

## **Example of a Balloon Competition Manual**

### **BALLOON COMPETITION MANUAL**

This manual has been prepared as part of the application for the issuance of a Certificate of Waiver with attachments and special provisions for a Free Balloon Competition on [insert date]. [Insert event name] BALLOON RACE.

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#### **Section I. Purpose.**

This manual is submitted as a part of an application for a waiver of Title 14 of the Code of Federal Regulations (14 CFR) part 91, §§ 91.119(b) and 91.119(c), by the [insert name of organization] for the [insert name of event] Balloon Race. Specifically, the waiver will allow officially registered balloons to operate at an altitude of no less than [insert number] feet above the highest obstacle within a [insert number]-foot radius of the balloon en route to the target within a [insert number] nautical mile (or other specified distance) radius of the designated launch field or goal. It will also allow for officially registered balloons to operate at [insert number] feet AGL over spectators and to set goals and/or targets at a minimum distance of [insert number] feet from physical barriers provided for spectator control.

No waiver is requested nor is a waiver required by 14 CFR for any mass ascensions or pilot choice launches.

## **Section II. Responsibilities and Procedures.**

### a) Duties of Personnel.

- 1) Event Director—[insert name].
- 2) Operations Director—[insert name].
- 3) FAA Liaison—[insert name].
- 4) Weather Officer—[insert name].
- 5) Safety Officer—[insert name].
- 6) Balloonmeister—[insert name].

### b) Registration and Airworthiness Determination.

Balloons flown at the event must have current certificates of registration and airworthiness, or in place of the latter, an equivalent document from the Federal Aviation Administration.

Chapter [insert number] of the competition rules cover procedures for balloons damaged or otherwise made unairworthy during the event. Throughout the event the Safety Officer or his designees; and appropriate FAA personnel will be consulted as necessary.

### c) Pilot and Event Flightcrew Members.

Each pilot must hold the appropriate pilot certificate (Private or Commercial) with Lighter than Air (LTA) Category and Free Balloon Class Rating. Each pilot must show evidence of current Flight Review (14 CFR part 61, § 61.56) and must also show evidence of currency per § 61.57. Minimum hours as PIC per the organizers specified time must also be shown.

Event flightcrew members carried on board a balloon during the event must have been briefed by the pilot of the balloon. Each event flightcrew member must sign the waiver form supplied by the pilot. Each event flightcrew member must attest that they have received a briefing from the PIC and have read and understand the conditions of the waiver. Only [insert number] event flightcrew member(s) may be carried in each balloon during the flight.

### d) Pilot Crew Briefing Procedures.

All pilots are required to sign a statement indicating that they have read and understand the provisions of the waiver and the official [insert title] Competition Rules prior to any competitive flight.

Before each flight all pilots must attend the flight briefing. Chapter [insert number] of the competition rules provides details of all briefings.

e) Letter of Agreement.

Letter of agreement will be issued and signed as required for the specific type of event.

f) Event Documentation.

All relevant registration files, task data sheets, pilot registration information etc., will be maintained by the organizer at least [insert number] days after the event and will be made available to the FAA Monitor upon request. Competition maps and task sheets will be made available to the FAA Monitor at the time of the pilot briefing.

### **Section III. Ground Operations.**

a) Clear Areas.

Clear areas are established at each target site. These areas are kept clear of spectators and are usually fenced. [Insert type of officials] will police any area (such as the target area on the main launch field) to keep unauthorized persons out. In the Minimum Altitude Diagram, this is referred to as the "Target Area."

b) Spectator Areas.

The primary competitive spectator area is located at the main launch site. Crowd control is initiated by physical barriers around the launch site and target areas controlled by [insert type of officials]. Official and balloon recovery vehicles are parked in restricted areas. Traffic is controlled by local police as required. Use of existing and temporary barriers secure spectators from the briefing area and headquarters and from potential low level flight areas surrounding goals/targets (see additional remarks under "ALTITUDES").

Competitive goals/targets set outside of the primary launch area in remote areas attract few, if any, spectators beyond those involved in race operations (officials and crews). Scoring/measuring officials control these areas as determined by conditions, and will isolate the area surrounding the goal/target from any unauthorized personnel.

c) Crowd Control Requirements.

Crowd control will be provided by [enter law enforcement agency name(s)] agencies and officials of the balloon event under the direction of the Safety Officer.

d) Landowner Relations/Notification.

Positive landowner relations are vital to the continuance of sanctioned events. There is an ongoing effort by all involved persons to maintain good landowner relations for the event. Additionally, as per Rule [enter number] pilots must obtain permission for launch from private property; and per Rule [enter number] minimize disturbing landowners. Landowners may request that their property be indicated on the competition map as a Prohibited Zone (PZ) as per Rule [enter number].

