



2023

RC Balloon Operations Manual  
Rules & Regulations

# CONTENTS

## Section 1 Operations Manual

### INTRODUCTION AND PURPOSE

<b>I. Responsibilities and Procedures .....</b>	<b>3</b>
A. Duties of Personnel .....	3
B. Balloon Registration/Airworthiness.....	3
C. Required Equipment .....	4
D. Damage to Balloon .....	4
E. Event Documentation.....	4
F. Pilots' Responsibilities.....	4
G. Remote Control Crew Responsibility .....	5
H. Pilot/Crew Briefing Responsibilities .....	5
<b>II. Ground Operations .....</b>	<b>5</b>
A. Pre-Flight Inspections.....	5
B. Spectator Areas.....	6
<b>III. Flight Operations .....</b>	<b>6</b>
A. Area of Operations .....	6
B. RC Ascensions .....	6
C. Altitudes .....	6
D. Weather Requirements .....	7
E. Launch Operations .....	7
F. Communications Requirements .....	7

## Section 2 Rules and Regulations

<b>I. Participation Requirements .....</b>	<b>7</b>
A. Pilots .....	7
B. Balloons .....	9
<b>II. Flight Operations .....</b>	<b>9</b>
A. Flight Briefings .....	9
B. Pilot-In Command.....	9
C. Crewmembers .....	9
D. Nothing may be Dropped.....	9
E. Inflation Fans .....	9
F. Launch.....	10
G. During Flight Tank Change .....	10
H. Tether Line.....	10
I. Behavior.....	10
<b>III. Field Operations.....</b>	<b>10</b>
A. Crowd Control .....	11
B. No Drive Zone .....	11
C. Unauthorized/Unattended Vehicles .....	11
D. Propane .....	11

# Section 1

## Remote Controlled (RC) Model Balloon Operations Manual

### INTRODUCTION AND PURPOSE

This Operations Manual is intended to establish the operating rules for the pilots and crews participating in the 3<sup>rd</sup> Fiesta de Los Globitos Remote Control Balloon Rally (Event). This Event is being held during the 51<sup>st</sup> Albuquerque International Balloon Fiesta (Balloon Fiesta), October 7-15, 2023, at Balloon Fiesta Park. The Event organizer, Albuquerque International Balloon Fiesta, Inc. (AIBF) coordinates field preparation and activities, appoints the Globitos Balloonmeister and other key officials, and approves the information supplied to the participants including this Operations Manual.

### I. RESPONSIBILITIES AND PROCEDURES

#### A. DUTIES OF AIBF PERSONNEL:

- 1. Event Director (Jennifer Garcia):** Is in overall operational charge of the AIBF flight operations and is responsible for effective management, efficient and safe running of all flying Events. The Event Director coordinates all flight activities, coordinates with the FAA concerning flight activity during the Event, works directly with AIBF's Executive Director and President to determine any need for cancellation, prepares the application for Waiver, rules, and pilot information for approval by the AIBF Board of Directors and the Federal Aviation Administration (FAA).
- 2. Pilot Coordinator (Taylor Caldwell):** Will assist the Event Director in all areas related to the effective management of all flying events and Glows and is responsible for the Pilot Headquarters, providing management of all Pilot/Crew social functions. Coordinates registration and pilot documentation plus FAA review. The Pilot Coordinator organizes pilot rosters for Albuquerque Aloft, Government, Media and VIP flights and coordinates pilot hotel rooms and pilot packs.
- 3. Balloonmeister, (Henry Rosenbaum):** Is responsible for implementing and carrying out the operational decisions of the Event Director, coordinates all flight activities, coordinates with the Globitos Balloonmeister during the Event; and is responsible for and directs all Balloon Fiesta and Globitos Officials.
- 4. Globitos Balloonmeister (Melissa Bond):** Is responsible for implementing and carrying out the operational decisions of the Event Director, coordinates all Fiesta de Los Globitos flight operations. Coordinates with the AIBF Event Director and Balloon Fiesta Balloonmeister to ensure that there are no conflicts with other flying or entertainment events on the launch field. Receives weather information from the AIBF Weather Team to brief Globitos pilots and make flight operations decisions best suited for the Fiesta de Los Globitos Event.
- 5. Globitos Safety Official(s):** Coordinates with the Globitos Balloonmeister on all matters pertaining to flight safety for the Event, monitors the safety of flight operations, and works to detect and correct potentially unsafe operations. Coordinates with the Globitos Balloonmeister, other Balloon Fiesta Officials and any on-field law enforcement when assistance is needed.

