Ballooning With RE/MAX

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From Annonay to Albuquerque

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From Annonay to Albuquerque

Human beings flew in the imagination long before they flew in the air. In myths and folktales around the world, men and women escape the bonds of earth as easily as birds and drift as freely as the clouds. They ride giant eagles and winged horses. They rise in baskets pulled skyward by griffins. They wear wings of their own. They sit on magic carpets. Sometimes they fly just by stretching out their arms. In the mind, there is virtually no end to the ways we can rise into the sky.

Devising actual ways to join the birds took longer, and when we did, we first floated like clouds, lighter than air. Fixed-wing aircraft, imitating bird forms, did not fly until more than a hundred years after the first balloons rose in France near the end of the 18th century.

"Promptly prepare a provision of taffeta and ropes, and you will see one of the most incredible things in the world," Joseph Montgolfier wrote in a letter to his brother, Etienne, in 1782. Joseph's experiment with a cloth bag over a fireplace led to months of experimentation with cloth, paper and smoke at the Montgolfiers' paper mill near Annonay, France. The brothers sent up their hot air balloons on tethered manned flights as well as the famous free flight carrying a duck, rooster, and a sheep.

Near the end of November 1783, Pilatre de Rozier and the Marquis d'Arlande became the first human aeronauts when they rose from the earth in the Montgolfiers' blue sphere decorated with the golden face of the sun god Apollo. The two men fed the fire at the base of the balloon with straw, setting the balloon fabric on fire, and extinguished the flames with a sponge and a bucket of water. D'Arlande was astonished at how silent it was as they drifted over Paris. Twenty-five minutes after launching, they landed gently, five miles away from where they had lifted off.

Only a week and a half after that first manned flight, Professor Jacques Charles and Noel Robert launched their gas balloon from the Tuileries Gardens in Paris and touched down 27 miles away. After Robert climbed out, Charles ascended again, this time to such an altitude that he saw his second sunset that day.

Of the two kinds of balloons, the gas balloon was easier to transport and work with than the hot air variety and could remain aloft for longer periods of time. After a few spectacular ascensions, the hot air balloon was practically abandoned throughout the 19th century and the first half of the 20th while the popular gas balloon was flown for recreation and entertainment and used in warfare and scientific research.

While ballooning began more than two centuries ago, hot air ballooning as we know it is less than 50 years old. In the 1950s, former aviator Ed Yost began experimenting with lighter-than-air craft. He developed the envelope and burner system, which evolved into the modern hot air balloon, with ripstop nylon envelope and propane fuel system. Now known as the "Father of Modern Hot Air Ballooning," Yost made his first flight October 10, 1960, at Bruning, Nebraska.

Since then, along with the development of balloon materials and balloon manufacturing, hot air ballooning has evolved into the colorful sport it is today, each year drawing millions of people to balloon festivals around the world. What those millions go to watch is what the imagination saw first: the spectacle of human beings rising into the air.

The RE/MAX real estate franchise network was in its infancy when some of its affiliates invested in a hot air balloon as advertising and flew it at the 1978 Albuquerque Hot Air Balloon Fiesta. To headquarters executives, the red, white and blue balloon flying free "Above the Crowd" embodied RE/MAX values of independence, freedom and professionalism. The balloon image soon became the corporate logo, and the number of RE/MAX Hot Air Balloons grew steadily. There are now more than 100 RE/MAX Balloons globally, one of the largest balloon "fleets" in the world.

RE/MAX has prepared this booklet to answer the questions you naturally have about the magical sport of ballooning. By the time you reach the concluding "Balloonist's Prayer," you will have seen how a piece of cloth, when filled with heat, can become as tall as a seven-story building and lift off the earth, lighter than the air around it.

Welcome to ballooning, and as balloonists say, "Soft Landings."





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HOW Does it Fly?

The basic principle behind hot air ballooning is what the Montgolfier brothers observed at their paper mill back in the 1780s: hot air rises. Less dense, lighter than cold air, hot air rises above cold air, like smoke up a chimney.

Preparing a balloon for flight is a simple procedure involving several steps. After ground crew members unpack the balloon equipment from the chase vehicle, they attach the uprights to the basket, and the burners and envelope cables to the uprights. Then they "walk out" the envelope and hold open the throat of the balloon for cold inflation by the inflator fan.

After the envelope is filled to about 75 percent of its capacity, still lying on its side, the pilot operates the burners, blasting propane heat into the envelope in the hot air stage of the inflation. When the air inside the envelope is warmer than the air outside the envelope, the balloon stands upright, steadied by a crew member holding a line attached to the top, or crown, of the balloon.

