Unity Makes Strength: The Cooperation of Air Force Units on D-Day

On July 6, 1944, or D-Day, around 160,000 Allied forces[1] landed on multiple beaches on the coast of Normandy, and they faced around 50,000 German soldiers. The invasion, Operation Overlord, involved naval attacks on Normandy: the Allies would storm the beaches by surprise and push Germany back from France. It worked: within a year after the invasion, Germany surrendered. The Allies used many different technologies and strategies in conjunction with each other to achieve a decisive advantage over Germany, including the Boeing B-17 "Flying Fortress", the drop-off of infantry and paratroopers behind enemy lines, and the use of combat airplanes like the P51-Mustang fighters. While each of these were important, the resounding success of D-Day is the result of their combination and proved that sometimes the whole is greater than the sum of the parts.

The Boeing B-17 "Flying Fortress" is one of the most famous aircraft used during World War II, and was designed specifically for heavy daylight bombing of the German forces. This plane was equipped with machine guns and used four engines rather than the standard two.[2] To resist German anti aircraft artillery and fighter planes, the B-17 had to fly at high altitudes within a tight formation. The bombardiers on the plane achieved accuracy by using the Norden bombsight, which had a gyroscopically stabilized telescope along with an electromagnetic computer that, when information such as the altitude, drift, atmospheric conditions, and air speed

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[1] "Remembering D-Day: Key Facts and Figures about Epochal World War II Invasion." *AP News*, 5 June 2023, apnews.com/article/d-day-invasion-normandy-france-nazis-07094640dd7bb938a23e144cc23f348c#.

[2] Guilmartin, John F. "B-17 | Crew, Range, & Bomb Load." *Encyclopædia Britannica*, 10 Feb. 2017, www.britannica.com/technology/B-17.

was put in, was able to accurately pinpoint targets like factories or military strongholds. Much of the Allied war effort in 1943 and 1944 went into long-distance bombing raids of Germans cities and industrial centers. This included raids on German aviation fuel and airplane factories, which weakened Germany's ability to retain a strong air force and limited their industrial and military production; had Germany been able to design and build weapons without disturbance, they might have developed a jet-powered airforce, more accurate missiles, and perhaps even an atomic bomb. The B-17 was instrumental in these Allied efforts.

But while the B-17 was heavily armed with machine guns and 6,000 pounds of bombs,[3] it could not fly unescorted into raids due to the strong German air defense system, which included fighter planes like the Messerschmitt BF-109 and the Focke Wulf 190. This was alleviated when the P-51 Mustang fighter plane started escorting and protecting the B-17. With this added protection, the bombers broke through German defenses and won air superiority, which was crucial on D-Day. Without these Mustangs, the Boeing B-17 was vulnerable, and the Allies might have lost the aerial advantage permanently.

Due to their long-range support capabilities, the P-51 Mustang was widely considered the best operational fighter plane during World War II. These planes were crucial to the longevity of B-17 bombing raids during the war, because they provided the necessary firepower to defeat German aircraft. At the start of the war, America's first generation fighter plane was the P-40 Warhawk. This plane competed well with Germany's first generation BF-109[4] but not at the high altitudes that the bomber squads flew, where it lacked speed and power. The most widely

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[3] "Assaulting the Reich: The Boeing B-17 Flying Fortress." *The National WWII Museum | New Orleans*, 2020, www.nationalww2museum.org/war/articles/boeing-b-17-flying-fortress.

[4] Smithsonian. "World War II Aircraft." *Smithsonian Institution*, 2019, www.si.edu/spotlight/wwii-aircraft.

produced version was the P-51D, which featured a new "bubble-top" canopy designed to improve the pilot's vision, a new K-14 gunsight, more machine guns, a longer flight range, and a simpler reloading system for ammunition.[5] Since the plane had a longer range, it was able to accompany the Boeing B-17 on bombing campaigns into Germany without the bomber being shot down.The P-51, which by 1942 had a much more powerful engine and a much longer range, became the new escort of choice. Germany countered with an upgraded FW-109, but they simply did not have enough resources to build and distribute them in large enough numbers, due to the bombings of factories. German factories that produced airplanes and aviation fuel were constantly under fire by the Allied forces, while America's factories were unharmed on the other side of the Atlantic Ocean. The German first-generation plane had to compete with America's second-generation plane, and lost.