## **B. Balloon Registration and Airworthiness Determination**

1. All RC balloons and pilots participating in the 2023 Fiesta de Los Globitos Event(s) must be registered and approved by the Event Director, Pilot Coordinator and Globitos Balloonmeister.
2. All balloons and operations shall be governed by the Code of Federal Regulations Title 14, Part 101, Subparts A, B and E. A copy of CFR 14, Part 101 is included as Appendix A of this document. Pilots must ensure that all required standards are met.
3. Event personnel have the right to inspect the balloon systems at any time deemed necessary.
4. All balloons must be in a physical condition such that they are able to be operated in a manner that does not present an undue hazard to person(s) or property on the ground.

## **C. Required Equipment**

1. Fire Extinguishers
  - i. Each balloon system must have a minimum of one (1) Class B fire extinguisher within five (5) feet of the launch point and be readily accessible to the pilot and crew members in case of fire.
  - ii. Each Globitos Safety Officer will carry a fire extinguisher while on the field during the operations of the Event.
2. Tether Line
  - i. Each balloon system must have a tether line, securely attached to the balloon system, during inflation, flight, or static display. Attachment devices shall be of metal construction and not plastic.
  - ii. Tether line must have bright, high visibility flags attached every 25 feet.
  - iii. Tether line must have 550 lb. minimum strength (e.g. paracord 550).
3. Tank Attachment
  - i. Each basket must have a system to secure fuel tanks in the basket.

## **D. Balloon Damage**

1. If a balloon is damaged, the following procedure shall be followed:
  - i. If in flight, the pilot must land the balloon.
  - ii. If damage occurs during the Event, it must be reported to the Globitos Balloonmeister or a Globitos Safety Officials the day of the incident.
  - iii. Repairs must be inspected by the Globitos Balloonmeister and or a Globitos Safety Official to determine whether the balloon is in a safe condition before participation in the Event can resume.
  - iv. It is recommended that Globitos Balloonmeister and or Globitos Safety Officials be consulted in the event of any damage to a balloon to determine whether the balloon may participate in the Event.

## **E. Event Documentation**

AIBF shall maintain a roster containing the name, address, for each registered pilot and the manufacturer, model, and date of manufacture for each balloon participating in the Event.

## **F. Pilots' Responsibilities**

1. All pilots are required to sign a statement indicating that they have read and understand this Operations Manual and Rules & Regulations prior to any inflation in the Event.

2. No one other than a registered Primary or Secondary pilot, is allowed to operate any balloon at Balloon Fiesta Park.
3. Each Pilot has full and complete authority over the balloon and is responsible for all decisions made associated with the balloon on the ground and in the air. Each Pilot must ensure that their crew, their equipment, and their own level of skill and experience are suitable for the conditions in their own judgment. The Pilot is responsible for all the actions of their crew during the Event.
4. It is highly recommended that the pilot and/or owner of participating balloons have personal liability and theft coverage for their balloon and operations during the Event. AIBF does not provide coverage to participants.

#### **G. Crew Member Responsibility**

1. Regardless of size, each balloon should have no less than two (2) crew members in addition to the pilot for all operations at Balloon Fiesta Park.
2. Either the Pilot or a crew member, must be assigned to monitor the inflation fan and must remain in control of fan at all times while the fan is in operation.
3. Crew members must be aware of the location of their balloon system's fire extinguisher(s) at all times while on the Launch Field.
4. The pilot, or a crew member, must control tether lines attached to basket at all times during flight. They shall also act as the visual spotter for the duration of flight.
5. Crew members are under the direct supervision of the Pilot-In-Command (PIC) and must follow all instructions given by the PIC and/or Balloon Fiesta Officials.

#### **H. Pilot/Crew Briefing Responsibilities**

1. Pilots must review and confirm complete understanding of this Operations Manual and attend applicable pilot briefings held on the launch field prior to acting as Pilot-In-Command (PIC).
2. Crew members during the Event must have been briefed by the PIC of the balloon. The total number of crew members is limited to five (5), including the pilot.
3. Before each Globitos inflation all pilots are required to attend the applicable briefing, and relay all important information to crew members.

## **II. GROUND OPERATIONS**

### **A. Pre-inflation Inspections and Equipment Check**

1. All pilots must perform a pre-flight check to include at least these provisions:
  - i. Connect tanks
  - ii. Turn on tank valves
  - iii. Perform a "Sniff test" to check for any propane leaks
  - iv. Turn on pilot valve
  - v. Light pilot flame
  - vi. Turn on radio system
  - vii. Test burner
  - viii. Turn off main burner tanks
  - ix. Bleed main burner line
  - x. Turn off pilot burner
  - xi. Shut off radio system
2. Inspect the balloon envelope during cold inflation, including a check of the balloon material, for obvious tears or other visible damage.
3. Check suspension cables and attachment points.

