CASE STUDY

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Operation Pointblank: air strategy based on the role of air power

Operación Pointblank: estrategia aérea con base en funciones del poder aéreo

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ABSTRACT

By analyzing Operation Pointblank, this research evaluates a classification methodology for air strategies based on the role of air power. The work distinguishes five theoretical conceptions of the employment of air power based on the point of view of thinkers and their theories. It is based on the concept military of strategy revealed through a review of the literature produced by classic and contemporary theorists. The examination presents the initial conclusions of the investigation conducted by the author within the Postgraduate Program of UNIFA, and its goal is to develop the construct of the role of air power. Through documentary and bibliographic researches, the article highlights the main air actions of Operation Pointblank, framing them within the construct and inferring the strategy of employment of the air power. The historical method of approaching the operations contextualizes the geographic, political and operational environments, and is based on the analysis of the actions undertaken on the part of one of the contenders.

Keywords: Air power. Strategy. Air strategy. The role of air power.

The acronyms and abbreviations contained in this article correspond to the ones used in the original article in Portuguese.

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RESUMEN

A partir del análisis de la Operación Pointblank, la investigación aprecia una metodología de clasificación de estrategias aéreas con base en funciones del poder aéreo. El trabajo distingue cinco concepciones teóricas de empleo del poder aéreo a la luz de pensadores y sus teorías. Es fundamentado en el concepto de estrategia militar desdoblada por una revisión de literatura de teóricos clásicos y contemporáneos. La apreciación presenta conclusiones iniciales sobre la investigación conducida por el autor en el Programa Posgraduación de la UNIFA y tiene por objetivo desarrollar el constructo de función del poder aéreo. Por medio de investigación documental y bibliográfica, destaca las principales acciones aéreas de la Operación Pointblank, encuadrándolas en el constructo y deprendiendo la estrategia de empleo del poder aéreo. El método histórico de abordaje de las operaciones contextualiza el ambiente geográfico, político y operacional, tomando por base el análisis de las acciones emprendidas por parte de uno de los contendores.

Palabras clave: *Poder aéreo. Estrategia. Estrategia aérea. Función del poder aéreo.*

RESUMO

A partir da análise da Operação Pointblank, a pesquisa aprecia uma metodologia de classificação de estratégias aéreas com base em funções do poder aéreo. O trabalho distingue cinco concepções teóricas de emprego do poder aéreo à luz de pensadores e suas teorias. É fundamentado no conceito de estratégia militar desdobrada por uma revisão de literatura de teóricos clássicos e contemporâneos. A apreciação apresenta conclusões iniciais sobre a investigação conduzida pelo autor no Programa de Pós-graduação da UNIFA e tem por objetivo desenvolver os construtos de princípio de guerra aplicado à guerra aérea e de função do poder aéreo. Por meio de pesquisa documental e bibliográfica, destaca as principais ações aéreas da Operação Pointblank, enquadrando-as nos construtos e depreendendo a estratégia de emprego do poder aéreo. O método histórico de abordagem das operações contextualiza o ambiente geográfico, político e operacional, tomando por base a análise das ações empreendidas por parte de um dos contendores.

Palavras-chave: *Poder aéreo. Estratégia. Estratégia aérea. Função do poder aéreo.*

1 INTRODUCTION

The perspective on war that Clausewitz (2010, p. 27) presented in his work *On War*, as "[...] a real political instrument, a continuation of political relations, carried by other means", transformed war in a phenomenon that is characteristic of mankind. Contemporary authors who complement the vision of the Prussian writer corroborate this specificity of the phenomenon called war. It is a cultural phenomenon: war is in itself culture (KEEGAN, 1995), and, consequently, it expresses a natural tendency of the human species to try to survive (LIDER, 1987).

As an object of politics or as a cultural expression, war is carried out through **actions** that make opponents with opposite interests clash. Within this sociologic context, only man is capable of planning such actions, based on objectives whose implementation happens with the destruction of beings from the same species.

Even when facing this devastating side of war, a certain degree of reasoning guides the human being in this endeavor. In war, opposing interests are expressed as national goals. The **actions**, when premeditated and coordinated, become **strategies**.

