Hot Air Ballooning
Frequently Asked Questions

Each balloon flight is a unique experience. Commitment to safety is always foremost. We wilt not fly in unsafe conditions, or in unsafe balloons. Before every flight the pilot and crew inspect the balloon, envelope, rigging *and* gondola. The pilot or any crewmember may abort, or delay a takeoff for any reason.

Flight Operations;

1. **Flight Times:** Hot air balloon flights can occur twice a day. Just after sunrise and about an hour or so prior to sundown. These are the times when the air is most stable and will provide a safe and enjoyable flight. Flights generally last about an hour, depending on various conditions (weather, landing sites). Ballooning is largely recreational in nature; thus many flights happen on weekend and holidays.

2. **Weather Conditions:** Balloons don't fly in rein, fog, snow, or wind above 7 mph. Balloons don't fly when there is threat of thunderstorms in the area (even 75-100 miles away). There are other conditions that can affect many pilots decision to fly or not to fly. These are considered to ensure a safe flight. It is not much colder in the gondola than it is on the ground. Only about 3 degrees cooler per thousand feet of altitude.

3. **Best Time of Year:** Balloons can fly all year; however, late spring through late fall provides the most enjoyable and scenic flights. Observing the colorful fall foliage from a hot air balloon is truly breathtaking.

Launch Locations: Other than at balloon events (commonly called rallies or festivals), each pilot has his/her own launch sites. Many open areas maybe used (with permission). Discuss with your pilot.

Steering a Balloon: (How do you steer a balloon?) Balloons simply float with the wind. To steer a balloon one must use the wind currents at different altitudes. To get these different altitudes you put hot air in the balloon to go higher, vent hot air out of the balloon, or let the air in the balloon naturally cool to go lower. Balloons cannot fly upwind or crosswind. Preflight planning insures the pilot knows which way the balloon will be traveling, and the pilot makes sure there are plenty of suitable land sites downwind.

Height of Flight: (How high do balloons fly?) Most balloon flights are conducted between the surface and 3,000 feet. An attitude of 10,000 feet requires oxygen on board. Standard balloons have flown in excess *of* 30,000 feet.]

7. **Balloon Inflation:** (How long does ' it take to inflate a balloon?) A balloon can beassembled and inflated in about fifteen minutes or less. There are several reasons that it may take longer A) Speed is not a major concern. Safety is our number one consideration. B.) Some balloons are totally disassembled after each flight, and therefore must be carefully reassembled. This may take up to thirty minutes. The pilot is responsible to check and recheck the balloon as it is put together. The crew and pilot work in harmony to create a safe inflation and launch. The deflation and pack up takes about the same amount of time.

8. **Clothing:** (What to wear?) Ballooning is an outdoor sport activity, so you should wear whatever you feel comfortable in and the type of clothing that you would expect to wear for a walk in the countryside on the day you fly. For women, climbing into the gondola will be very awkward in a dress or skirt. There really ' is no need to over-dress during the summer months. It is not much colder in the gondola than it is on the ground. Only about 3 degrees cooler per thousand feet of altitude.

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It is strongly recommended that all shoes worn should have flat soles. High-heels and platforms will be very difficult to walk in over rough terrain. We often land on farms and in open, undeveloped country. You will not have to walk far; but open toe and high-heeled shoes are an invitation for a hurt or twisted-ankle.

It also helps ' if the majority of upper body and outer clothing is made of cotton rather than man-made fibers. Taller passengers may find a hat useful.

9. **Return Trip:** (How do you get back to where you started?) A chase crew follows along in a van or truck. The chase crew is in radio contact with the pilot, so they can be there when the balloon lands (or soon afterwards.

10. **Smoking:** (Can I smoke in or around a hot air balloon?) NO!! It is not advisable because of the possibility of propane fires or explosions from free propane. And ashes could accidentally damage an envelope.

11. **Chase Crew:** (or Ground Crew) Essential support people who assist the pilot. This includes setting up the balloon, helping make sure the basket is arranged; performing spectator control, and helping achieve a safe lift off. After lift off, they will follow the balloon in a chase vehicle and are in contact with the pilot by radio.

