



GUIDANCE IN THE AIR

Inventors were **working on drone technology** before the **Wright brothers' first flight**.

Others continued to work on UAVs after the war. An early invention for a UAV deployed from a manned aircraft is disclosed in Patent No. 1,818,708 (1931).

In World War II, the U.S. Army procured drones from the Radioplane Co. on Hollywood Boulevard in California. Reportedly, Norma Jeane Mortenson (later rechristened as Marilyn Monroe) was a technician there. One of Radioplane's patents is No. 2,257,277 (1939) for a drone with a parachute that can be remotely deployed for easier landings and recovery.

8,011,616 (2011), hydrogen-powered UAVs.

Another idea is to deliver mail using drones as disclosed in pending U.S. Patent Application No. 2014/0254896 by the Zhou brothers—Tiger, Dylan, and Andrew. Now Amazon and others are hoping to deliver packages using UAVs. Amazon's pending Patent Application is No. 2015/0120094.

Who first had that idea? Tesla again. Tesla's 1898 patent concludes as follows: "The invention which I have described

Drone delivery is becoming a big deal, especially with Amazon planning to deliver packages via unmanned aerial vehicles. But autonomous vehicles have been invented and patented for more than a century, often with an eye for delivering bombs, not books.

The original idea to remotely control different kinds of vessels likely belonged to Nikola Tesla. His patent for the invention, No. 613,809 (1898), primarily pertains to a remotely controlled boat ("waves or disturbances are conveyed to the vessel in order to control it") but it also notes that the invention applies to other "vehicles." Remember, this was before the Wright brothers' first powered flight at Kitty Hawk.

An early patent which more clearly pertains to an actual airplane controlled by a radio is Patent No. 1,304,314 (1919) for a "wireless controlled flying torpedo."

L. B. Sperry later invented and patented a "mechanically piloted" airplane with a gyroscope for stabilization. This might be the first truly autonomous UAV. Two Sperry patents, 1,418,605 (1922) for an aerial torpedo and 1,670,641 (1928) for a "mechanically-piloted dirigible device," are part of a flying bomb project, which was of interest to the military in World War I but never deployed.

L.B. SPERRY'S PATENT FOR A "MECHANICALLY PILOTED" AIRPLANE WITH A GYROSCOPE FOR STABILIZATION MIGHT BE THE FIRST FOR A TRULY AUTONOMOUS UAV.

The first UAV patent I can find where the UAV has a camera for transmitting images back to the controller is the U.S. Navy's Patent No. 2,649,262 (1945).

During the Vietnam War, the Teledyne Ryan Aeronautical Co. manufactured jet-powered drones launched and controlled from C-130s. One Teledyne patent, No. 3,703,998 (1972), pertains to a jet-powered drone with wings that fold for storage and transport inside an aircraft bomb bay.

Of course, probably the most well-known drone is the Predator built by General Atomics Aeronautical Systems Inc. One patent for the Predator is No. 5,918,832 (1999).

Today, numerous initiatives exist for UAVs. One is to fly longer. AeroVironment Inc. specializes in long-range solar-powered and, as disclosed in Patent No.

will prove useful in many ways. Vessels or vehicles of any suitable kind may be used, as life, dispatch, or pilot boats or the like, or for carrying letters, packages, provisions, instruments, objects, or materials of any description, ... but the greatest value of my invention will result from its effect upon warfare and armaments, for by reason of its certain and unlimited destructiveness it will tend to bring about and maintain permanent peace among nations."

Alas, Tesla's prediction of peace among nations has yet to be realized. **ME**

KIRK TESKA is the author of Patent Project Management and Patent Savvy for Managers, is an adjunct law professor at Suffolk University Law School, and is the managing partner of landiorio Teska & Coleman, LLP, an intellectual property law firm in Waltham, Mass.