In the present study, the researcher tried to identify the strategy behind Operation Pointblank, during World War II, based on the role played by air power, which is, in reality, the *modus operandi* of an air force in a particular context, and reflects the way in which this power carries out its actions. With this perspective, the researcher created the following hypothesis for the problem posed: the role of air power is comprised by the elements that define air strategies. The goal of this study was to identify to what extent the independent variable, the role of air power, impacts the definition of an air strategy, which is the dependent variable.

This article was written so as to present the initial conclusions of the research conducted by the author. Thus, the text encompasses the theoretical foundations of air power, which support the role observed specifically by the ideas of Giulio Douhet and William Mitchell. The article presents the methodology behind the investigation, and a bibliographic research of the Operation Pointblank, in which the author tried to identify the historical context and the presence of aspects of the role of air power that could be related to the adopted strategy. Through that, the author could draw initial conclusions about the work that is still being carried out, discussing some of the results already found.

2 DEVELOPMENT

2.1 Theoretical reference

The current edition of the new Brazilian Air Force Basic Doctrine (BRASIL, 2012) reintroduces to the discussion about doctrine the contribution of the air power theorists. Studying these theorists

> helps to define and make relevant the way in which air power can be employed, developed and built [providing] insights and ideas on how to solve the future military problems the nation may face. (CHUN, 2004, p. 35).

The author of the present article adopted two theoretical trends that lay the foundation for the employment of air power and incorporate concepts that are crucial for an "[...] overview of the many different ways in which this subject has been treated" (BARROS, 2013, p. 86). An interdisciplinary dialogue, typical of the Aerospace Sciences, was established, in which the Military History, International Relations and Political Science were examined through the realistic perspective of reference.

2.1.1 Basic theory on the employment of the air power

Ever since aircraft started being employed in war, men have devoted themselves to study this new weapon and its impact on the development of war actions. The increasing presence and importance of the employment of air power have allowed for the consolidation of a theoretical foundation for this kind of power.

a) The Air Power and the control of the air

Giulio Douhet, in his work **The Command of the Air**, developed the "[...] first and most influential among the air power theories" (CHUN, 2004, p. 39). This theorist argued that destabilizing the morale of the civilian population was the most efficient way to end a conflict. The morale of the population could be shaken though an air raid, which would lead the civilians to "[...] pressure the government to end the war" (CHUN, 2004, p. 40 and 45). This thinker believed that the psychological effects of an air raid would be more pronounced than its physical effects (MEILINGER, 1997; 2001).

The theorist's ideas were strongly influenced by the trench warfare in World War I. In the line of contact between the opposing forces, the battle had become stagnant, without any progress that translated into the conquest of territory. Douhet witnessed the war in the trenches, as well as the carnage and destruction experienced by the soldiers (MEILINGER, 1997).

Douhet pointed out the air raid as the solution for the stalemate at the trenches. The plane then became an offensive weapon by nature, due to its independence from the surface and its speed (SANTOS, 1989). Before the aircraft could carry out their raids, the nation first needed to ensure the **control of the air** (CHUN, 2004). This was very important for Douhet, who considered it the first step to be taken for the national defense. After acquiring the control of the air, the Air Force could bomb the enemy in its "[...] vital centers of government, industry and population". The struck vital centers would break the enemy's resistance. For the Italian theorist, "[...] the control of the air could only be achieved with the proper air power" (DOUHET, 1998, p. 53).

As one of the primary principles of his theory, control of the air would be achieved not through **aerial warfare** with the enemy air force, but through the destruction of the enemy's air force **on ground, through an attack to its bases and aircraft**. Douhet stated that it would be "[...] more advantageous to destroy the enemy's potential air power by annihilating the nest and the eggs rather than by looking for the birds flying in the air and trying to take them down" (DOUHET, 1998, p. 83).

