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Limitations of Air Power in the European theater from 1943-1945
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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Strategy and Policy based on the following assigned topic:

This essay answered an assigned question: Prior to the outbreak of the Second World War, there were many who predicted that air power would play a decisive part in the next great-power war. To what extent did the performance of Allied air forces in the European theater of operations from 1943 to 1945 confirm these predictions?

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Introduction

Allied air power in the European theater from 1943 through 1945 failed to achieve *decisive effects* as predicted by the theorist Giulio Douhet and practitioner-advocate of air power Brigadier General Billy Mitchell. The new realities foreseen by Douhet included the negation of traditional defensive strengths with a concurrent advantage shift to the offensive,¹ targeting of non-combatants,² and a new attacking imperative where degradation of an enemy's air power production economy became the only viable defense.³ These predictions only partially materialized. However, none of General Mitchell's predictions for the elimination of traditional land and naval forces⁴ survived contact with the realities of the European theater from 1943-1945. The fog of war and unforeseen dynamics limited air power to an essential – not decisive – role in a mix of operations, although some might argue once air power doctrine matured later in the war, it succeeded in achieving decisive effects.

Douhet prediction #1 – air power gives an advantage to the offensive and decisive effects

While Giulio Douhet correctly hypothesized air power would magnify offensive advantages,⁵ he incorrectly foretold that air power alone could lead to the decisive defeat of enemy forces “in a matter of days.”⁶ His assertion stipulated that to be decisive, an air power must have a sufficiently strong, independent air force and attack an unprepared enemy.⁷ In 1943 Allied air

¹ Douhet, Giulio. *Command of the Air*. Translated by Dino Ferrari. Washington, D.C.: Air Force History and Museums Program, 1998. Page 15.

² Ibid, Page 10.

³ Ibid, Page 52.

⁴ Larrabee, Eric. *Commander in Chief: Franklin Delano Roosevelt, His Lieutenants and Their War*. New York: Simon and Schuster, 1987. Reprint, Annapolis: Naval Institute Press, 2004. Pages 166-167.

⁵ Douhet, Giulio. *Command of the Air*. Translated by Dino Ferrari. Washington, D.C.: Air Force History and Museums Program, 1998. Page 15

⁶ Ibid, Page 51.

⁷ Ibid, Page 51.

power forced its way through German opposition and effected devastating strikes on enemy targets across the continent in the Ruhr Valley, at Hamburg, and at Schweinfurt. In doing so, and by attacking in mass, Allied air power met Douhet's definition for an independent air force: "an offensive force which can strike with terrific speed against enemy targets on land or sea in any direction, and can force its way through any aerial opposition from the enemy."⁸

Also relevant during this period, German air defenses focused on the Eastern Front, and German air defense radar had been rendered ineffective by the Allied "Window" innovation.⁹ Together, these conditions gave the Allies a requisite unprepared adversary upon which to achieve a decisive victory as laid out by Douhet.¹⁰ However, despite Allied air attacks in the Ruhr Valley, 40,000 Germans killed in the Hamburg bombing¹¹ and major German equipment losses at strategic production facilities in Schweinfurt,¹² decisive effects eluded the Allies. Instead, as Allied bombs fell on civilian and economic targets throughout 1943 and into 1944, German air defense recovered.¹³ In fact, by summer 1944 the German war economy reached its peak production.¹⁴ Therefore, although the Allies confirmed a tactical advantage that an air power could take the initiative, bypass fortified borders, and strike targets of its choosing, the performance failed to validate Douhet's formula for strategic air power victory.

Additionally, Allied air superiority from 1943-1945 was only achieved via command of the sea. Command of the North Atlantic, in particular, was crucial in bringing an Allied critical

⁸ Ibid, Page 49.

⁹ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Page 310.

¹⁰ Douhet, Giulio. *Command of the Air*. Translated by Dino Ferrari. Washington, D.C.: Air Force History and Museums Program, 1998. Page 51.

¹¹ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Pages 310-311.

¹² Ibid, Page 313.

¹³ Ibid, Page 313.

¹⁴ Larrabee, Eric. *Commander in Chief: Franklin Delano Roosevelt, His Lieutenants and Their War*. New York: Simon and Schuster, 1987. Reprint, Annapolis: Naval Institute Press, 2004. Page 599.

capability – American war production – to bear against the Germans. Therefore, any Allied claim to a decisive air power victory would have to ignore – among other things - the substantial naval effort that brought the American war economy to Europe.