## **Section IV. Flight Operations.**

### a) Area of Operation.

The operations will occur in a [insert number] mile radius of the launch field located at [insert name] Airport as indicated on the official competition map (to be provided as requested). Final landings may occur beyond these boundaries, but no pilot choice takeoffs or mass ascensions will exceed these boundaries. Headquarters for the event operations will be located at the [insert name of location].

### b) Types of Operations.

The event will consist of single and multiple tasks as called by the Director after consultation with other approved competition officials, as appropriate, considering the conditions at hand and forecast to develop during the anticipated flight times.

The tasks will include:

#### 1) Pilot-Declared Goal.

Each pilot will fly from a launch area and will attempt to drop a marker close to a goal selected by him/her. Pilots define goals by description and map reference. The goals are declared in writing and given to a timekeeper. Each pilot flies from the designated launch area and attempts to drop a marker close to the selected goal. The result is the distance from the declared goal to the observed mark. The shortest distance wins. The landing after dropping the marker cannot be less than 1,500 feet from the declared goal.

#### 2) Judge-Declared Goal.

Each pilot flies from the designated launch area and attempts to drop a marker as close as possible to a goal set by the officials. The result is the distance from the declared goal to the observed mark. The shortest distance wins. The landing after dropping the marker cannot be less than 1,500 feet from the declared goal.

#### 3) Multiple Judge-Declared Goal.

Each pilot flies from the launch area and chooses one of a number of goals set by the officials. The pilot attempts to drop a marker near the goal chosen. The result is the distance from the observed mark to the nearest goal. The shortest distance wins. The landing after dropping the marker cannot be less than 1,500 feet from the selected goal.

#### 4) Hare and Hound.

A hare balloon will fly from the launch area and each pilot will attempt to fly near the final landing place of the hare and drop the marker. In the West, this may be referred to as the "Road Runner Race." The lead balloon, "the hare," takes off several minutes before the rest of the balloons and drops a marker at a designated point. The hare balloon deflates and is removed from the landing area. The marker dropped by the hare balloon becomes the target for the later

balloons, “the hounds.” The hounds try to drop markers as close as possible to the hare balloon’s target. After dropping the marker from the hound balloon, landing is at the pilot’s discretion but cannot be less than 1,500 feet from the target.

5) Fly-In Task.

Pilots find their own launch areas and attempt to reach a set goal or target.

6) Fly-On Task.

A task where a pilot declares a goal to which he flies, after dropping his marker in another task.

7) Gordon Bennett Memorial.

The competitors will maneuver their balloons a prescribed distance from a target on the ground (scoring area). They will then attempt to maneuver back to the scoring area and drop markers on the target.

8) Max Distance—Minimum Distance.

Pilots will attempt to drop their markers in the Scoring Area a maximum or minimum distance from the launch point as specified on the task sheet.

9) Elbow (ELBO).

Each pilot flies from the launch area and attempts to achieve the greatest change of flight direction during the flight with the least angle of divergence. A 180-degree change in direction with a zero angle of divergence is best. Two concentric circles, specific distances apart, surround the launch point. The pilot drops two markers. The first marker must be dropped between the inner and outer circle. The second marker must be dropped within the outer circle. The second marker cannot be less than 5,000 feet from the first marker. Landing after dropping the marker is at the pilot’s discretion.

10) Convergent Navigational Task (CNT).

Officials establish a goal, but pilots find their own launch areas for the attempt to reach the goal. The boundary of the launch area declared by the pilot is the physical boundary of a field or a circle with a 300-foot radius from the inflation point, whichever is less. The officials place a target at the goal 30 minutes before the launch period. The pilot launches from a selected site, attempts to navigate to the target, and drops a marker. The result is the distance from the target to the marker. The shortest distance wins. The landing after dropping the marker is at the pilot’s discretion but cannot be less than 1,500 feet from the target.

11) Watership Down.

This is a two-part task. Pilots find their own launch sites and fly to a target established by the officials. At a specified time before the launch, a hare balloon takes off adjacent to the target and drops a marker at a designated point. This marker becomes the second target. The hare balloon

deflates, and the envelope remains flattened on the ground to serve as a guide to the second target area. Each competing pilot drops a marker as close as possible to the first target, which was the launch site of the hare balloon. Pilots then fly-on to drop a second marker as close as possible to the target marker placed by the the hare balloon.