This Italian author was the first theorist to realize the importance of target selection for the creation of a strategy for the employment of air power. He identified five basic target categories: industry, transport systems, infrastructure, communication networks nodes, government buildings and the will of the people. The last one "[...] is the most important category" (MEILINGER, 1997, p. 11). In Douhet's view, selecting the goals, grouping them into zones, and the determination of the order in which they should be attacked is the most difficult and delicate task in aerial warfare, and it constitutes what can be called aerial strategy (DOUHET, 1998).

b) Air Power as a strategic weapon

William Lendrum Mitchell was the American theorist who realized that the employment of a strategic air raid as an independent element would yield more significant results for the war than the simple role of supporting the ground forces (MITCHELL, 2009). He insisted that the air power could defeat a nation by "paralyzing its vital centers [...]" and, consequently, its ability to proceed with the hostilities (MEILINGER, 1997, p. 95). These centers included large cities, factories, raw materials, food supplies, general supplies and modes of transportation (MEILINGER, 1997).

The perception of the strategic air raid as an independent element from the ground forces made Mitchell advocate for the need of a new set of ideas and strategies to be developed and studied by those responsible to carry out the aerial warfare (MITCHELL, 2009).

According to Meilinger (2001, p. 108), Mitchell's "vital centers" were represented by the industry which made the arms and equipment that are necessary in modern warfare. The premature raid of the enemy's vital centers would significantly destabilize the country. Chun (2004, p. 48) mentions that these targets were the enemy "command centers and industry".

Mitchell agreed with Douhet's idea about the critical need to gain control of the air, but he understood that the best way to destroy the enemy air force "[...] would be through an aerial battle" (MEILINGER, 1997, p. 98). The raid of the vital centers would compel the enemy air force into defense, which would lead to its destruction in the subsequent battle. This was the "[...] prerequisite to achieve victory" (CHUN, 2004, p. 48).

2.2 Methodology

2.2.1 The nature of the research

The research was of an exploratory nature, and had the goal of "[...] providing more familiarity with the issue" (GIL, 2002, p. 41), making it more explicit. As a survey, it aims at finding alternatives to the existing knowledge on aerial strategies. It is a study comprised of formulations that have not yet been fully structured within the institution's doctrinaire foundations. The nature of the research allowed for the suggestion of an explanation for the formulated hypothesis.

2.2.2 Research method

Due to the classification used by Lakatos and Marconi (1990), which propose the existence of a method of approach and a method of proceeding, the present research was organized as follows: as a method of approach, the induction method was chosen; and as a method of proceeding, the historical method.

Thus, the aerial operation chosen for the discussion provided particular data that, when interpreted considering the independent variable, make it possible to generate inferences about the aerial strategy chosen for the situation that is being analyzed. In the present research, this approach was carried out through the observation of the phenomena, the comparison and evaluation of their relationships, and the generalization of these relationships.

As the method of proceeding, the historical method was chosen, not only with the simple goal of creating a narrative of the Operation, but with the objective of investigating the aerial strategy, which is defined in the form of a **problem-history**. The analysis of the aerial operation, focusing on the problem devised, which is the impact of the role of aerial power, was the guiding line, that is, the problematization that is indispensable for this kind of method of proceeding.

2.2.3 Research techniques and procedures

The research, due to its historical nature, was comprised of a process of systematic observation and analysis, a procedure considered basic in the scientific method. The technique in this research was the way in which the data collection and data analysis were performed.

The bibliographic sources used can be classified as follows: a) documents (primary sources): reports containing the official/governmental analyses of the developed aerial operations; and b) specialized bibliography (secondary sources): works whose scientific and academic impact was significant for the historiography, and which were written by renowned historians who report and interpret the events.

Regarding to the stages, the research was conducted as follows: a) analytical reading, in order to "[...] organize and summarize the information contained in the sources", identifying key ideas (GIL, 2002, p. 78); b) interpretive reading, relating the key ideas to the research problem and its variables; c) three-level data analysis: interpretation (relating the independent variable to the independent ones); explanation, through the production of explanatory diagrams; and specification (validity of the relationships among the variables); and d) evaluation of the hypothesis as an effective answer to the research problem.

Since the researcher is dealing with interpretive techniques and procedures, he is aware of the difficulties due to personal tendencies and the perspectives based on past experiences, interests and values. As Japiassu (1975) stated, a scientific truth is a historical concept, and the **truth** will be greater or smaller depending on its historicity.