4. Ensure tether lines, knots, and any attachment devices (carabiners, quick links, connectors, etc.) are secure and adequate so they don't detach during flight operations.

B. Guests (Spectators)

Event guests will have unrestricted access to the launch field during inflation and launch operations and each PIC shall be responsible for crowd control in the immediate vicinity of their balloon during the inflation, launch and flight. The PIC and the crew are responsible for the protection of their property. The PIC shall also take measures to protect guests from any dangers associated with balloon operations. Globitos Balloonmeister, Globitos Safety Officials and other Balloon Fiesta Officials will aid in crowd control if an emergency should occur.

### III. FLIGHT OPERATIONS

A. Area of Operations

1. Balloon Fiesta Park: The primary location for the Fiesta de Los Globitos balloon Events during the Albuquerque International Balloon Fiesta is Balloon Fiesta Park. A map of the launch sites is attached as Appendix B.

B. Globitos Inflations

1. The Event will consist of Globitos inflations taking into consideration the weather conditions at the site and forecasted to develop during the anticipated flight times.
2. Globitos Mass Ascensions include officially registered balloons launching from designated launch sites on the Launch Fiesta at Balloon Fiesta Park and may be in conjunction with full-size balloon Ascensions.
3. Globitos Balloon Glows occur with officially registered model balloons static displaying at sunset. Balloons are not allowed to free fly during these events and must either static display on the ground or be at a maximum of 6 feet above the ground. The Balloons must be securely tethered to the ground at all times.
4. Globitos flight operations may be allowed at times outside of the normally scheduled events at the discretion of the Globitos Balloonmeister and Balloon Fiesta Officials. Pilots may not inflate their balloons at Balloon Fiesta Park unless they obtain authorization from the Globitos Balloonmeister prior to operation.

C. Altitudes

1. Globitos will not be permitted to fly at any altitude that is unsafe. As a further limitation Globitos are limited as follows:
  - i. Under no circumstances shall R/C balloons fly at an altitude more than 50 ft. above ground level during any Event.
  - ii. During full size balloon launches, (typically 7am to 8:30am) no R/C balloon shall fly at an altitude greater than 25 ft above ground.
  - iii. During glows, balloons are not allowed to tether or free fly and must either static display on the ground or be at a maximum of 6 feet above the ground. Globitos must be securely attached to the ground.
  - iv. Globitos may be allowed to fly at higher altitudes when large balloons are not conducting flight operations, e.g. tailgating times.

D. Weather Requirements

1. The decision for flight is the sole responsibility of the PIC.
2. Parameters for ground winds and safe operation

- i. Winds above 7 knots – flights prohibited
- ii. No other known conditions contrary to the safety of flight operations at the time of launch.
- iii. The Globitos Balloonmeister, after consultation with the Event Director and appropriate Officials, shall cancel Mass Ascensions and events already underway if weather conditions are outside the limits outlined above. Events may also be canceled for any reason by the Globitos Balloonmeister at their sole discretion.

E. Communications Requirements

1. In accordance with Globitos rules, attendance at Globitos Pilot briefings are mandatory and will be conducted at designated location beginning each morning at 0630 hours.
2. A Public Address (PA) system installed at Balloon Fiesta Park-North, the Remind text messaging service and Globitos Officials will be used to inform pilots of the status of their flight and updated weather information. Each pilot and crew will also be supplied with appropriate emergency phone numbers.
3. In case of emergencies, the Globitos Balloonmeister and Globitos Safety Officials are able to communicate with Balloon Fiesta Public Safety, who can dispatch law enforcement or emergency personnel to respond to situations as needed.

## Section 2

# Rules & Regulations

### I. PARTICIPATION REQUIREMENTS

#### A. Pilots

1. Entry: Pilots must be officially registered with the Event, which is scheduled to take place on Sunday, October 8, Wednesday, October 11, Friday, October 13, and Saturday, October 14 (Evening Glow). Other Events may be announced/scheduled weather permitting.
2. PIC Responsibilities: The Pilot-In-Command (PIC) is responsible for compliance with all Event rules. The PIC will brief all designated crewmembers prior to each inflation and ensure that they understand their duties. No flight or inflation is mandatory, and all flights are made at the discretion of the PIC.
3. Acknowledgement: Pilots must know, understand, and abide by all Event rules and regulations, including any rules that are added or modified during the Event and announced during any official pilot briefing.
4. Release of Liability: The Pilot, by entering the Event, agrees that the Organizer and sponsors of this Event, competition officials, officers, agents and/or members of these entities are providing PICs and their crews with the facilities and means for

participation in this Event and in no way do they supersede the responsibility of the pilot in command or otherwise.

