

## **Balloon Launch Weather Criteria**

Weather conditions must be almost "ideal" in order for a hot air balloon launch to take place. If there is any sign of a potentially non-safe flight, then the launch will be CANCELLED. Experienced balloon pilot and Flight Operations Director, **Paul Suttle**, serves as our **Competition Director**. He is very trusted in the ballooning world and he makes the final decision on flight safety after consultation with the meteorologist and safety team regarding any final go/no-go flight decisions. In addition, individual balloon launches are always at the **pilot's discretion**. Here is some weather information on ballooning flights:

- **Surface Winds**
- **Winds Aloft**
- **Visibility**
- **Rain**
- **Fronts**
- **Thunderstorms**

Hot air balloons are a type of aircraft that rely on basic scientific principles to fly. Warm air rises over cooler air; thus, the balloon is able to rise when the burner is activated.

Prior to flight, a "**Pi-ball**" (or Pilot Balloon) will be released. This is a helium filled balloon that lets the pilots know the general direction of the wind. This is the way the pilot's balloon will drift. Wind directions do change based on height and pilots must rely on (and know the direction) of the winds aloft. A balloon must also be able to land once in the air so the decision for "Go" or "No Go" for launch must take both the take-off, flight, and a safe landing into consideration.

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- **Winds:** Winds are obviously the most critical weather phenomena that affects balloons. Winds are the #1 reason that balloon flights are cancelled. Balloons fly best with **wind speeds ranging from 4 to 8 miles per hour**. Balloons will never launch in winds higher than 12 mph. Strong winds can not only damage the balloon, but it can make a pilot overshoot a landing area, cause a hard landing and require more space for landing.
- **Winds Aloft:** Winds aloft can also cause a flight to be cancelled. There may be almost no wind on the surface, but at just 300-500' feet above the ground, the wind may be blowing at 20 miles per hour.
- **Visibility:** Balloon Pilots operate under FAA VFR conditions. This means they must have a certain amount of visibility in order to be able to fly (which means NO NIGHT FLYING). Depending on flight location, the visibility must be AT LEAST **3 miles**. For the most part, there will be NO flying in fog.
- **Rain:** Balloons do not launch in the rain. Rain can damage the balloon and decrease visibility. Besides, would you want to fly in a hot air balloon in rainy weather?
- **Fronts:** There must be no fronts in the area for a balloon launch to occur. Fronts usually come with a change in wind direction or increased wind speeds. If pilots can plan ahead for this, then it may be possible for a launch. But if the front will move through during time of flight, the launch must be cancelled.
- **Thunderstorms:** There must be **NO approaching thunderstorms within 100 miles** of the launch point for a balloon launch to take place. Thunderstorms present hazards to any type of aircraft, but a balloon is the one aircraft that would be affected most by any type of weather condition. A lightning strike to a balloon is an extremely dangerous hazard. In addition, gust fronts can occur up to 100 miles in advance of a storm or line of storms, which could heavily impact a balloon. If the weather forecast calls for severe weather, it is a good bet that the balloons will NOT be launching at that time.