

STRATEGI PERANG SEMESTA

Journal of Modern Warfare and Defense Strategy



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Open Access



2022 Strategi
Perang Semesta



Published at
31 December 2022

How to cite this article:

Kartomo, A., Legionosuko, T., & Risman, H. (2022). Analysis of the Russia-Ukraine war based on Giulio Douhet's airpower theory and as the best practice for Indonesia's Air Force. *Strategi Perang Semesta*, 8(2), 111-120. <http://doi.org/10.56555/sps.v8i2.1512>

To link to this article: <http://doi.org/10.56555/sps.v8i2.1512>



ANALYSIS OF THE RUSSIA-UKRAINE WAR BASED ON GIULIO DOUHET'S AIRPOWER THEORY AND AS THE BEST PRACTICE FOR INDONESIA'S AIR FORCE

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Abstract

The Russia-Ukraine war is a conventional war that happened in the modern era. The war shows that airpower is dominant in attacking strategic targets. High precision missiles use to avoid civilian casualties even though they still happen. From the perspective of airpower, it is exciting to analyze according to Giulio Douhet's theory. The result and discussions from the Russo-Ukrainian war from an air power perspective show that Douhet's theory is still relevant, but some adjustments are needed. Nowadays, attacking before declaring war breaks the war law. Making civilian casualties is against a human right. Another adjustment is due to technological advances in air power, so air power is a strategic target at the beginning of the war. This paper uses a descriptive-analytical method by analyzing data obtained from open sources.

Article history:

Received: September 13, 2022

Revised: October 1, 2022

Accepted: November 2, 2022

Keywords:

Airpower
Douhet
Russia
Ukraine
War

Introduction

The Russo-Ukrainian war is exciting because it happens in the 21st century. The war shows maneuver of conventional military force dominantly by use of air power and land power. Russo-Ukrainian had close ties with the Soviet Union and the Warsaw Defense Alliance. Russia and Ukraine were the core countries of the Warsaw alliance. In Ukraine many Soviet's Union defense facilities were built in Ukraine's territory. Some of the military weaponry systems are from the same product. However, the two countries closeness does not guarantee that there will be free from war. It may be valid from the wise sentence that there are no everlasting friends, but what the everlasting is a national interest.

War began first in 2014 Russia invaded Crimea. The bitter Crimea war continued to the East Ukraine region in Donetsk and Luhansk (Donbas). Donbas has tried to separate from Ukraine. Ukraine is uncomfortable with Russia and trying to turn to the Europe Union. The European Union reflects the North Atlantic Treaty Organization (Nato) alliance. Ukraine tends to Nato members to secure Ukraine, and it looks like nine countries' ex-Soviet Union joined the Nato alliance. For Nato, Ukraine is an opportunity to expand its influence in Eastern Europe. The rivalry between Russia and Nato finally broke out in Ukraine on February 24, 2022, and Russia attacked Ukraine.

War has occurred with striking military force in vice versa. The dominant military action in this war is air power. Air power is meant to attack, but air power is also the primary attack target. Air power is a strategic weaponry system and, at the same time, a strategic target. Air superiority fiercely contests daily to make land force and sea power opportunities. Air



power does not only monopolize by the air force but spreads over to the land force and sea power. Air power is about aircraft and missiles launched from land or the sea.

The airpower doctrine was first developed by Giulio Douhet, who worked in the air service power in the Italian army. Douhet used aircraft in a war for the first time in the Italian-Turkish war in 1911. In this first role, aircraft were used for air surveillance, transportation, determining artillery weapon placement, and the most phenomenal bombing tasks. The use of aircraft in this war strategy was noted by Douhet, who then concluded that the aircraft's primary role should be the bombing function. Douhet theorized bombing strategic targets such as metropolitan cities, central government, and national industry. Strategic bombing would destroy the enemy's fighting motivation and shorten the war's duration.

This paper will focus on the Russia-Ukraine war since February 24, 2022. The discussion is limited to aspects of air warfare or the use of air power. A tool to analyze is Giulio Douhet's theory of water power. Is the Douhet Theory still valid in modern air wars that are taking place in the 21st century?