2.2.4 Construct

The Construct is a concept with a greater degree of abstraction, "[...] consciously created, developed or adapted to a specific scientific end" (BARROS, 2013, p. 195). In the present research, the construct of **the role of air power** was developed with the intention that it could be used as a variable in the evaluation of the relationship established in the research problem.

The role of air power construct refers to the way in which air power is employed within the context of a war. The need to classify the roles of air power was already present when aircraft started being employed in combat. In 1914, a German officer, through the observation of Italian actions during their war against the Turks, wrote a memo to his Chief of Staff. From this experience, a first classification of the use of aircraft in military operations was created: a) strategic reconnaissance; b) tactical reconnaissance; c) observation of the artillery; d) reconnaissance for cavalry operations; e) combating enemy aircraft; f) combating enemy troops; g) destruction of enemy facilities; h) connection (sending messages); and i) transporting troops (CONNELL, 2007).

The **roles** of air power are the roles performed by such power, and they have a basic sense of utility. Playing a role is doing what the instrument was originally designed to do. Thus, the adoption of this kind of classification has the goal of explaining to the reader the abilities that an air force can possess and employ during combat.

In this investigation, the **role of air power** construct was used based on two classifications: **aerial superiority** and **strategic bombing**. The former, as recommended by some renowned theorists, refers to the ability to control the air in relation to the enemy. The latter refers to the ability to take the war into enemy hinterland, acting against the opponent's economical infrastructure.

2.3 Presentation and discussion of the results

> The first duty of 8th Air Force fighters is to destroy German fighters.
> Lieutenant General James "Jimmy" Doolittle
> Commander of the 8th Air Force during Operation Pointblank
> This is a MUST – to destroy the enemy air force wherever you find them, in the air, on the ground and in the factories.
> General Henry "Hap" Arnold
> Commanding General of the United States Army Air Force. (ZALOGA, 2011, p. 55).

2.3.1 Historical context behind Operation Pointblank

On November 3rd 1944, the US government created a group of analysts to evaluate the impact of the air raids in Germany. The goal of this analysis was to evaluate air power as an instrument of military strategy. The ***United States Strategic Bombing Survey*** (USSBS) was conducted from the moment the Allies landed on France, on the episode known as **D Day**.

The USSBS reveals the importance and intensity of Operation Pointblank in the context of the Allied effort to launch air raids against Germany. Around 2,700,000 tons of bombs were dropped on German soil (D'OLIER, 1987), and around 76% of that tonnage was dropped in the last 17 (seventeen) months of the war, in the same period as the actions of the Operation analyzed in the present study.

Operation Pointblank emerged as a directive from the Ally High Command in the end of 1943, as a consequence of a meeting of the great leaders that took place in Casablanca, Morocco, in January of that year. It would guide all of the efforts of the combined bomber offensive in the war in Europe. For the Allies, "[...] the dominant element in the strategy was the reconquest of the European continent and the planned victory, which should be achieved through invasion and territorial occupation" (D'OLIER, 1987, p. 9).

The most intense moment of the Operation became known as *Big Week*, and it happened between the 20th and the 25th of February 1944. In this period, thousands of American air raids were launched against German targets, generating great aerial battles against German aviation. Only within this one week, the tonnage of bombs dropped was the same as in the whole year of 1943. A total of 157 air raids were lost, 600 enemy aircraft were destroyed, not to mention the considerable damaged done to the aviation industry (DAVIS, 2006).

2.3.2 Purpose of the Operation

According to Zaloga (2011), the name Pointblank[1] expressed a disagreement between the British and the Americans as to the theoretical approximations regarding the employment of strategic air power. While the British championed enthusiastically the idea of the random nocturnal air raid, the Americans devoted their efforts to the daytime air raids against previously selected military and industrial targets (CRANE, 1993). To the Americans, the attacks on industries that had explicit military relevance would be more capable of producing significant effects in the political movements that were trying to overturn the Nazi regime, mainly those supported by the German Army, than attacks on non-industrial areas (CRANE, 1993).