However, one aspect of Douhet's championed attacking strategy was born out in the European theater: the envisioned disadvantage of a nation equipped only for air combat (vs. attacking/offensive bombing). This disadvantage fully materialized in Germany's war economy¹⁵ when Germany dispersed forces and made production tradeoffs in support of the resource-intensive deployment of over 10,000 anti-aircraft guns. This effort diverted approximately 500,000 trained personnel to staff them.¹⁶ Defense efforts not only soaked up manufacturing capacity from being dedicated to the Eastern or Western fronts, but the 500,000 trained personnel could have given Germany an additional army to field.

Additionally, as the air war over Germany escalated in 1943, German fighters were redistributed from all fronts to defend German airspace.¹⁷ This action reduced air power to all fronts – but critically to the heavily contested Eastern Front. Again these events confirmed Douhet's theory that there was an advantage in attacking, but without confirming decisive effects. His vision failed to account for the profound resiliency industrialization had brought to modern warfare.

Douhet prediction #2 – air powers will target non-combatants

Just as Douhet predicted offensive advantages, he correctly anticipated that air powers would cease to discriminate between combatant and non-combatants. However, while the targeting

¹⁵ Douhet, Giulio. *Command of the Air*. Translated by Dino Ferrari. Washington, D.C.: Air Force History and Museums Program, 1998. Page 53.

¹⁶ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Page 332.

¹⁷ O'Brien, Phillips. "East versus West in the Defeat of Nazi Germany." *Journal of Strategic Studies* 23, no. 2 (June 2000). Page 97.

non-combatants was confirmed – this tactic failed to achieve his stated decisive effects. For example, as the war unfolded, the deliberate area bombing against civilian populations eclipsed the collateral damage from strategic bombing of militarily relevant targets. Yet, the German strategic objectives were steadfast. Douhet never envisioned the irony that as German defenses proliferated against increased area bombings, the German population was re-assured by the thundering, visible anti-aircraft response.¹⁸ However, it was not just a false sense of confidence from anti-aircraft that buttressed the German state. He never imagined the resolve of a modern, industrialized state to mobilize police to keep the population in line and the war economy functioning..¹⁹

Douhet prediction #3 – Defend against aerial offensives only by attacking air power production

Further, Douhet foretold of a new reality in which one could only defend against air attack through one's own air offensive against enemy air power production. This idea, however, was disproven by the effects of heavy casualties on Allied actions. Douhet failed to understand that casualties could be strategically exploited – perhaps in combination with an information campaign - against a Democratic adversary like the United States or Britain. The Germans also did not understand this potential or at least failed to exploit it fully. An information campaign that exploited low tolerance for casualty rates might have indirectly attacked the Allies since Germany could not directly attack the larger American war production economy. In 1943 for instance, despite successful targeting of critical ball-bearing production facilities during the

¹⁸ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Page 332.

¹⁹ Ibid, Page 332.

Schweinfurt and Regensburg raids, “heavy losses and serious morale problems”.²⁰ kept the Eighth Air Force from pressing their advantage before critical German infrastructure could be dispersed or repaired.²¹ This evidence supports the idea that at least British and American leaders were influenced by losses.

Further, Britain and America had initially looked to air power in their search of a “high-tech and low-casualty” path to victory.²² But by 1943 when both sides were taking substantial losses in the air war,²³ air power was not living up to that expectation. Both America and Britain were pressured to consider the “cost in lives of every operation.”²⁴ This point is important because it demonstrates that Germany failed to exploit an alternative strategy to the attacking imperative. Had Germany concentrated on inflicting unacceptable rates of loss on the Allies – and making those losses known to the American and British public, it might have been possible to guard key critical infrastructure against attack or perhaps even to change the Allied objective of unconditional surrender.

A similar indirect strategy alternative to targeting Allied air power production could have focused on pilot attrition. In the end, attrition rates favored the Allies because they possessed greater pilot reserves.²⁵ Attrition finally broke the German air fighter defense in 1944. Had

²⁰ O'Neill, William. *A Democracy at War: America's Fight at Home and Abroad in World War II*. New York: The Free Press, 1993. Page 301.

²¹ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Pages 314.

²² O'Neill, William. *A Democracy at War: America's Fight at Home and Abroad in World War II*. New York: The Free Press, 1993. Page 301.

²³ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Pages 316-317. Luftwaffe's pilot attrition reached 141 percent. Rates were even higher among America's Eight Air Force.

²⁴ O'Neill, William. *A Democracy at War: America's Fight at Home and Abroad in World War II*. New York: The Free Press, 1993. Page 301.

²⁵ Ibid, Page 317.

Germany trained and maintained deeper pilot reserves, it might have been the Allied strategic bombing campaign that broke first.