The Participant releases the Organizer and sponsors of this Event, competition officials, officers, agents and/or members of these entities from liability for their actions or inactions in relation to the Event which may arise out of or result from or in any manner connected with the balloon flight or activity in which the Participant participates as a pilot in command.

5. **Liability to Third Parties:** By entering the Event, a Participant assumes all liability for injury, loss, or damage to third parties or their property caused by themselves or their crew.
6. **Safety:** All meteorological reports, forecasts, and other safety information are provided in good faith for the guidance of Participants. AIBF assumes no responsibility for the completeness or accuracy of such information. It is the PIC's decision whether to rely on that information or acquire additional information.
7. **Safety Officials:** Officials will be appointed to monitor the inflation and operation of balloons at the Event location. However, nothing shall diminish the responsibility of each PIC under these rules and regulations.
8. **Recall:** Flight cancellation and other critical safety information will be communicated through Globitos Balloonmeister and Globitos Safety Officials or texts through the Remind texting system.
9. **Responsibility:** Each PIC has full and complete authority over the balloon and is responsible for all decisions to be made associated with the balloon on the ground and in the air. Each PIC shall ensure that their crew, their equipment, and their own level of skill and experience are suitable for the conditions in their own judgment. The PIC is responsible for all the actions of their crew during the Event.
10. **Conduct:** PICs and their crews are required to conduct themselves in a sportsmanlike manner and to comply with the directions of the Event Officials. Profanity or unsportsmanlike conduct directed at any Official, Event Navigator (volunteer), other pilots, or guests will be grounds for expulsion of the PIC from this Event and/or future Events.

#### **B. Balloons**

1. Must be registered for the Fiesta de Los Globitos Event. Up to two balloons may be registered per pilot. All participating balloons must display the official Globitos basket banner on the basket. If a pilot has registered two balloons for the event, the banner must be displayed on the basket being used.
2. Only registered balloons may be flown during the Event and they must be present on the Launch Field for all Globitos inflations and flights which are scheduled.



3. Equipment: Globitos Officials and Balloon Fiesta Officials are authorized to visually inspect and disqualify any system which in their opinion poses a danger to persons or property at Balloon Fiesta Park.
4. Serious Infringements, Unsporting Behavior: Serious Infringements include dangerous or hazardous actions or repetitions of lesser infringements and may prevent the PIC from flying or may cause the PIC's removal from Event.

## II. FLIGHT OPERATIONS

- A. Globitos Briefings: Attendance at the applicable daily pilot briefings for Globitos pilots are mandatory and will be conducted beginning each morning at 0630 hours at a designated location.
- B. Pilot in Command (PIC): The PIC will brief all Crewmembers as to their duties.
- C. The maximum number of RC Balloon Crewmembers for each balloon is five (5), including the PIC.
- D. The PIC shall not allow any items to be dropped from the balloon.
- E. Altitude Violations: Violations of maximum flight altitudes will result in a penalty up to revocation of flying privileges.
  - i. Under no circumstances shall R/C balloons be allowed to fly at an altitude higher than 50 ft above ground level during the Event.
  - ii. During full size Balloon ascensions, (typically 7am to 8:30am) no R/C balloon shall fly at an altitude above 25 ft above ground level.
- F. Inflation Fans
  1. All inflator fans must have appropriate safety cages.
  2. Gas, electric, or battery powered inflation fans are acceptable. However, AIBF will not have electric power available at the launch sites. PICs will have to supply their own power using a car power inverter, generator, or portable power station. All power cords must be routed so they don't present a tripping hazard to participants or spectators.
  3. PICs must ensure safe operation of the fan and prevent non-crewmembers' access to it. Fan operation must be monitored by the PIC or crewmember at all times during inflations. Anyone in the vicinity of the inflator fan needs to ensure they do not have any loose clothing or other articles that can be sucked into the cage.
- G. Launch
  1. Each Globitos' Launch site at Balloon Fiesta Park has been assigned and is indicated on the pilot's badge. When flying/launching from the Park, PIC must inflate on the assigned site, unless specific permission is received from the Globitos Balloonmeister to do otherwise.
  2. PIC shall maintain control of their balloon at all times. Should an emergency occur, the PIC shall deflate the balloon immediately.
  3. There is more than one balloon assigned to each launch site, please be cooperative.

4. Only the vehicle transporting the balloon with the Globitos basket banner, with the Globitos vehicle pass displayed in the windshield, is allowed on the Launch Field during inflations. Penalty for infringement of this rule may be loss of flying privileges.