Method

This paper uses a descriptive qualitative method. Data are taken from information media, journals, books, reports, and statements from the official. The data are analyzed qualitatively by classifying and giving codes related to a research question. The analysis results are then used for the report.

Results And Discussion

Airpower Theory

Giulio Douhet (1869-1930) was a strategist who founded the air power theory. The invention of the airplane in 1903 by the Wright brothers changed the war strategy. Aircraft taking part in the war was a revolution in war strategy; before the invention of aircraft, war dominance on land power and a small amount of sea power. Aircraft use is called a revolution in war strategy because aircraft operates in the third dimension. The third dimension is the space as expanding the land and sea. A helpful tactic in land warfare was the aircraft's altitude and speed. High altitude makes it easy to see the enemy and attack them. With high speed, shock power is obtained for sudden attacks. The vastness of the sky made defense nearly impossible, so the essence of air power was to attack. Aircraft can fly over enemy troops to reach the back enemy's lines and attack from the weak section.

Giulio Douhet is an Italian army officer. At that time, airpower was part of the land force. Douhet worked in the airborne division of the Italian army during the Italian-Turkish War in 1911. He used this war experience to develop a theory of the function of air combat. In his book titled *The Commandments of the air*, he stated the urgency of the states to have air power. Air power was adequate to carry out the first attack in the war. Douhet argued that aerial capabilities should be used before a formal declaration of war (Douhet, 2019, p. 12). This air attack ensures victory gets faster, more decisive, and demoralized to shorten the sea or land campaign that can potentially be protracted.

Airpower can be used in all combat functions. Airpower also is used to carry out bombings on enemy strategic targets. Douhet believes that airpower can dispel an enemy's fighting intent once its center of gravity (COG) is destroyed. Aircraft can attack enemy COGs in the form of government control centers, military control centers, national production



centers, and metropolitan city infrastructure. If the attacked country has a robust early warning air defense system, the aircraft cannot be sure of a specific target.

Douhet predicted that future wars would ignore the distinction between civilians and military personnel and that wars would justify bombing targets on civilians, declaring total war. In the future, war will not be bound by the notion of civilized war behavior. To support his theory that war is won by neutralizing the will of the enemy country to fight back, the most effective way is to attack the city. Douhet wrote that victory will smile on those who anticipate a change in the character of war, not on those who wait to adjust once the changes occur (Douhet, 2019, p. 27). Douhet believed that such a strategy would shorten the war significantly by minimizing war casualties, as enemy nations were forced to surrender more quickly. Douhet argued that the State should establish an independent air force separate from other armed forces.

According to the airpower theory from Douhet, this doctrine could break down into three key points that can be abbreviated as follows: (1) To ensure victory, it is necessary to conquer and command the air to gain air superiority; (2) the advantage of speed and elevation in the three-dimensional arena of air warfare has made it impossible to take defensive measures against an offensive air strategy to suppress enemy air defenses; (3) air power should be used against the enemy's center of gravity or the enemy's vital center, the enemy's centers of population, government, and national industry as the enemy's center of gravity (Winn, 1991).

Rusia's Air Power

Rusia airpower (IISS, 2021, pp. 105–108) Air force is 165,000 personnel, Strategic Rocket Force 50,000 personnel, Airborne 45,000 personnel. Structure Russia's air power distribution to every service army, Navy, Marine, and Aerospace Forces. The Navy they have Strategic Rocket Forces which operate 37 ICBM regiments. Nuclear ICBM with 336 nuclear warheads. The Russian Navy has a Long-Range Aviation Command with four fighter squadrons with long-range bomber types. Aerospace defense command with air defense capabilities with the primary weapon Surface air missiles S-400 and S-300. The army they have surface-to-surface missiles and also air defense. Naval aviation consists of Fighter regiments, fighter ground attacks, anti-surface warfare, and anti-submarine warfare. The Naval also has Air Defense. Naval infantry (Marines) also have air defense. Aerospace Forces have bombers, aircraft fighters, ground attacks, ISR, and Airborne early warning and control. The air force has fighters, ground attack, ISR, ISR, Transport, Helicopters, and air defense with SAM S-300 and S-400.

