

From the Cockpit
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Linda Pfeiffer Pauwels

Even though the re-enactment of the Wright brothers' first flight did not go as planned, our spirits still managed to lift off at Kill Devil Hills, N.C., that soggy and windless Dec. 17 morning 100 years later, as headlines around the world paid homage to those who ushered in human flight. Here are some questions and answers about the early days of flight, plus some modern-day info.

When was the first pilot license issued?

The first "pilot-aviator" licenses were granted by the Aero-Club de France on Jan. 7, 1909. License No. 1 went to Louis Bleriot, soon followed by Alberto Santos-Dumont and the Wright brothers.

Who were the first air passengers?

They were an unlikely trio consisting of a sheep, a rooster and a duck, making a two-mile flight over Paris inside the wicker basket of a Montgolfier hot-air balloon. The date was Sept. 19, 1783. See www.flight100.org/history/timeline.cfm?period=1700s for more information.

I saw a really cool picture showing a Boeing 737 jet taking off over the shadow of the Wright Flyer. The B737 had some things on the wingtips that stick straight up. I've noticed more and more planes have them. What are they called and what is their purpose?

They're called winglets. Several airliners have them, like the Airbus A319 and A320, which have small winglets on top and underneath the wing. The larger Airbus A330 and the four-engine A340, as well as the newer Boeing 747 – the 400 model – also use them. Many new executive jets are being designed with winglets, and older ones can be retrofitted, adding winglets to an existing wing.

Winglets reduce drag and boost a jet's performance, allowing for fuel savings. They also decrease wingtip vortices, the potent swirls of air that trail behind all airplanes, formed as high- pressure air under an aircraft's wing curls upward around low-pressure air flowing above the wing. Wingtip vortices cause wake turbulence, which can be especially dangerous for aircraft taking off, landing or flying behind large jetliners.

One of the main reasons all airplanes don't have winglets is that the airflow around them is complicated, making them tough to design and requiring careful testing on each type of aircraft. Similar drag-reducing effects can be achieved by extending the wing's span instead.

I'm planning a trip to the Caribbean. We're going to take scuba-diving lessons and I heard that the pressure on airplanes makes it dangerous to fly after scuba diving. Is that true?

Divers can be at risk for decompression sickness, commonly referred to as "the bends" This condition is caused when nitrogen gas dissolved in body tissues and blood escapes and forms bubbles in the blood, which may injure body tissues and block blood vessels.

The American Academy of Family Physicians advises passengers who have been scuba diving to wait at least 12 hours before flight if making one dive per day. For multiple dives or when decompression stops are required, a waiting time of 24 hours is recommended before flying. See familydoctor.org/x1774.xml for information about scuba diving safety.

For more information, ask your doctor and talk to diving authorities before travel.