Despite the differences in approach on the part of the Allies regarding the nature of the targets, the Operation did not evolve to the **terror bombing**, as the British wanted it, nor to the exclusively industrial/economic focus the Americans preferred. On the contrary, "[...] an intermediate goal was found: to defeat the *Luftwaffe*" (ZALOGA, 2011, p. 12). The *Luftwaffe*, an element of

opposition to the practicality of the air raids, was classified as an intermediate goal that had to be neutralized in order to maximize the results of the air raids (BOYNE, 2003). Operation Pointblank was devised by the US 8th Air Force with the goal of bringing into battle the *Luftwaffe*, which would try to protect the national factories against the Ally air raids, fighting a decisive battle in German skies (CONNELL, 2007).

Zaloga (2011, p. 55) considers the strategy of combating the *Luftwaffe*, which was conducted by the US 8th Air Force, a "[...] classic friction strategy". The immense formations of the bombers, which comprised hundreds or even a thousand of aircraft, penetrated German territory to fight against enemy anti-aircraft artillery and aircraft. In the flight sequence, great aerial battles were fought between the bombers, which were protected by escort fighter aircraft, and the German fighter aircraft. Another harmful component of the strategy was the nature of the selected targets: the fighter aircraft industry. The attack on these targets aimed at reducing the ability to produce aircraft and, consequently, reduce the number of planes available to the *Luftwaffe*.

These realizations allowed for the conclusion that the general purpose behind Operation Pointblank was to debilitate the *Luftwaffe* as a combating force capable of opposing the Ally air raids over Germany, which, in a broader context, served as preparation for the invasion of Normandy, which would take place in June 6th 1944. This perspective of the Ally's purpose was in line with the available theory at that time, which was confirmed in Douhet and Mitchell's points of view who championed the control of the air as a prerequisite for the other actions of a military campaign.

2.3.3 The selected targets

In the analysis of an aerial strategy, it is crucial to identify the targets or groups of targets that were attacked. This perception is based on Douhet' theory, when the theorist emphasizes that the "[...] most difficult and delicate task in aerial warfare, [or what comprises the] aerial strategy" is the selection of goals [or targets] (DOUHET, 1998, p. 79). Target selection for Operation Pointblank was directed towards the aeronautic industries and oil refineries, aimed specifically against the production of aviation fuel.

Crane (1993) highlights the aircraft factories as one of the Allies' military goals. In the case of the aeronautic industries, the focus lay on those that produced airframes rather than on those mainly devoted to building engines. According to Zaloga (2011, p. 72), the German argued, after the war, that the "focus of the attacks was mistaken, and that the aircraft engine industry was much more vulnerable [...]" than the assembly factories.

A second effort to gain aerial superiority over the *Luftwaffe* was the attack to the refineries that produced aviation fuel. Around July 1944, all refineries that produced synthetic fuel had been attacked. Before the beginning of the actions, the production of aviation fuel was around 175,000 tons per month, while in September this figure dropped to only 5,000 tons (D'OLIER, 1987).

Oil refineries were the target of an intense Ally air raid campaign in 1944. In Ploesti, Rumania, alone, between August 10 and 19, more than a thousand bombers attacked this town's refinery, completely shutting down production.

From the resulting investigation, two main categories of targets selected by the Allies as part of the strategy defined for Operation Pointblank stand out, as seen in Chart 1. The first one can be generally identified as the aerospace industry. Mainly, the factories that produced the *Luftwaffe's* fighter planes. The very same fighter planes that intercepted the groups of Ally bombers, or that were stationed on airfields, were also considered targets, since the main goal was to incapacitate the German Air Force.

Chart 1 - Groups of targets/targets – Operation Pointblank.

Groups of Targets	Targets	Priority
Aerospace Industry	Fighter plane airframe factories	1
	Bomber factories	2
	Engine factories	3
	Aeronautic parts factories	3
Oil Refineries	Aviation fuel production	1
	Synthetic fuel production units	1
	Methanol production units	3
	Hydrogen production units	3
	Rubber production units	3

Source: The author.
Captions: Priorities: 1- high; 2 - medium; 3 - low.

Another kind of target identified were the units of production or storage of fuels, specifically aviation fuel. In the refineries, though, other products were targeted, such as methanol and rubber.