#### H. Tank Change During Flight

1. No propane cylinders shall be replaced while the balloon is inflated without appropriate precautions taken.
  2. PIC must cause the Globito to land and remain at ground level during complete refueling process.
    - i. Turn off main burner tanks
    - ii. Operate burner to bleed down/burn off the line
    - iii. Turn off pilot light tank
    - iv. Replace main burner tanks
    - v. Turn on main burner tanks
    - vi. Perform sniff test, smell for propane leaks
    - vii. Turn on pilot light tank
    - viii. Turn on pilot light valve
    - ix. Light pilot
    - x. Test main burners
    - xi. Commence inflation if appropriate
- I. Tether Line: Tether lines must be marked with bright, high visibility flags every 25 feet to ensure compliance with height/altitude restrictions. Penalty may be loss of flying privileges.
- J. Behavior: Participants are required to fly with proper consideration for persons on the ground and other participants. Inconsiderate behavior by pilots and/or crewmembers may be penalized up to expulsion from the Event.

### III.

#### FIELD OPERATIONS

- A. Crowd Control: Each Pilot-In-Command (PIC) shall be responsible for crowd control in the immediate vicinity of their balloon during the inflation and launch. The PIC and crew are responsible for the protection of their property. The PIC shall also take measures to protect guests from any dangers associated with balloon operations. Globitos Safety Officials and other Balloon Fiesta Officials will aid in crowd control if an emergency should occur.
- B. No Drive Zone: No driving or parking is allowed on Main Street (Concession Concourse). Violations will result in loss of flying privileges
- C. Unauthorized and/or Unattended Vehicles: Unauthorized vehicles on the Balloon Fiesta Launch Field create unnecessary congestion and will be towed at owner's expense. During balloon launches from Balloon Fiesta Park, unattended vehicles, whether or not authorized to be on the launch sites, may be towed at owner's expense if the vehicle is deemed by Balloon Fiesta officials to pose a hazard to balloons, guests, or field operations. This includes balloon trailers and recreational vehicles. Violation of this rule may result in the loss of flying privileges.
- D. Propane

1. Each registered PIC will receive a propane gift card which can be used for their propane expense and will be responsible for refueling their cylinders. No refueling operations can be conducted at Balloon Fiesta Park. Penalty for violation will be automatic expulsion from the Event.
2. NEVER vent raw propane on Balloon Fiesta Park! Penalty for infringement may be up to one day's flying privileges.
3. Registered PICs will be provided a listing of propane suppliers near Balloon Fiesta Park in their pilot pack, although any propane supplier may be used.
4. Registered pilots will be responsible for supplying their own DOT certified, 5 gallon or larger, propane tanks for local suppliers to fill.

## Appendices

- A. Code of Federal Regulations Title 14, Part 101
- B. Balloon Fiesta Park and Launch Site Map



## Appendix A

Code of Federal Regulations  
Title 14, Part 101

---

This content is from the eCFR and is authoritative but unofficial.