    The chase crew tries to be at the landing location before the balloon to obtain landowner permission and then assist with the landing.

    Most balloons have a crew of 3 or 4 people who are volunteers. If you are interested in joining a balloon crew, watch the sky and follow the next balloon you see until it lands. Then all you have to do is approach one of the crew and tell them you are interested in ballooning. You will more than likely be directed to the pilot who will either snatch you up for his or her own crew, then and there, or place you in contact with someone who can find you a home.

Requirements;

12. **Pilot Certification:** Balloon pilots are certified by the FAA, in the same manner as airplane pilots. They must obtain a prescribed number of hours of instruction, pass a FAA written exam, make a solo flight, a flight to a specific altitude, and pass a practical (flight) test. Balloon pilots must be re-examined periodically. You don't have to be able to fly an airplane since it is a completely different type of aircraft. You must be at least 16 years old to obtain a private pilot certificate and at least 18 years old for a commercial pilot certificate.

13. **Night Flying:** (Can balloons fly at night?) Yes, although balloonists seldom do because of decreased visibility and the requirement for instruments and lights. Most balloonists are certified for day flying only.

14. **Equipment Safety:** Balloons are aircraft and, as such, are regulated by the FAA. They must meet manufacturer' s standards and are subject to periodic inspections, just like a commercial jetliner.

15. **Balloon** Instrumentation**:** Balloon instruments include an altimeter (height), variometer (rate of climb), and a pyrometer temperature gage).

16. **Balloon Materials:** (What are balloons made of?) The balloon, also called the envelope, is made of a special material, which is lightweight and very strong, typically nylon or polyester. Rip stop nylon is the most common material. The material has a special coating to protect it from heat and reduce air leakage through the material. Lower portions around the envelope opening (throat). Maybe made from a fire resistant material like Nomex, similar to what racecar drivers and firemen wear.

Balloon Information;

17. **Cost:** (How much do balloons cost?) Balloons cost about the same as a car or boat. The most popular size balloon costs from $18,000 to $25,000 or more. Support equipment (radios, fans, extra tanks, toots, repair

kits, etc.) adds from $2,000 to $5,000 more. You can also buy used balloons.. And of course, the expense of a truck or van to carry the balloon and equipment and get you back to where you started must be considered.

18. Life: (How long do balloons last?) Depending upon the care it is given, a balloon envelope may last 500 or more flying hours. Considering that most sport pilots fly from 35 to 75 hours a year, balloons do last a long time.

19. Balloon Numbers: (How many hot air balloons are there?) There are over 3,500 balloons and 4,000-licensed balloon pilots in the U.S. There are another 1,000 or so balloons in other countries.

20. Fuel: (What fuel do balloons use and where is it canted?) Propane is used for fuel. It is carried in aluminum or stainless steel tanks that range from 10 to 20 gallons in size. Average fuel consumption is about 15 gallons an hour.

21. Flight: (How Do Balloons Fly?) Hot air of course! The same principle that keeps food frozen in the open chest freezers at the grocery store allows hot air balloons to fly. It' s a very basic principle: Hot air rises and cold air sinks. So while the super-cooled air in your grocer' s freezer settles down around the food, the hot air in a hot air balloon pushes up, keeping the balloon floating.

22. Sizes: Common hot air balloon sizes are: AX-6 54,000 + 69,000 cu.ft. typically carries 1-2 passengers); AX-7 77,000 cu.ft. typically carries 2-3 passengers); AX-8 90,000 + 105,000 cu.ft. typically carries 3-5 passengers); A typical AX-8 balloon stands about 70 feet tall and is just about as wide.

23. Similarities: (Are all hot air balloons alike?) All hot air balloons are alike just like all cars are alike. All hot air balloons consist of a burner system, a basket (gondola) and an envelope. The differences are in the shape and size of the envelope, the deflation system, the basket shape and design and the configuration, design, and number of burners.

24. Burner: A typical hot air balloon burner produces 15,000,000 Btu' s of heat energy. Enough to warm about 15 houses. Although there are a variety of burner styles with differing efficiencies and heat output (similar to engines in cars - all are effective but some are more powerful than others are).