Through the Missile development program, Russia succeeded in developing the hypersonic 3M22 Tsirkon missile. Kinzhal (AS-24 Killjoy) air-launched ballistic missiles have been observed on fighter MiG-31 Foxhounds, while Russia has already fielded the Avangard (SS-19 mod 4 Stiletto) hypersonic glide vehicle (HGV). Russian navy tests 2020 of the Tsirkon hypersonic weapon have focused on the potential impact of such weapons in a naval context. (IISS, 2021, pp. 5–6).

Ukraine Air Power

Air Force active personnel are 11.000 personnel (IISS, 2021, p. 209). Ukraine's airpower distributes to Army and Navy. They have a surface-to-surface missile, army aviation, and army air defense in the army. Army air defense also uses S-300 and S-400 Surface air missiles. In Ukraine, the Navy has airpower in Naval aviation with fixed-wing and Helicopters. The Navy also has Air defense with SP 23mm ZSU-23 and ZSU-24. The air force has Aircraft fighters with



On April 16, 2022. Russia attacked the capital city of Kyiv with missiles. Russian Defense Ministry spokesman Igor Konshenkov reported that the Russian long-range weapons attacks destroyed a Ukrainian armored vehicle factory in Kyiv and a workshop to repair military equipment in Mykolaiv. A high-precision missile is launched from an aircraft. In total, since the beginning of special military operations, 133 aircraft, 458 crewless aerial vehicles, 246 anti-aircraft missile systems, 2246 tanks, and armored fighting vehicles, 252 multiple rocket launchers, 981 field artillery and mortar guns, as well as 2146 vehicles Ukrainian special military destroyed (Suwiknyo, 2022). Russia also attacked and took control of a steel fabric in Azovstal, Eastern Ukraine, Russia, on May 5, 2022 (Ermochenko, 2022).

On May 12, 2022 - 04:03 GMT. According to the region's governor, air raids hit the town of Novhorod-Siverskyi in Chernihiv overnight, killing and injuring several people. Vyacheslav Chaus said schools, other administrative buildings, and private houses were damaged. "There are dead and wounded. Rescuers and doctors are currently working at the scene," Chaus wrote on Telegram. He did not specify the number of casualties.

On May 12, 2022 - 04:03 GMT. Heavy shelling in Zaporizhzhia village kills one person. On this day, the village of Komyshevukha in the Zaporizhzhia region came under heavy shelling, which killed one person and destroyed 60 residential buildings, Interfax reports. Missiles fell on Komyshevukha throughout the day, according to the Zaporizhzhia Regional Military Administration (ZOVA) (Ibrahim et al., 2022).

On May 12, 2022 - 04:03 GMT. Nearly 800 missiles launched at Ukraine since February 24: Army Ukraine's Army says 788 cruise and ballistic missiles have been launched on targets in Ukraine from the territories of Russia and Belarus since the start of the invasion. Alexei Gromov of Ukraine's armed forces said the main targets were transport infrastructure in the south and east of Ukraine, "but they repeatedly fired at other objects of critical infrastructure of social importance" (Ibrahim et al., 2022).

On May 17, 2022. Russia launched a missile strike on the infrastructure of the Lviv region. Three cruise missiles were destroyed by air defense units of Ukraine's West Air Command. According to reports, Russia has attacked the Lviv region from the southeast with naval cruise missiles," the air force said. Powerful blasts had been heard at the same time in Lviv. The region's governor says Ukraine's air defense has destroyed it (Al Jazeera, 2022).

On May 17, 2022. Ukrainian officials said that explosions rocked the western city of Lviv, and a Russian attack hit a military base close to Poland's border. The air force said the country's air defense shot down three cruise missiles in the Lviv region. According to Ukraine's Joint Forces Task Force, twenty civilians were killed in Russian shelling in the Donetsk and Luhansk regions. A village in Russia's western province of Kursk bordering Ukraine came under Ukrainian fire, regional governor Roman Starovoit said. No injuries were reported, but three houses and a school were hit. A Russian missile attack struck "civilian targets" in the city of Okhtyrka, wounding at least five people, the governor of the Sumy region said (Al Jazeera and News agencies, 2022).