2.3.4 The independent variable **role of the air power**

The independent variable was identified during the documentary and bibliographic researches, with an exploratory focus, evidencing the application of certain roles of the air power.

a) The role of **Aerial Superiority**

The investigation strongly pointed to the relevance of the role of **aerial superiority** in the planning and execution of Operation Pointblank. This independent variable largely determined the strategy that was followed in this campaign.

Operation Pointblank, developed to make the landing of the Allies in Normandy viable, is an example of an operation conducted in order to gain aerial superiority (which actually happened) that combined different elements. The control of the skies over the battlefield happened through the attack on aircraft production, the destruction of airfields and of the necessary logistics to the operation of aircraft and the deterioration of the ability to function of the system that supplied the forces (CHUN, 2004). This Operation was conceived as a preliminary stage of the Ally landing operations in Normandy, and had the goal of reducing the *Luftwaffe's* ability of counteracting actions on the ground. The conquest of aerial superiority was considered a prerequisite for the amphibious invasion. In the words of Boyne (2003, p. 265), "[...] the goal was to take down a number of German planes that was greater than their capacity of production to replace them".

The attacks to the aerospace industries allowed the USSBS to reach some conclusions. The Aeronautic Industry's production was not entirely neutralized. On the contrary, comparing the number of aircraft produced in 1939 (8,295) and in 1942 (15,596) with the figures for 1944 (39,807), one can observe that the *Luftwaffe* received 66.62% more planes in 1944 than the sum of the production of 1939 and 1942. This was a consequence of the excessive production capacity of the airframe industries. Zaloga (2011) complements adding that in 1943 the German had not yet adapted their civil industrial facilities for the production of military equipment, as the United Kingdom, The United States and Russia had done.

The attacks to the fuel industries, a second effort in the struggle for aerial superiority, reduced the *Luftwaffe's* fighting capacity, and were recognized as a vital group of targets by Ally Intelligence (ZALOGA, 2011). The German once more made a huge effort to overcome the effects of the attacks. They improvised by building underground refineries; however the industrial complexity of this system was greater than that of the production of aircraft, and the initiatives were unsuccessful (D'OLIER, 1987).

In the context of the aerial battles that occurred during Operation Pointblank, the action against the aircraft industry and against the production of aviation fuel effectively show the relevance of the role of air superiority in the definition of an aerial strategy.

b) The Role of **Strategic Bombing**

Parallel to the attempt at achieving favorable conditions for the landing in France, the Allies made an effort that constitutes the second major relevant role in the conceived aerial strategy: bombing German economy and infrastructure.

According to the USSBS, the attacks on Germany began with the Royal Air Force (RAF) in 1940, but they did not "[...] affect substantially the course of war production" in that country (D'OLIER, 1987, p. 11). Due to the strong reaction on the part of the *Luftwaffe*, which inflicted heavy losses on British air raids, the RAF changed its *modus operandi*, and started making attacks at night. However, due to the technology available at that time, there was no nocturnal precision launching of bombs, and the consequence of that is that the raids were targeted at Germany's large concentrations of population. In the attack of Cologne, on May 30th 1942, 42 British bombers were taken down. In the attack of Schweinfurt, on August 17th 1943, among the 315 bombers deployed, 60 did not return (DAVIS, 2006).

After analyzing the effects of the strategic bombing, the USSBS concluded that:

> Allied air power over Western Europe was a decisive factor [...] that led the economy that supported the German Armed Forces into a virtual collapse, even though the effects of this collapse did not hit the frontline forces that were overcome by the Allied forces. (D'OLIER, 1987, p. 37).

Without the bomber offensive against Germany, German priorities could be directed towards the Eastern Front or other theaters of operation. Without it, the diversion of resources to aerial defense that reduced the efforts devoted to other retaliation weapons, such as the V-1 or V-2 (the self-propelled long-range flying bombs) (MASON, 1994), would not have occurred.

The investigation identified many interpretations for the results of the application of the role of **strategic bombing** in the context of Operation Pointblank and of the bombings that occurred as a consequence of this Operation. Buckley (1999), despite believing that the strategic bombing of Germany was a failure from the point of view of the pioneer theorists, such as Douhet and Mitchell, states that it indeed contributed to the collapse of the Axis Powers' economy, not only in terms of physical destruction, but also in terms of the restrictions imposed to production and to the *Luftwaffe* during the last two years of the war. In this aspect, the interrelationship between the role of the **strategic bombing** and the role of **aerial superiority** in the context of the aerial strategy developed by the Allies is highlighted.