25. Burner Lighting: (How do you light the burners?) Either with built-in piezo-elecric igniters or with a striker similar to that used by welders to light their welding torches. Once lit, a pilot light keeps the fuel burning.

26. Ropes: (What are the ropes for?) The ' crown line' attached to the top (crown) of the envelope is used to stabilize the balloon during inflation and assist during deflation. "Tie off lines are used during inflation as a safety precaution. "Tether lines* are used to tie the balloon down for display purposes. A ' drop line* is sometimes released by the pilot just before landing so the ground crew can pull the balloon to a desired location.

27. Basket Materials: (What is a balloon basket made of?) Woven wicker is used because it is lightweight and easily repaired. It also looks very nice! Occasionally other materials are used.

28. Balloons Parts: There are three major parts to a hot air balloon: the envelope, the burner, and the basket or gondola. The basket is where the pilot and passengers ride. Usually made of wicker, the basket protects the occupants and is lightweight and flexible. The burner is positioned above the passenger' s heads and produce a huge flame to heat the air inside the envelope: The envelope is the colorful fabric bag that holds

the hot air in. The envelope opening near the basket is called-the throat, "when the top of the«envelope is called the crown.

29. Birds: (What happens if a bird flies into a balloon?). It would most likely bounce off. The envelope fabric is much tougher than it might appear. It is possible to fly a balloon with a hole larg9 enough for a man to go through as long as the hole is not at the top of the envelope.

30. Mountain Flying: (Can balloons fly over mountains?) Yes. However, there are special problems: Mountain winds are sometimes very turbulent and unpredictable: If you come down in an area where there are no roads, it is difficult to get the balloon out.

General Information

31. Balloon Rides: (Is the balloon ride quiet?}' A perfect way to celebrate a special occasion, birthday, engagement, anniversary or just because! Details are available from any pilot. The flight is smooth and quiet except for the times when the pilot must put a blast of hot air in the balloon to ascend, slow or control a descent, or maintain the attitude of the balloon. It is very quiet and serene when you are floating along on the wind currents.

32. Balloon Glows: A special crowd pleasure This event involves several balloons being inflated at dusk. The balloons remain secured to the ground. In the dusk, the burners will be "fired up' which illuminates the colorful fabric from within. This is quite spectacular, and the greater the number of balloons. the prettier the picture.

33. Balloon Tethers: This operation involves attaching several strong ropes to the balloon and to points on the ground. The balloon can rise a limited distance and then return to the ground. Passengers can be taken "up* to experience the feeling of a balloon ride. Tethers are typically done at picnics, reunions and other outdoor celebration events.

34. Cameras: (Can I take a camera?) Absolutely! There is always plenty to photograph both prior to the flight, during and afterwards. You may bring a video camera also. Sturdy carry straps are strongly recommended and a suitable soft case to stow and protect the camera during the landing, since you will have both hands on the padded gondola rails. Bring plenty of extra film. Panoramic shots are nice for scenery, but not so good for dose-up people shots. If in doubt, bring both types; or a multi-view camera.

35. Environmental Concerns: A hot air balloon is an environmentally dean propane powered aircraft. The propane used to provide lift is completely burned and leaves no fumes or exhaust. We want to take care of the land we use for take-offs and landings. The areas may be a backyard, a field, or undeveloped land and the landowners are very concerned about preserving the natural beauty. Please don't litter and help us all to keep ballooning a dean sport.

Most balloons are equipped with livestock burners (Whisper burners')to avoid startling horses and other livestock as we fly over horse farms and livestock farms. These animals are not only expensive, but can be easily frightened into fences by the sounds of the regular burners. The livestock burners are much quieter and are used during certain flights to avoid these problems.

36. Civil War Balloons: (Were balloons really used during the civil war?) Yes. Hydrogen balloons were used by both armies for airborne observations.

37. Gas vs. Hot Air: (What are the differences between gas and hot air balloons?) A gas balloon is completely enclosed and is filled with helium or hydrogen (or other lighter than air gas). A hot air balloon gets its lift from heating the air within it. Gas balloons typically take many hours of preparation (lots of work) but also stay aloft for many hours (sometimes days). It is also significantly more costly to own and operate gas balloons.