## Ed Yost

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This article is about the balloonist.


Paul Edward Yost (30 June 1919-27 May 2007) was the American inventor of the modern hot air balloon and is referred to as the "Father of the Modern Day Hot-Air Balloon." He worked for a high altitude research division of General Mills when he helped establish Raven Industries in 1956.

## Inventor

Born on a farm 7 miles south of Bristow, lowa, Yost first became involved in lighter-than-air ballooning when he leased his single-engine plane to General Mills to track their gas balloons. He became a senior engineer in the development of high-altitude research balloons.

In the 1950s, Yost's own interests turned toward reviving the lost practice of manned hot-air ballooning. This technology had first been invented in France by in the late 18th century by pioneers led by the Montgolfier brothers, but under the Montgolfier system, the balloon's air was heated by a ground fire prior to the balloon being released. The inherent danger of this type of balloon flight led to the system being abandoned when hydrogen and later helium became available.

One of Yost's key engineering insights was that a hot-air balloon could be made to carry its own fuel. The invention of relatively light burners fueled by bottled propane made it possible for the balloonist to re-heat the air inside the balloon for a longer flight. Yost's invention improved modern hot-air balloons into semi-maneuverable aircraft. Yost's other hot-air balloon patents included nonporous synthetic fabrics, maneuvering vents, and deflation systems for landing. Yost also designed the distinctive "teardrop" shape of the hot air balloon envelope itself. This hot-air balloon image has
become an icon, used, for example, on the standard license plate of motor vehicles registered in New Mexico.

## Aviator

In October 1955, Yost developed and flew the first prototype of the modern hot-air balloon in a tethered flight. The envelope was plastic film, and heat was provided by burning kerosene. This prototype flight uncovered conceptual flaws that Yost worked to overcome.

On 22 October 1960, Yost made the first-ever free flight of a modern hot-air balloon from Bruning, Nebraska. ${ }^{[2]}$ His balloon flew untethered for 1 hour and 35 minutes (1:35) with the aid of heat generated by a propane burner. The balloon's 40 -foot ( 12 m ) envelope was sewn from heat-resistant fabric especially selected by Yost for this purpose. After further refining and improving on this designs and materials, in 1963 Yost piloted the first modern balloon flight across the English Channel with crew member Don Piccard in a balloon later named the "Channel Champ." In 1976, Yost set 13 aviation world's records for distance traveled and amount of time aloft in his attempt to cross the Atlantic Ocean -solo- by balloon. He designed and built his balloon, the "Silver Fox," himself, partly in his home garage. It featured a gondola that was shaped like a boat in the event that he would be forced down at sea - which is precisely what occurred. Although he had traveled far in excess of the distance needed to reach Europe from his launch point off the coast of Maine, his flight path began to point South rather than the hoped-for East direction due to inaccurate weather forecasting. The dream was achieved two years later with Yost's assistance in a Yost-built balloon, Double Eagle II.

Yost also contributed to the advancement of the sport of ballooning and lighter-than-air flight. He helped to found the Balloon Federation of America (BFA) and assisted in the organization of the first U.S. National Ballooning Championship at Indianola, lowa. Yost founded the Balloon Historical Society (BHS) in 2002, which dedicated four monuments on the rim of the Stratobowl on 28 July 2004, to memorialize the Stratobowl projects in the 1930s as well as the second flight of a modern hot-air balloon.

On 27 May 2007, Yost died of a heart attack at the age of 87 at his home in Vadito, near Taos, New Mexico. He was buried in the Allison cemetery in Allison, Iowa.