The average balloon holds about 90,000 cubic feet of air. The lifting capacity is measured at sea level, with an outside air temperature of 65 degrees fahrenheit. Total lift, or gross lift, is 1,600 pounds. Most balloons, with fuel and equipment and ready to fly, weigh about 700 pounds, leaving 900 pounds for passengers. At sea level, an average size balloon can lift four people, but at higher attitudes, as in the mountains, it may lift only two.

To launch, the pilot "hits the burner," increasing the temperature inside the envelope, and lighter than the air outside, the balloon rises off the ground. The colder and less humid the air is outside the envelope, the larger the envelope, and the less passenger weight, the easier the lift.

A balloon's course being determined by the wind, the craft can be "steered" only by the pilot ascending or descending to a current of air moving in a different direction. The pilot ascends by "burning," increasing the heat inside the envelope, and descends by allowing the air in the balloon to cool. To land, the pilot pulls the venting line, releasing hot air from the envelope through the "maneuvering vent."

Common Questions

About Hot Air Ballooning

How large is an average inflated balloon?

The most common size is about 57 feet across at its widest point and 70 feet high – as tall as a seven-story building.

How much does a hot air balloon cost?

About as much as an SUV. The cost of a basic balloon begins at about \$35,000. "Luxury models" with envelopes of custom color patterns could nearly double that figure, and "special shapes" can cost many times that much.

How long does a balloon last?

With proper care, a balloon envelope can last about 500 flight hours.

What happens if a balloon gets a hole in it?

Hot air balloon envelopes are made of ripstop nylon, which will not tear easily, and because of their size, there is little pressure on the fabric when it is inflated. An envelope can tear on landing, by snagging on sharp objects, but the pilot will detect any holes or tears during the next inflation. Small punctures will not affect the performance of the aircraft. Punctures and rips can be repaired.

What fuel is used to heat the air inside a balloon?

Propane. Balloons carry 30 to 40 gallons of fuel, which burns at 12 to 15 gallons per hour.

Do you need a license to fly a balloon?

Yes. Balloons, like airplanes, are governed by the Federal Aviation Administration. Getting a balloon license is much like getting a fixed-wing license. The balloon also has to have airworthiness inspections every year, or after every 100 hours of flight time, whichever comes first.

Do balloonists fly only in summer?

No. Balloons can be flown year-round in most areas of North America. In fact, winter flying provides some advantages. Because the difference between outside, or "ambient," air temperature and the temperature inside the balloon creates lift, it takes less heat inside the balloon to lift the same amount of weight when the outside air temperature is cold. Conversely, the higher the outside temperature – as in desert flying – the more heat is needed to launch.

When is the best time of day to fly?

The morning. Weather is generally cool and calm then. Balloons do not usually fly in the middle of the day because of heat, shifting winds, and thermals.

How strong a wind can a balloon fly in?

Maximum wind speeds for a balloon inflation are 8 to10 miles per hour. Common pilot knowledge is that when flags are blowing straight out or columns of smoke are angling at less than 45 degrees from the ground, the winds are too strong for safe flying. Higher winds "distort" the envelope, making it difficult to fire the burner without burning the fabric, and make for rough landings.

How many people does it take to set up a balloon?

A crew of four or five people can prepare a balloon for flight. The task takes about 20 minutes from the time the crew unpacks the equipment from the chase vehicle until the balloon is fully inflated and ready to lift off.

How many people can fit in a balloon basket?

The average balloon holds four adults. Some small gondolas have room for only a pilot, while large balloons can carry up to 12 adults.

What is it like flying in a balloon?

Actually, like floating in a dream. Since the balloon moves with the wind, you feel no sensation of movement. The ground moves under you. You see everything from a different perspective, as in an airplane. Between "burns," the air is unusually quiet, but sound carries differently above ground. The barking of dogs below seems to be up in the sky around you, and people on the ground can hear you speaking in a normal tone.

Can you steer a balloon?

Not really, even though some early balloon designers went so far as to attach rudders to gondolas. Because the balloon ascends with warmer air in the envelope and descends with cooler air, the pilot can control the flight of the balloon vertically but not horizontally. The pilot can change direction of the flight only by ascending or descending to a current of air moving a different direction, as pilots do in valley "box" winds.

How high can a balloon fly?

The average hot air balloon can climb to an altitude at which humans need supplemental oxygen. The altitude record for a hot air balloon is over 68,000 feet.

How fast does a balloon fly?

The same speed as the wind.

Is it cold flying in a balloon?

Not much colder than it is on the ground. Air temperature does not decrease significantly at the altitudes reached by most hot air balloon flights. Because the balloon travels with the wind, there is no wind-chill factor. In winter flying, the burners help provide warmth for pilot and passengers.