---

## **Title 14 - Aeronautics and Space**

### **Chapter I - Federal Aviation Administration, Department of Transportation**

#### **Subchapter F - Air Traffic and General Operating Rules**

#### **Part 101 Moored Balloons, Kites, Amateur Rockets, and Unmanned Free Balloons**

##### **Subpart A General**

**§ 101.1** Applicability.

**§ 101.3** Waivers.

**§ 101.5** Operations in prohibited or restricted areas.

**§ 101.7** Hazardous operations.

##### **Subpart B Moored Balloons and Kites**

**§ 101.11** Applicability.

**§ 101.13** Operating limitations.

**§ 101.15** Notice requirements.

**§ 101.17** Lighting and marking requirements.

**§ 101.19** Rapid deflation device.

##### **Subpart C Amateur Rockets**

**§ 101.21** Applicability.

**§ 101.22** Definitions.

**§ 101.23** General operating limitations.

**§ 101.25** Operating limitations for Class 2-High Power Rockets and Class 3-Advanced High Power Rockets.

**§ 101.27** ATC notification for all launches.

**§ 101.29** Information requirements.

##### **Subpart D Unmanned Free Balloons**

**§ 101.31** Applicability.

**§ 101.33** Operating limitations.

**§ 101.35** Equipment and marking requirements.

**§ 101.37** Notice requirements.

**§ 101.39** Balloon position reports.

## **PART 101 - MOORED BALLOONS, KITES, AMATEUR ROCKETS, AND UNMANNED FREE BALLOONS**

**Authority:** 49 U.S.C. 106(f), 106(g), 40101 note, 40103, 40113–40114, 45302, 44502, 44514, 44701–44702, 44721, 46308.

## Subpart A - General

### § 101.1 Applicability.

- (a) This part prescribes rules governing the operation in the United States, of the following:
- (1) Except as provided for in § 101.7, any balloon that is moored to the surface of the earth or an object thereon and that has a diameter of more than 6 feet or a gas capacity of more than 115 cubic feet.
  - (2) Except as provided for in § 101.7, any kite that weighs more than 5 pounds and is intended to be flown at the end of a rope or cable.
  - (3) Any amateur rocket except aerial firework displays.
  - (4) Except as provided for in § 101.7, any unmanned free balloon that—
    - (i) Carries a payload package that weighs more than four pounds and has a weight/size ratio of more than three ounces per square inch on any surface of the package, determined by dividing the total weight in ounces of the payload package by the area in square inches of its smallest surface;
    - (ii) Carries a payload package that weighs more than six pounds;
    - (iii) Carries a payload, of two or more packages, that weighs more than 12 pounds; or
    - (iv) Uses a rope or other device for suspension of the payload that requires an impact force of more than 50 pounds to separate the suspended payload from the balloon.
- (b) For the purposes of this part, a *gyroglider* attached to a vehicle on the surface of the earth is considered to be a kite.

*[Doc. No. 1580, 28 FR 6721, June 29, 1963, as amended by Amdt. 101-1, 29 FR 46, Jan. 3, 1964; Amdt. 101-3, 35 FR 8213, May 26, 1970; Amdt. 101-8, 73 FR 73781, Dec. 4, 2008; 74 FR 38092, July 31, 2009; Amdt. 101-9, 81 FR 42208, June 28, 2016; Amdt. Nos. 101-10, 85 FR 79826, Dec. 11, 2020]*

### § 101.3 Waivers.

No person may conduct operations that require a deviation from this part except under a certificate of waiver issued by the Administrator.

*[Doc. No. 1580, 28 FR 6721, June 29, 1963]*

### § 101.5 Operations in prohibited or restricted areas.

No person may operate a moored balloon, kite, amateur rocket, or unmanned free balloon in a prohibited or restricted area unless he has permission from the using or controlling agency, as appropriate.

*[Doc. No. 1457, 29 FR 46, Jan. 3, 1964, as amended at 74 FR 38092, July 31, 2009]*

### § 101.7 Hazardous operations.

- (a) No person may operate any moored balloon, kite, amateur rocket, or unmanned free balloon in a manner that creates a hazard to other persons, or their property.

- (b) No person operating any moored balloon, kite, amateur rocket, or unmanned free balloon may allow an object to be dropped therefrom, if such action creates a hazard to other persons or their property.

(Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 12800, 39 FR 22252, June 21, 1974, as amended at 74 FR 38092, July 31, 2009]

## Subpart B - Moored Balloons and Kites

**Source:** Docket No. 1580, 28 FR 6722, June 29, 1963, unless otherwise noted.

### § 101.11 Applicability.

This subpart applies to the operation of moored balloons and kites. However, a person operating a moored balloon or kite within a restricted area must comply only with § 101.19 and with additional limitations imposed by the using or controlling agency, as appropriate.

### § 101.13 Operating limitations.

- (a) Except as provided in paragraph (b) of this section, no person may operate a moored balloon or kite—
  - (1) Less than 500 feet from the base of any cloud;
  - (2) More than 500 feet above the surface of the earth;
  - (3) From an area where the ground visibility is less than three miles; or
  - (4) Within five miles of the boundary of any airport.
- (b) Paragraph (a) of this section does not apply to the operation of a balloon or kite below the top of any structure and within 250 feet of it, if that shielded operation does not obscure any lighting on the structure.

### § 101.15 Notice requirements.

No person may operate an unshielded moored balloon or kite more than 150 feet above the surface of the earth unless, at least 24 hours before beginning the operation, he gives the following information to the FAA ATC facility that is nearest to the place of intended operation:

- (a) The names and addresses of the owners and operators.
- (b) The size of the balloon or the size and weight of the kite.
- (c) The location of the operation.
- (d) The height above the surface of the earth at which the balloon or kite is to be operated.
- (e) The date, time, and duration of the operation.

### § 101.17 Lighting and marking requirements.

- (a) No person may operate a moored balloon or kite, between sunset and sunrise unless the balloon or kite, and its mooring lines, are lighted so as to give a visual warning equal to that required for obstructions to air navigation in the FAA publication "Obstruction Marking and Lighting".