Of all the squadrons that flew the Mustang, the Tuskegee Airmen were perhaps the most famous. This African American group of fighter pilots was the first group of P-51 pilots that constantly remained by the B-17's side, ensuring great success during bombing campaigns. With great pilots, superior technology, and a solid research and production base, the Mustang was the primary fighter plane during the war. They achieved air superiority over the Luftwaffe, and ensured that the bombing campaigns successfully bombed the targets that would cripple the Axis forces, including oil shipments, railroads and railway stations, factories, aircraft assembly plants, and military outposts. Later, after Operation Overlord and during the Allied invasion of France, the Mustang was also used to support ground troops by bombing enemy supply and communication lines.

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[5] "North American P-51D Mustang." *National Museum of the United States Air Force™*, 20 Apr. 2015, www.nationalmuseum.af.mil/Visit/Museum-Exhibits/Fact-Sheets/Display/Article/196263/north-american-p-51d-mustang/.

Many of the P-51 Mustangs also provided crucial support to over 18,000 American and British infantry and paratroopers[6] who had to achieve their goal in the foggy darkness at midnight, before the invasion started. Their goal was to get behind German lines and disrupt supply lines and escape routes. They also had to capture points behind the beaches where the Allies were to land, to secure the flanks of the assault. On D-Day, there was heavy cloud cover and limited visibility along with strong German resistance, which caused some aircraft and paratroopers to land outside their landing zones. However, the paratroopers in the 6th Airborne Division were still able to destroy bridges across the Dives River to stop the German forces from returning to the area. Glider troops captured the only two bridges over the Caen Canal and Orne River, effectively controlling the only crossing points between the canal and the sea. Throughout these operations, Allied troops received valuable air support especially from Mustangs, thousands of which flew sorties on that day especially to ensure air superiority. As a result, the Luftwaffe could not really counter the Allied ground attacks. Once air superiority was achieved, Allied forces were able to achieve their ground objectives but also to send out aerial reconnaissance teams. This meant that they could obtain important information about the German defenses, which they relayed to the deployed paratroopers, who could then strategically weaken points of the German lines. The ground troops were crucial to the invasion; however, they could not have carried out the invasion on their own.

The individual factors of Operation Overlord were all important on their own, but if they hadn't all come together the invasion wouldn't have been successful. The Boeing B-17 was a huge component of the Allied strategic bombing campaigns, but without the P-51 Mustang for support, the bombers would have been a much easier target to take down, as seen by the first few

[6] Imperial War Museums. "How D-Day Was Fought from the Air." *Imperial War Museums*, 2018, www.iwm.org.uk/history/how-d-day-was-fought-from-the-air.

failed raids. Without aerial support, the paratroopers landing behind enemy lines, away from the beaches of Normandy would only be able to rely on themselves and the Navy, losing the added reinforcement of the Air Force helping bomb the enemy supply lines. The Battle of Normandy taught an important lesson about institutional and international cooperation that is still necessary today. Allied forces relied on each other for new technology, new strategies, and reinforcements. Since France, the Soviet Union, the United States, and Great Britain united and worked towards one common goal, they were able to defeat the Axis forces, overcoming logistical obstacles (like the weather, causing a delay in possibly the most difficult military operation ever planned). The battle also taught us to not just rely on one technology: the B-17 and the P-51 were viable on their own, but together they were able to defeat the Luftwaffe entirely. We should constantly try to use several different insights and technologies rather than fully depending on one, and diversifying operations and personnel is probably an important factor in gaining such advantages.

The Battle of Normandy and the strategies used to make it a success have also impacted my own life. Since I live in Montgomery, Alabama, I live right near Tuskegee, the city where the Tuskegee Airmen started, and I have always admired them. They volunteered to be America's first Black air squadron, and trained for years to become pilots, navigators, and bombardiers.[7] During the war, they had some of the least losses out of any escort fighter group, and their services were highly in demand from many bomber squads. I recently went to the air show at Maxwell Air Force Base so I could see the planes they flew, and I became even more impressed with their courage and determination. Then came all the aerial displays, and finally the Blue Angels, and that changed my future plans. I had thought about the US Naval Academy, because

[7] University, Tuskegee . "Tuskegee Airmen Facts | Tuskegee University." *Tuskegee.edu*, 2019, www.tuskegee.edu/support-tu/tuskegee-airmen/tuskegee-airmen-facts.

they have a sailing team, but after seeing the Blue Angels' precision and synchronization while flying, I decided that I for sure want to attend the Naval Academy for college and serve in the military.

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