

History for Ballooning

Hot air balloons are the oldest successful human flight technology, dating back to the Montgolfier brothers' invention in Annonay, France in 1783. The first flight carrying people was made on November 21, 1783, in Paris by Pilâtre de Rozier and the Marquis d'Arlandes. Hot air balloons that can be propelled through the air rather than just being carried along through the wind are known as airships or, more specifically, thermal airships. Good features of ballooning consist of the outstanding quiet (except when the propane burners are firing), the lack of any perceptible sensitivity of movement and the birds-eye view. While the balloon moves with the wind, the passengers sense absolutely no wind, apart from the short phase through the flight when the balloon ascends or descends into air currents of different direction or speed.

Hot air balloons can fly to very high altitudes. On November 26, 2005, Vijaypat Singhania set the world altitude record for highest hot air balloon flight, reaching 69,852 feet (20.29 km). He took off from downtown Bombay, India and landed 150 miles south in Panchale. The previous record of 19,811 meters (64,980 ft) had been set by Per Lindstrand on June 6, 1988 in Plano, Texas. The furthest that a hot air balloon has ever been flown is 7,671.91 km. In January 15, 1991, the *Virgin Pacific Flyer* balloon accomplished the longest flight in a hot air balloon when Per Lindstrand and Richard Branson of the UK flew from Japan to Northern Canada.

The lift of the balloon is determined by the temperature difference between the inside and outside air. On a hot day, the balloon cannot be filled as much as on a cool day, because the temperature required for launch will exceed the maximum sustainable for nylon. Most hot air balloon launches are made during the cooler hours of the day, at

dawn or two to three hours before sunset. This is also to avoid thermals, which are vertical air currents caused by ground heating, making controlling a balloon more difficult. A hot air balloon flight starts with unpacking the balloon from its carrying bag. A gasoline powered fan is used to blow cold air into the envelope. The cold air partially inflates the balloon to establish its basic shape before the burner flame is aimed into the throat heating the air inside. A crew member stationed opposite the throat, holds a rope (crown line) tied to the apex of the envelope. The "crown-man" acts as a dead weight in order to slow the envelope's rise so that the envelope can achieve maximum inflation before standing erect. Once the balloon is upright, pilot and passengers climb into the basket. When the pilot is ready for launch, more heat is directed into the envelope and the balloon lifts off.