fires has always been the brains, brawn, and eyes. The brains was the fire direction center to coordinate, the brawn was the guns or launchers that employed weaponry, and the eyes have traditionally been Forward Observers (FO). UAVs should be added to the FO structure with artillery units. Currently, in both the Army and Marine Corps, there is no organic UAV structure within the Artillery structure. In the Army, there is limited UAV structure in infantry organization but most of the Army's support with UAVs is provided by the United States Air Force (USAF). The Marine Corps has an even more limited structure of small UAVs in the infantry which most of its UAV support provided by Unmanned Aerial squadron (VMUs) which are structured in the Marine Air Wing. This bifurcation of capabilities results in an unfamiliarity between U.S. military UAVs and artillery. In order to train to have the extraordinary effect that the Russians experienced in the Ukraine with the UAV/Artillery groupment, the UAV structure needs to move into the Army's and Marine Corps' artillery structure. This will enable the tactics, techniques, and procedures that are required to be developed and implemented.

Finally, U.S. military ground units need to "re-green" and return to training to the basics of survivability. Since 1950, in particular, no American soldier has died to enemy air attack. Since 1950, U.S. ground forces could count on American command of the air. Indeed, since 9/11, even small patrols that got into trouble could generally rely on precision-guided airstrikes to blast them a way out of it.<sup>39</sup> This lack of threat from enemy air when paired with the U.S. military's focus on counter-insurgency has produced complacency on basic survivability techniques such as camouflage netting and constant movement on the battlefield to avoid detection. This is an easy

fix and requires commanders to adhere to survivability requirements in training and readiness manuals that were written based on a peer competitor, not an insurgency force. This requires ground forces to be vigilant and avoid presenting a large signature to an enemy that has a ground, electronic and airborne surveillance capability.

### **Improvements to Mechanized Force Survivability**

Mobility on the battlefield is a key requirement to the U.S. military now and in the future. The vulnerability of IFVs that was uncovered in the Ukraine is disturbing. Much of the U.S. military's doctrine on mechanized warfare is based on tanks and IFVs complimentary nature to support one other. IFVs provide tanks additional fire power and maneuver with the ability to employ dismounted infantry when needed. By not addressing and improving on the challenges that IFVs have in an increasing lethal environment makes the entire mechanized force vulnerable. This problem can be addressed by augmented armor, tactical spread load of personnel, or a new IFV variant.

The most potentially cost effective solution would be to augment the current fleet of IFVs with additional protection. The addition of bar "grates" or "gates" around vehicles gave stand-off protection for single warheads of RPGs and other handheld rockets but not against larger ATGMs, 30mm cannon or top-attack artillery rounds.<sup>40</sup> The U.S. military is familiar with these make-shift efforts that they also utilized on IFVs in both Iraq and Afghanistan. However, for more lethal threats mentioned above it would benefit to have reactive armor developed for IFVs that will enable them to operate in close proximity to armor with increased survivability.

Another solution to the survivability problem of IFVs in a lethal environment is to spread the number of infantry over more vehicles to reduce the loss of manpower during a catastrophic loss of a vehicle. The reality is similar to World War I when weapon capabilities exceeded the tactics of the times. Using this reality could be a pragmatic solution that would decrease the loss of

life while maintaining capability across the mechanized force. This technique was used with some success during the Ukrainian conflict with some success when the Ukrainians spread an infantry squad across two IFVs. This reduced the squad single vehicle vulnerability, maximized dispersion, and allowed one vehicle to provide over watch with increased overall security.<sup>41</sup>

Lastly, the phenomenon of disproportionate vulnerability of IFVs relative to tanks has been understood for some time. The solution may be a new heavier variant of IFV. The U.S. military should revisit the program of an IFV based on a M-1 Abrams Tank chassis with the engine in the front with a heavily protected infantry compartment in the rear, replacing the turret with an automatic cannon. This is the direction that both the Russian and Ukrainian forces are researching from their own experiences in the Russo-Ukrainian conflict.

### **Conclusion**

The U.S. military has always tried to predict the next conflict that it should be prepared for. When major combat operations ceased in both Iraq and Afghanistan the military began to search for the next war that it should be organized, trained, and equipped for. Russia's aggression in eastern Europe should provide a blueprint for the future challenges the U.S. military may find on the modern battlefield. Russia has designs on once again being a major player in Europe and in the world. Russia's use of hybrid warfare leans heavily on disinformation (information operations) to cloud its adversary's perceptions of its objectives as they began operations almost clandestinely. This is then augmented by significant improvements in technological capabilities in what the U.S. military would call conventional warfare. Studying the Russo-Ukrainian conflict demonstrated some vulnerabilities in current U.S. capability against Hybrid warfare.

There is a significant gap in doctrine and capability in information operations. With disinformation being the key to hybrid warfare, the U.S. must emphasize and improve upon this

capability. The Russians displayed an expertise in ground based fire support that has not been seen on the battlefield in sometime. This highlighted the need for the U.S. to modernize its assets, munitions, and to consider changes to its organization structure. The Russian's success also demonstrated the lethality that a modern battlefield presents when engaging a capable near-peer adversary. Mobility is still important but survivability by mechanized forces was put into question. The U.S. will need to increase its capability and survivability with its mechanized forces in order to compete in the future operating environment. Although, the US has vulnerabilities to a Hybrid threat by conducting an analysis of recent Russian operations they can ensure they are properly prepared to thrive on the next battlefield.

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