

STEM Works

UAV[yu-a-ve]

UAV is an acronym for Unmanned Aerial Vehicle. A UAV is an aircraft with no pilot on board. UAVs can be remotely controlled aircraft (flown by pilots in ground control stations); alternatively, they can be made autonomous through the use of pre-programmed flight plans or more complex control systems. UAVs were first developed for military applications and are widely employed in roles such as reconnaissance, surveillance and attack.

1792 The earliest UAVs take the form of balloons. In France, the Montgolfier brothers are the first to experiment with balloons and send unmanned aerostats aloft in preparation for manned flight. During the American Civil War of 1861-1865, the Union Army launches unmanned balloons containing incendiary devices to start fires on the Confederate side of the battle lines.

1918 The Kettering Aerial Torpedo is built by the Dayton-Wright Airplane Co. with Orville Wright acting as an aeronautical consultant and Elmer Ambrose Sperry as the control and guidance system designer. Once launched, a small onboard gyroscope guides the aircraft to its destination using a pneumatic/vacuum system, an electric system and an aneroid barometer/altimeter.

1942 ATV-controlled Interstate BQ-4/TDR aircraft carrying an onboard camera is successfully guided into a target ship from a control aircraft 50 km (30 miles) away.



Source: DoD photo by Capt. Jane E. Campbell, U.S. Navy. (Released)

1951 The Ryan Firebee UAV is designed to be a jet-powered gunnery target. It develops into a capable unmanned surveillance system in the 1960s. As the AQM-34, it flies more than 34,000 ISR sorties over South-east Asia during the Vietnam War.

1989 Abraham Karem at General Atomics introduces the Gnat 750. Equipped with video cameras, it flies reconnaissance missions over Bosnia while being controlled by ground personnel in nearby Albania. The Gnat 750 is the precursor to the well-known RQ-1/MQ-1 Predator and its variants.

1998 The Northrop Grumman RQ-4 Global Hawk initially designed by Ryan Aeronautical provides a broad (high

altitude) overview and persistent surveillance using high resolution synthetic aperture radar (SAR) and long-range electro-optical/infrared (EO/IR) sensors.

2012 The FAA Modernization and Reform Act of 2012 sets a deadline of September 30, 2015 for the agency to establish regulations allowing the use of commercial UAVs in U.S. airspace.

2014 BP wins the first Federal approval to fly unmanned aerial vehicles over U.S. land for commercial purposes. UAV maker AeroVironment uses its aircraft to survey BP pipelines, roads and equipment near Alaska's Prudhoe Bay.

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