Russia's Air Warfare Strategy

Since World War II, air superiority has been the deciding factor in every modern war. Russia's airstrike strategy is part of Russia's war strategy in fighting against Ukraine. Russia uses its air power assets to win battles as part of its efforts to achieve war goals. The use of airpower is implemented by utilizing the advantageous characteristics of air power. The primary characteristic is that the air force has altitude, speed, shock, and suddenness and is unaffected by the earth's terrain. These characteristics allow success in attacking and

destroying the enemy. Airpower also has the principle of providing protection and flexibility to maneuver against land and sea forces.

Russia is well aware that control of the sky is the key to victory in Ukraine. Air superiority would enable Russia to protect its ground forces and quickly attack Ukraine's troops from the air. This is why Ukraine's air force was Russia's initial target. On February 24, the first day of the war, Russia struck airports and air defense bases, hitting 25 cities across the country (Drozdov, 2022).

Ukraine's Air Attack and Defense during The War

Ukraine defends its air power against Russian air force attacks. In the face of this all-out Russian assault, the Ukrainian air force's primary mission is to prevent Russia from gaining air superiority. On the first day, Ukraine rescued the SU-27 by flying to Romania (Clement Charpentreau, 2022). Ukraine resisted attacks by optimizing the functions of its radar, air defense artillery, air defense missiles, and anti-aircraft MANPADS. Ukraine managed to shoot down several Russian planes. The next day, on February 25, Ukrainian airpower forces attacked the Millerovo Russian airbase with Tochka-U ballistic missiles. Ukraine attacked a burning military installation. Millerovo Russian Airbase had been shot and damaged by two Tochka-U ballistic missiles launched from Ukraine in response to the Russian invasion of Ukraine and to prevent Russian forces from using the airbase to provide air support to Russian troops in Ukraine.



Figure 1. Ukraine defending from Russia's air attack on February 24, 2022. Dede Suhaya (2022)

On March 6, 2022, the General Staff of The Ukraine Armed Forces reported that Ukraine had destroyed 88 Russian aircraft since the war began. On May 28, Ukraine successfully pushed Russian forces away from Kharkiv. Ukraine's President Volodymyr Zelensky visited Ukraine's troops in the Kharkiv region. It was the first official presidential trip outside Kyiv since the Russian invasion (BBC Journalism Team, 2022).

Russo-Ukrainian Air Strikes based on Giulio Douhet's Theory

Russia uses air power as a prelude to Ukraine's military assets attack. According to Douhet's theory, airpower should be used even before the war is declared. Douhet's theory is that airstrikes are carried out with strategic targets even before the declaration of war so that the enemy country surrenders before the onset of war. Before the announcement of the war, the strategic attack is expected to eliminate the enemy's fighting ability so that it cannot continue the war. A correction to Douhet's theory is that with international laws relating to war and war crimes, not carrying out airstrikes before a declaration of war violates



international law. Therefore, the Russian President continued to carry out the announcement, and a few minutes later, there were airstrikes on Ukrainian territory.

Russian airstrikes on the first day of the war, from the perspective of the target strike, the airstrikes targeted Ukrainian air power. The attack targets were airbases, aircraft on base, and Ukrainian air defense capabilities. According to Douhet's theory, strategic target bombing is the enemy's center of gravity (CoG). If the strategic target (CoG) is destroyed, it will demoralize the enemy, so the enemy loses enthusiasm to continue the war. These strategic targets are the central government, the national production center, and the metropolis urban center of the population. The three targets were not military forces but civilian targets, but Douhet thought that the fall of the civilian population in the coming war was inevitable. This theory was proven in World War II when the Allies carried out bombings on Hiroshima and the city of Nagasaki in Japan. Bombardment targeting this metropolis made Japan surrender to the Allies, and the second world war ended. Douhet's theory of the metropolitan target was challenged because of the unnecessarily large number of civilian casualties, so this third target is no longer possible in modern warfare.