- (b) No person may operate a moored balloon or kite between sunrise and sunset unless its mooring lines have colored pennants or streamers attached at not more than 50 foot intervals beginning at 150 feet above the surface of the earth and visible for at least one mile.

(Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 1580, 28 FR 6722, June 29, 1963, as amended by Amdt. 101-4, 39 FR 22252, June 21, 1974]

### § 101.19 Rapid deflation device.

No person may operate a moored balloon unless it has a device that will automatically and rapidly deflate the balloon if it escapes from its moorings. If the device does not function properly, the operator shall immediately notify the nearest ATC facility of the location and time of the escape and the estimated flight path of the balloon.

## Subpart C - Amateur Rockets

### § 101.21 Applicability.

- (a) This subpart applies to operating unmanned rockets. However, a person operating an unmanned rocket within a restricted area must comply with § 101.25(g)(2)) and with any additional limitations imposed by the using or controlling agency.
- (b) A person operating an unmanned rocket other than an amateur rocket as defined in § 1.1 of this chapter must comply with 14 CFR Chapter III.

[Doc. No. FAA-2007-27390, 73 FR 73781, Dec. 4, 2008, as amended by Docket No. FAA-2022-1355, Amdt. No. 101-11, 87 FR 75846, Dec. 9, 2022]

### § 101.22 Definitions.

The following definitions apply to this subpart:

- (a) **Class 1—Model Rocket** means an amateur rocket that:
  - (1) Uses no more than 125 grams (4.4 ounces) of propellant;
  - (2) Uses a slow-burning propellant;
  - (3) Is made of paper, wood, or breakable plastic;
  - (4) Contains no substantial metal parts; and
  - (5) Weighs no more than 1,500 grams (53 ounces), including the propellant.
- (b) **Class 2—High-Power Rocket** means an amateur rocket other than a model rocket that is propelled by a motor or motors having a combined total impulse of 40,960 Newton-seconds (9,208 pound-seconds) or less.
- (c) **Class 3—Advanced High-Power Rocket** means an amateur rocket other than a model rocket or high-power rocket.

[Doc. No. FAA-2007-27390, 73 FR 73781, Dec. 4, 2008]



### § 101.23 General operating limitations.

- (a) You must operate an amateur rocket in such a manner that it:
  - (1) Is launched on a suborbital trajectory;
  - (2) When launched, must not cross into the territory of a foreign country unless an agreement is in place between the United States and the country of concern;
  - (3) Is unmanned; and
  - (4) Does not create a hazard to persons, property, or other aircraft.
- (b) The FAA may specify additional operating limitations necessary to ensure that air traffic is not adversely affected, and public safety is not jeopardized.

[Doc. No. FAA-2007-27390, 73 FR 73781, Dec. 4, 2008]

### § 101.25 Operating limitations for Class 2-High Power Rockets and Class 3-Advanced High Power Rockets.

When operating *Class 2-High Power Rockets* or *Class 3-Advanced High Power Rockets*, you must comply with the General Operating Limitations of § 101.23. In addition, you must not operate *Class 2-High Power Rockets* or *Class 3-Advanced High Power Rockets*—

- (a) At any altitude where clouds or obscuring phenomena of more than five-tenths coverage prevails;
- (b) At any altitude where the horizontal visibility is less than five miles;
- (c) Into any cloud;
- (d) Between sunset and sunrise without prior authorization from the FAA;
- (e) Within 9.26 kilometers (5 nautical miles) of any airport boundary without prior authorization from the FAA;
- (f) In controlled airspace without prior authorization from the FAA;
- (g) Unless you observe the greater of the following separation distances from any person or property that is not associated with the operations:
  - (1) Not less than one-quarter the maximum expected altitude;
  - (2) 457 meters (1,500 ft.);
- (h) Unless a person at least eighteen years old is present, is charged with ensuring the safety of the operation, and has final approval authority for initiating high-power rocket flight; and
- (i) Unless reasonable precautions are provided to report and control a fire caused by rocket activities.

[74 FR 38092, July 31, 2009, as amended by Amdt. 101-8, 74 FR 47435, Sept. 16, 2009]

### § 101.27 ATC notification for all launches.

No person may operate an unmanned rocket other than a Class 1—Model Rocket unless that person gives the following information to the FAA ATC facility nearest to the place of intended operation no less than 24 hours before and no more than three days before beginning the operation:

- (a) The name and address of the operator; except when there are multiple participants at a single event, the name and address of the person so designated as the event launch coordinator, whose duties include coordination of the required launch data estimates and coordinating the launch event;
- (b) Date and time the activity will begin;
- (c) Radius of the affected area on the ground in nautical miles;
- (d) Location of the center of the affected area in latitude and longitude coordinates;
- (e) Highest affected altitude;
- (f) Duration of the activity;
- (g) Any other pertinent information requested by the ATC facility.