Do birds ever fly into balloons?

Rarely. Because of its size, a balloon is easy for birds to avoid. Also, birds – like ground animals – are frightened by the sound of the burners.

How long is a typical flight?

Between one and two hours.

How far do balloons fly?

The usual flight covers 5 to10 miles.

Balloon

Language

Aerostat – A lighter-than-air device. Examples include hot air balloons, gas balloons and dirigibles. An "aeronaut" is a person who pilots a lighter-than-air craft.

Balloon Crew – A group of about four people who function both as ground crew, helping with pre-flight preparations, and chase crew, retrieving the balloon after its flight and packing it back into the chase vehicle.

Balloon Basket – Also called the "gondola." Most are made of wicker, although other materials, including fiberglass and aluminum, have been used. Wicker is preferred because it is more flexible on landing.

Box – Flying back and forth over the same area by using winds of opposite directions at different attitudes. It's a common phenomenon in valleys because of the drainage of air down mountains.

Burners – The fuel-burning source of power of the modern hot air balloon, consisting of coil tubing and a fuel-injecting nozzle. A double burner system generates up to 30 million BTUs per hour. A pilot "burns" by turning or pulling the blast valve.

Chase Vehicle – The truck, van or trailer carrying the balloon components, pilot and crew. It is frequently decorated with corporate, commercial or personal logos and designs.

Crown – The top center point of the balloon envelope. Attached to the crown is the "crownline," which a crew member holds taut when the balloon is being inflated, preventing swaying of the envelope.

Deflation – The pilot of a hot air balloon deflates the envelope by "ripping out" the top panel, the deflation port, of the balloon with a ripcord, or deflation line.

Distortion – The variation of the standard inflated shape of a balloon, caused during inflation by strong winds or by "wind sheers." "Spinnakering" (a sailing term) is the distortion of an envelope being inflated or tethered in a high wind.

Envelope – The fabric bubble of modern ripstop nylon or other synthetic material. Load tapes running vertically down the envelope end in cables that attach to the basket's uprights.

Festival – One of many names for a hot air balloon meet or rally. Other names include Balloonfest, Classic, Fiesta, Race, or Stampede. A hot air balloon Championship tends to be a more formally competitive and controlled event.

Free Flight – Untethered, a balloon drifting with the wind.

Inflation – The filling of an envelope with cold air from an inflator fan and hot air from burners. After the envelope is about three-quarters filled with cold air, hot inflation begins.

Laying Out – Walking a balloon envelope out of its bag and spreading out the fabric, readying it for inflation.

Maneuvering Vent – A slit in the side or top of the balloon envelope, opened by the venting line for the spilling of hot air from the envelope. Venting enables the balloon to descend faster than it would normally by the cooling of the air inside the envelope. Venting can also be used to rotate the balloon.

Montgolfiere – The generic word for the hot air balloon, named for its inventors, Joseph and Etienne Montgolfiere. "Charliere" is a rarely used term for a gas balloon, named after its inventor, Professor Jacques Charles.

Pibal – A helium-filled pilot balloon released to ascertain the directions and velocities of wind at different attitudes.

Special Shapes – Balloons of other than standard shape, such as a flying saucer, a dinosaur, a cowboy hat, a pink elephant, a polar bear, or a sneaker. These balloons are constructed with multiple compartments. Balloons with appendages built off the standard balloon shape are little more difficult to handle than a standard balloon. Exceptionally horizontal or vertical shapes, though, require minimal wind for inflation and landing.

Splash and Dash – A maneuver in which a pilot tests his or her flying skill by descending to the surface of a body of water, touches the water with the basket, and ascends again. Other exercises are "tree-topping," touching the tops of trees in flight, and "kissing," touching the envelope of another balloon in flight.

Tether – A secured line restricting the ascent of a balloon. Used by pilots to give short "rides" to the public.

Thermals – Updrafts caused by heated air rising from the ground. By flying early in the morning or late in the afternoon, balloonists avoid these potentially dangerous conditions.

Throat – The mouth of a balloon envelope, usually bordered by a skirt or scoop to help direct the heat of the burners into the envelope.

Winds Aloft – The winds at different attitudes.

The Balloonist's Prayer

May the winds welcome you with softness. May the sun bless you with his warm hands. May you fly so high and so well That God joins you in laughter And sets you gently back Into the loving arms of Mother Earth.

For more information about the RE/MAX Balloon, visit remax.com. Select "Corporate Information" at the bottom of the home page, then "The Balloon" link.





RE/MAX International, Inc. P.O. Box 3907 Englewood, Colo. 80155-3907

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