To Crane (1993), the unbiased analysis of an observer will conclude that the Americans did their best to win the war through the bombing of military and industrial targets, instead of employing the idea of the terror bombings. For the American Air Force, the result of the USSBS, developed mainly by economists and scientists, apparently pointed to a better analysis of the groups of targets, and to the fact that the anticipated focus on the key industrial goals, such as the fuel industries, would have collapsed the enemy economy at a much earlier stage (CRANE, 1993).

Chart 2 presents a summary of the roles of the air power.

2.3.5 Conclusions about the relationship between the dependent variable and the independent variable

The analysis of Operation Pointblank showed that this study's hypothesis is an effective answer to the problem. The roles of the air power comprise elements that define the aerial strategy, a fact that was noted in the performed evaluation.

This statement can be supported once one observes the relationship between the independent variable and the theory available at the time about the employment of air power. Douhet endorses the idea of the strategic bombing of the enemy hinterland, which actually happened. He emphasizes, as well as Mitchell, the need to gain control of the air. Operation Pointblank represented an effort to obtain aerial superiority over the *Luftwaffe*.

The approach of the Allies regarding the role of **aerial superiority** involved the adherence to a friction aerial battle, and, therefore, they were in line with Mitchell's point of view. This choice led the opposing sides to conduct major confrontations in German skies. It fostered the development of the long-range escort aircraft, since the bombers, though they were flying in groups, were not as invulnerable as it was first thought.

Mitchell decisively influenced the American commanders who led the Operation analyzed in this article. He recommended that air power should be used against the enemy's **vital centers**. In the Allies' perception, these centers were the aeronautic industry and the oil refineries. Within the role of **strategic bombing**, the air force would now be crucial for the strategy.

Chart 2 - Summary of the roles of air power – Operation Pointblank.

OPERAÇÃO POINTBLANK		
Role	Aerial superiority	Strategic bombing
Objective of the role	To hinder the actions of the *Luftwaffe* against incoming bombers.	To weaken Germany's military economical capacity.
Main identified actions	- Attack on the fighter aircraft industries; - Neutralization of the aviation fuel production; - Creation of friction, through aerial battles, among the intercepting aircraft; and - Development of long-range escort fighter planes.	- Attack on the industries involved in the production of aircraft; - Attack on the arms industries; and - Attacks on the industries of products refined or derived from oil.

Source: The author.

The investigation about Operation Pointblank allowed the researcher to reach the goal of developing the first element of an evaluation of aerial strategies. Based on the purpose behind the Operation, which was in its turn based on certain roles of the air power, and on the targets selected in order to achieve it, it was possible to visualize as a diagram the development of an aerial strategy on the part of the Allies, mainly the Americans, during the period studied (Figure 1).

Based on the historical example analyzed here, it is possible to draw conclusions about the aerial strategy developed and, through these conclusions, when necessary, one can learn **lessons** that may be used in future similar situations. This generalization is not prescriptive in the sense that it establishes fixed rules of conduct. On the contrary, it is descriptive, based on history, and has the goal of pointing out alternatives based on actions that were performed, with or without success, and that were influenced by many different factors.

The obtained generalization of the aerial strategy, therefore, indicates that the goal of taking down the enemy's aviation is made possible once the enemy's aeronautic industry and its capacity to sustain itself in terms of fuel are chosen as priority targets. In this action, the employment of two roles is highlighted: **aerial superiority** and **strategic bombing**, which aim to incapacitate the opposing air power through the destruction of its ability to reproduce, through friction in the aerial combats, and through the neutralization of the fuel supply source used in aviation. A detailed evaluation of the **vital centers**, as Douhet recommended, will allow the identification of the targets that are crucial in order to reach this goal.

The experience obtained with the analysis of Operation Pointblank reveals that the impact of the **roles of the air power** was decisive for the creation of an aerial strategy, and the strategist is responsible for the scrutiny and the sensibility of considering a myriad of factors that will interfere with the creation and application of the strategy.