Mitchell prediction – air power eliminates the traditional function of armies and navies

Brigadier General Billy Marshall's notable prediction that air power would eliminate the need for land and naval forces.²⁶ never materialized. A notable practitioner-advocate of air power, Marshall particularly singled out the surface navy as an obsolete institution. He based his vision on assumptions that ships would never command the sea against aircraft and submarines, making traditional transport of troops by surface ships impossible..²⁷

But the examples to the contrary are well known. Operation Overlord, for example, saw naval vessels employed in the traditional role of transported troops..²⁸ Additionally, the American convoy strategy succeeded in wresting control of the North Atlantic through the creation of the tenth fleet²⁹ and maintaining a precarious, but effective command of the North Atlantic. This traditional role of the Navy was imperative for Russian survival, for British persistence, and for launching the Allied land force that defeated Germany.

Could air power have grown into a decisive strategy?

Some might assert that air power's decisive effects were not achieved early in the war because the Allied air strategy was too early a stage. Instead, one might highlight the beginnings of a

²⁶ Larrabee, Eric. *Commander in Chief: Franklin Delano Roosevelt, His Lieutenants and Their War*. New York: Simon and Schuster, 1987. Reprint, Annapolis: Naval Institute Press, 2004. Page 167.

²⁷ Larrabee, Eric. *Commander in Chief: Franklin Delano Roosevelt, His Lieutenants and Their War*. New York: Simon and Schuster, 1987. Reprint, Annapolis: Naval Institute Press, 2004. Page 166

²⁸ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Page 411.

²⁹ Larrabee, Eric. *Commander in Chief: Franklin Delano Roosevelt, His Lieutenants and Their War*. New York: Simon and Schuster, 1987. Reprint, Annapolis: Naval Institute Press, 2004. Page 180.

successful air power strategy in 1944 when Allied air power came under the command of the Supreme Commander Allied Expeditionary Forces Europe..³⁰ During this time, air power joined an agenda of theater goals aligned with the invasion of Normandy..³¹ Under a unified operational approach, the Allies attacked transportation networks and the German petroleum industry to degrade resistance in France. Indeed, the joint attacks successfully hobbled the Germans and impacted German mobility so much as to complicate the German retreat..³² Therefore, one might conclude that decisive effects were not out of reach.

This conclusion would support the assertion that once the Allies located the true lynchpins of the German economy in 1944, decisive effects were measurable. As evidence, one could offer that in September 1944 American pressure on the German fuel industry combined with new attacks on the German transportation network immobilized the war economy. By spring 1945 the German war economy collapsed, and the German army surrendered. Although the will to fight did not break, once air superiority disrupted the economy and forced surrender, one could argue that air power had achieved its decisive victory.

However, the effect of rendering the war economy immobile was achieved slowly, haphazardly, and only had a slowing effect on German resistance. The effects were too gradual to be considered decisive and required continued bombing for effects to be maintained. Additionally, the German Ardennes offensive and rearming of the surviving divisions in late 1944 revealed that the German army was still capable of makeshift planning and executing ground operations – despite air power’s destruction of key resources. Importantly, one must

³⁰ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Page 326.

³¹ Murray, Williamson and Alan R. Millet. *A War to Be Won: Fighting the Second World War*. Cambridge: Harvard University Press, 2000. Page 326.

³² Ibid, Page 329.

consider that traditional land forces were the main effort to defeat of these last stands, as were traditional naval forces the main effort in bringing the Allied war economy to bear against the Germans. Together, all three services were decisive, but not anyone alone.

Conclusion

The Allied air performance in the European theater from 1943-1945 only partially confirmed predicted strategic employment of air power. The performance failed to capture a decisive victory. Oversimplification of air power's effects can essentially be traced to the dynamic of how industrialized societies adapted in the fog of war. However, the Allied air performance validated Douhet's theory that air power would bring offensive advantages while causing a defender to disperse forces and make unsound war economy concessions. This effect was seen when Allied air power maintained an offensive strategy after 1943 – even though the effort was only joint in a few instances such as Operation Overlord. However, in its offensive strategy, the Allied air forces' performance did not confirm Douhet's theory that attacking was the only viable defense against air power. In his attacking imperative theory, Douhet notably failed to consider factors such as the strategic depth of a war economy. Nor did he envision potential alternative strategies for a weaker adversary such as exploiting the political vulnerability of Democratic adversaries to casualty and loss.

Brigadier General Billy Mitchell's predictions that traditional land and naval institutions were obsolete failed to hold up in the realities of World War II. His predictions particularly failed in the timeframe of 1943-1945 when convoys were instrumental in integrating American war economy to the Allied effort, and an invasion force fought across the continent to conclude the war. Finally, despite winning command of the air/air superiority, taking the offensive, targeting non-combatants, and degrading the adversary's war economy with air power, a decisive air

power victory eluded the allied air forces. Only through a mix of other instruments of war working in conjunction with allied air power were the allies able to achieve their unlimited political objective.