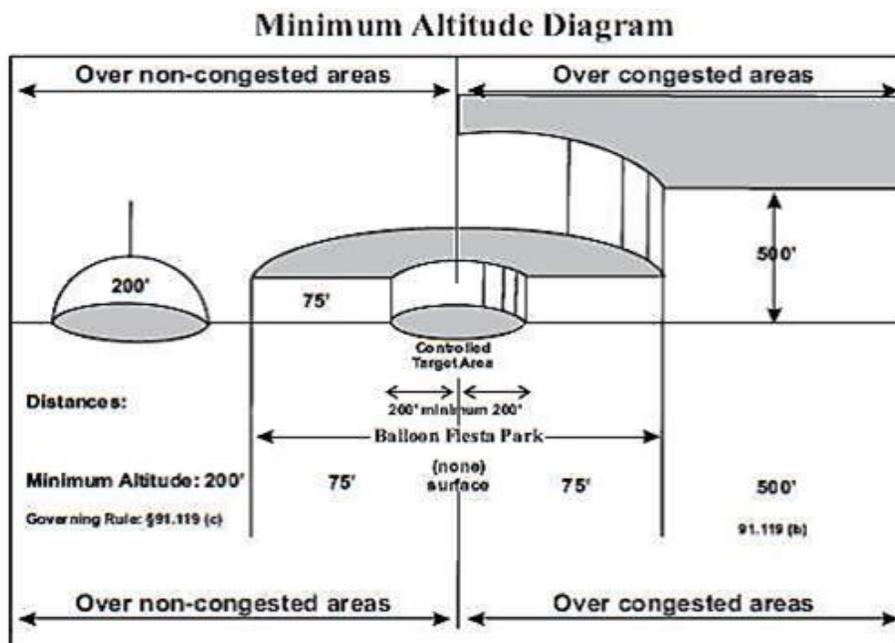
12) Key Grab.

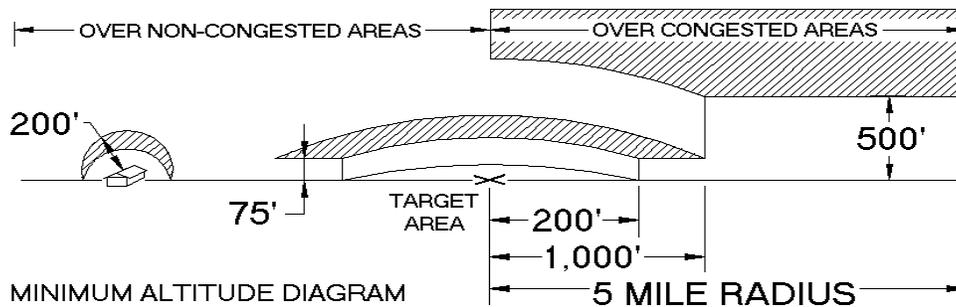
This event usually has a target (generally a tall pole with the keys to a new automobile affixed to the top) in a centralized location. The balloonist must depart a predetermined distance from the target. The object is to maneuver the balloons, one by one, over the target so the pilot can attempt to grab the keys as the balloon goes by the pole.

The area around the pole must be completely clear of spectators and under the control of the event officials. Balloon race officials should have portable bullhorns or a public address system to control the crowd movements or to direct the balloonist away from the target area in an emergency. If these precautions are observed, a waiver of § 91.119(c) can be issued to allow operations closer than 500 feet to the crowd.

[Insert procedure] to ensure that the balloonists will abort the key grab attempt if it becomes apparent that the balloons' ground tracks will not be within the operating area or when a realistic chance for the key is no longer possible. The landing areas must be segregated from the spectators; only bona fide recovery crews should be present in the landing area to assist the balloonist with recovery. All participants must be briefed before the operations.

c) Minimum Altitude Diagram.





d) Altitudes.

In accordance with CoW special provisions [insert number] registered balloons will be allowed to make approaches to targets and/or goals within the designated areas. Balloons making these approaches will be permitted to fly over the designated spectator areas at an altitude of not less than [insert number] feet AGL. The balloons must have attained a state of altitude equilibrium at this [insert number]-foot minimum altitude and not be descending while passing over designated spectator areas. It is felt that this altitude is sufficient to allow for unusual circumstances with an adequate margin of safety for spectators.

In order to provide the highest possible level of safety for spectators, the scoring officials will cause scoring/measuring officials to be positioned among the spectators to allow crowds to be shifted as necessary and to provide warning regarding any markers that may be dropped in the spectator areas. Announcements over the public address systems will also advise the spectators of the possibilities of both low flying balloons over the area and of markers being dropped in this area.

e) Weather Requirements.

Flight operations will be conducted during the period from published sunrise to sunset, with the visual flight rules (VFR) and weather conditions as specified in § 91.155. Maximum demonstrated surface winds must be [insert number] or less.

The decision for flight is the sole responsibility of the pilot and the decision of whether to hold a task is the sole responsibility of the director after consultation with appropriate safety officials.

f) Communications Requirements.

Primarily by required pilot briefing, however, supplementary information is also given on local radio stations and on the public address system. [Insert type of radios used] will be used between pilot and event organizer for communication during the competition.

g) Air Traffic Coordination.

A NOTAM will be requested from the [insert name] FSS advising air traffic of numerous balloons in the [insert name] area at varying altitudes from [insert date] through [insert date] during [insert time] and [insert time].

This Operations Manual includes the information and requirements contained in the following attachments.

**ATTACHMENTS:**

- Sectional of Area
- List of Pilot Entries
- Schedule of Events
- Statement of Responsibility
- Competition Rules