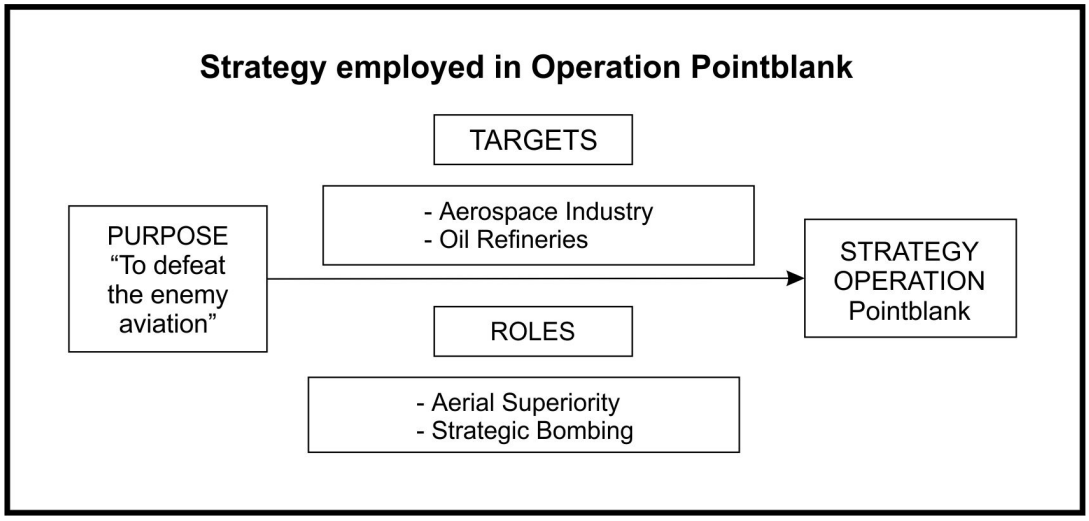
3 CONCLUSION

Based on the evidence obtained from the investigation, one can observe that the manner in which the strategic bombings were deployed led the economy that supported the enemy Armed Forces to almost collapse. However, the full effects of this collapse had not yet been felt in the enemy frontlines when they were overcome by the Allied forces (D'OLIER, 1987).

The main conclusion of the research was to show the relationship between air power and the strategy developed by the Americans, which may be consolidated based on the observation of the application of two of the roles of the air power: aerial superiority and the focus on strategic bombings. In the struggle to obtain aerial superiority, the efforts were directed against the military capacity of the *Luftwaffe*, be it against the aircraft industries, or against the very same aircraft, through aerial battles that generated a great deal of friction. In the strategic action, the effort to counter fuel production, mainly aviation fuel, is highlighted. The decrease in the production of this supply that is vital to the continuity of the operations of the German Air Force generated significant effects in the country's ability to oppose the incursions of the Allied bombers.

The reasoning of the American commanders was based on the theories of Douhet and Mitchell, and that reflects the pertinence of the theoretical basis regarding the subject analyzed. The importance of obtaining the control of the air is revealed as the first premise in the developed strategy. Subsequently, the action against the infrastructure that supported the operational capacity, a

Figure 1 - Elements that define a strategy such as Operation Pointblank.



Source: The author.

clear choice to adhere to the idea of the **vital centers** or **bottlenecks**, is also supported by the ideas of the theorists discussed, especially the ideas of Mitchell.

It is possible to notice; however, that the creation of the Ally aerial strategy, especially the one developed by the Americans during Operation Pointblank, supports the hypothesis of the present investigation, even though the roles of air power were defining elements for the aerial strategies.

Indeed, further and broader analyses of aerial operations will be necessary in order to consolidate the initial conclusions of the present research. But this does not eliminate the value of the major contribution of this research. The contribution is revealed in the possibility of conducting, within the process of planning and carrying out operations, a moment in which the **aerial strategies** are consolidated based on the construct of the r**ole of air power**. In this construct, classifications such as the ones observed in this fragment of the research, **aerial superiority** and **strategic bombing**, may be broadened and represent the true scope of the actions of air power.

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