

Development of a Military Aircraft

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EDITORIAL

Any sort of aircraft that has been modified for military purposes is referred to as a military aircraft. A military aircraft is any fixed-wing or rotary-wing aircraft operated by any form of lawful or insurgent armed service. Military aircraft can be fighting or non-combat in nature:

- Combat aircraft are built to destroy hostile equipment with their own weaponry. Only military forces normally design and acquire combat aircraft.
- Non-combat aircraft are not designed for warfare as a primary mission, but may carry self-defence armaments. These are primarily support vehicles that can be built by either military forces or civilian organisations.

Since the mid-twentieth century, aircraft have been an essential component of military might. All military aircraft, in general, fall into one of the following categories: Fighters safeguard crucial airspace by driving off or killing opposing aircraft; bombers are larger, heavier, and less manoeuvrable craft meant to attack surface targets with bombs or missiles. When the first functional aircraft (hot-air and hydrogen balloons) were developed in 1783, they were soon adopted for military purposes. The French Aerostatic Corps was the first military balloon force, flying an observation balloon during the Engagement of Fleurus in 1794, the first major battle to feature aerial observation.

During World War I, German Zeppelin airships carried out numerous air raids on British cities while also serving as observation platforms. The US Navy acquired numerous non-rigid airships in the 1920s, with the K-1 being the first to see service in 1931. The US and other countries continued to use them until the Second World War, when the US Navy retired them. Several militaries got interested in powered aircraft soon after the Wright Flyer's initial flight. The Wright Military Flyer, a two-seat observation aircraft, was purchased by the US Army in 1909 for the Aeronautical Division of the US Signal Corps. It served until 1911, when powered aircraft had become a standard element in many armies around the world.

During the Italo-Turkish war, planes flew reconnaissance and tactical bombing missions and the First Balkan War saw the first

naval-air actions. Air combat was a significant component of World War I, as fighter aircraft were developed, long-range strategic bombing became a possibility, and planes were deployed from aircraft carriers. Airplanes also expanded on a wider range of support missions, most notably medical evacuation, and introduced new armaments such as air-to-air rockets to counter reconnaissance balloons. Airships, rather than aeroplanes, were the most formidable aircraft in the years preceding World War I. Airships were enormous self-propelled boats made up of a stiff fabric-covered metal frame and gas bags filled with a lighter-than-air gas such as hydrogen. The largest airships conceived and built in Germany by Ferdinand, Count von Zeppelin were the most ambitious examples of this type of craft.

In 1914–18, military air transport made little progress. Aircraft were employed to deliver supplies to cut-off or besieged forces on occasion, but the tactics were crude at best: sacks of food, medical supplies, or weapons were dropped from bomb racks or simply heaved over the side. It was technologically based on the Avro 504J, a specialized training aircraft with dual controls, strong handling qualities, adequate power, and in-flight communication between instructor and student using an audio device made of soft rubber tubing known as the Gosport tube.

An Airborne Early Warning and Control (AEW&C) system is a long-range radar system designed to detect aircraft, ships, and ground vehicles as well as govern and command the battle environment during an air conflict by directing fighter and attack aircraft hits. AEW&C units are also utilised for surveillance, including observation over ground targets, and typically undertake C2BM (command and control, battle management) responsibilities, analogous to an Airport Traffic Controller given military command over other forces. The radars on the aircraft, when used at high altitude, allow the operators to discern between friendly and hostile aircraft hundreds of miles away. AEW&C aircraft are used for both defensive and offensive air operations, and are equivalent to a Navy Warship's Command Information Center, with a highly mobile and powerful radar platform, for NATO and US troops trained or integrated Air Forces. The system is used both offensively and defensively to lead fighters to their target locations and to counterattack enemy troops, both air and ground.

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