The selection of targets for Russian airstrikes by attacking Ukrainian air power is part of a strategy to neutralize Ukrainian air power. With the destruction of Ukrainian air power, Russia will gain air supremacy. Air Supremacy is urgently needed to provide freedom of land and sea power without the threat of Ukrainian air power.

Russia also targeted government centers on the first day to bring down Ukraine's fighting morale. A criticism of the unregulated Douhet's theory is that enemy air power is also a strategic target in the initial attack of the war. Successfully neutralizing enemy air power in modern warfare is critical to reducing the possibility of self-destruction from enemy counterattacks.

Russia continues to upgrade the status of air superiority to air superiority. Russia stated that until the 13th day, March 8, 2022, Russia had succeeded in disabling 90% of the Ukraine airbase. The prime Ukraine airbase Vinnytsia, Lutsk airbase also Ivano-Frankivsk airbase were damaged. The aircraft maintenance and maintenance depot in Lviv has been demolished. Russia destroyed 137 air defense artillery systems S-300, Buk M-1 air defense, Buk S-125 air defense, 81 Ukrainian air force radar units, 104 rocket launchers, and 97 drones. The Russian Air Force destroyed 89 warplanes and 57 helicopters out of 250 combat aircraft and attack helicopters on the ground and in the air (Teslova & Chirciu, 2022). Russia, until the 28th day or the date of March 20, 2022, Russia's air power has carried out 1,403 airstrikes and has launched 459 missiles. (Berlin, 2022).

Air Raids on Populated Areas

Russian airstrikes were not targeted at population centers, as Douhet's theory suggests. Douhet assumed that an attack on the population would be able to stop the war. Targeting the people would cause a lot of civilian casualties, but Douhet thought that the number of victims would be much higher if the war dragged on and was prolonged. In this war, Russia uses missiles with high precision. With high precision, the target can be destroyed according to the purpose of the attack but avoids civilian casualties. However, it is unavoidable to fall victim to civilians.

Air Attack on National Production Center

The Russian airstrikes targeted giant electrical nuclear power plants and fabric steel. The power plant is a central source of electrical energy for the population in Kyiv. Steel fabric plants are vital for the economy of Ukraine. The destruction of these strategic targets applies



the Douhet's Theory, wherein the national production center is a strategic target that airpower must destroy. The Russian attack on the nuclear reactor, the source of Ukraine's electricity supply, is a strategic target; without electricity, the industry and the city will be paralyzed. However, the Russian attack on the nuclear reactor was criticized by many parties internationally because this attack allowed the explosion of the atomic reactor, which would pose a humanitarian hazard not only in Ukraine but also in countries around Ukraine.

Conclusion

From the analysis of the Russian airstrikes carried out during the current Russia-Ukraine war, it can be concluded that Giulio Douhet's theory is still relevant to be implemented. Look like the critical role of air power in a bombing or strategic attack. However, some adjustments are needed. Firstly, adjustment related to the air power technology itself. Technological airpower is very robust and has high value to attack and defense, so destroying air power is very important in the initial war. Secondly, targets in metropolis cities are forbidden because it will break the international convention about human rights. Civilian casualties during the war are war crimes. Precision air weapons are a must.

The best practice from Russian and Ukraine airpower during the war for developing Indonesia air power is as follows: Firstly, the sophisticated technology of air power, including aircraft and air missiles, are means for secondly, the air defense system is compulsory to defense air power itself because air power is one of the strategic targets at the beginning of the war. Thirdly, air power defense assets and systems in one packet are absolute to gain air supremacy. During the war, the use of air power made the Indonesian air force build air power assets with the highest technology and number. Airpower is not only for the air force but also spread to land and sea power.

Recommendations, firstly, develop the technology of air power by Indonesia's defense industry, if we can make itself, we can produce as we want. Second, aircraft, missiles, radars, and air defense systems should be distributed to the land and sea power. Thirdly, during a war, all air power spread in the land and sea forces is integrated into one command and control the use of air power to get the effectiveness of its use.

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