[Doc. No. FAA-2007-27390, 73 FR 73781, Dec. 4, 2008, as amended at Doc. No. FAA-2007-27390, 74 FR 31843, July 6, 2009]

### § 101.29 Information requirements.

- (a) **Class 2—High-Power Rockets.** When a Class 2—High-Power Rocket requires a certificate of waiver or authorization, the person planning the operation must provide the information below on each type of rocket to the FAA at least 45 days before the proposed operation. The FAA may request additional information if necessary to ensure the proposed operations can be safely conducted. The information shall include for each type of Class 2 rocket expected to be flown:
  - (1) Estimated number of rockets,
  - (2) Type of propulsion (liquid or solid), fuel(s) and oxidizer(s),
  - (3) Description of the launcher(s) planned to be used, including any airborne platform(s),
  - (4) Description of recovery system,
  - (5) Highest altitude, above ground level, expected to be reached,
  - (6) Launch site latitude, longitude, and elevation, and
  - (7) Any additional safety procedures that will be followed.
- (b) **Class 3—Advanced High-Power Rockets.** When a Class 3—Advanced High-Power Rocket requires a certificate of waiver or authorization the person planning the operation must provide the information below for each type of rocket to the FAA at least 45 days before the proposed operation. The FAA may request additional information if necessary to ensure the proposed operations can be safely conducted. The information shall include for each type of Class 3 rocket expected to be flown:
  - (1) The information requirements of paragraph (a) of this section,
  - (2) Maximum possible range,
  - (3) The dynamic stability characteristics for the entire flight profile,
  - (4) A description of all major rocket systems, including structural, pneumatic, propellant, propulsion, ignition, electrical, avionics, recovery, wind-weighting, flight control, and tracking,
  - (5) A description of other support equipment necessary for a safe operation,

- (6) The planned flight profile and sequence of events,
- (7) All nominal impact areas, including those for any spent motors and other discarded hardware, within three standard deviations of the mean impact point,
- (8) Launch commit criteria,
- (9) Countdown procedures, and
- (10) Mishap procedures.

[Doc. No. FAA-2007-27390, 73 FR 73781, Dec. 4, 2008, as amended at Doc. No. FAA-2007-27390, 74 FR 31843, July 6, 2009]

## Subpart D - Unmanned Free Balloons

**Source:** Docket No. 1457, 29 FR 47, Jan. 3, 1964, unless otherwise noted.

### § 101.31 Applicability.

This subpart applies to the operation of unmanned free balloons. However, a person operating an unmanned free balloon within a restricted area must comply only with § 101.33 (d) and (e) and with any additional limitations that are imposed by the using or controlling agency, as appropriate.

### § 101.33 Operating limitations.

No person may operate an unmanned free balloon—

- (a) Unless otherwise authorized by ATC, below 2,000 feet above the surface within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport;
- (b) At any altitude where there are clouds or obscuring phenomena of more than five-tenths coverage;
- (c) At any altitude below 60,000 feet standard pressure altitude where the horizontal visibility is less than five miles;
- (d) During the first 1,000 feet of ascent, over a congested area of a city, town, or settlement or an open-air assembly of persons not associated with the operation; or
- (e) In such a manner that impact of the balloon, or part thereof including its payload, with the surface creates a hazard to persons or property not associated with the operation.

[Doc. No. 1457, 29 FR 47, Jan. 3, 1964, as amended by Amdt. 101-5, 56 FR 65662, Dec. 17, 1991]

### § 101.35 Equipment and marking requirements.

- (a) No person may operate an unmanned free balloon unless—
  - (1) It is equipped with at least two payload cut-down systems or devices that operate independently of each other;
  - (2) At least two methods, systems, devices, or combinations thereof, that function independently of each other, are employed for terminating the flight of the balloon envelope; and

- (3) The balloon envelope is equipped with a radar reflective device(s) or material that will present an echo to surface radar operating in the 200 MHz to 2700 MHz frequency range.

The operator shall activate the appropriate devices required by paragraphs (a) (1) and (2) of this section when weather conditions are less than those prescribed for operation under this subpart, or if a malfunction or any other reason makes the further operation hazardous to other air traffic or to persons and property on the surface.

- (b) No person may operate an unmanned free balloon below 60,000 feet standard pressure altitude between sunset and sunrise (as corrected to the altitude of operation) unless the balloon and its attachments and payload, whether or not they become separated during the operation, are equipped with lights that are visible for at least 5 miles and have a flash frequency of at least 40, and not more than 100, cycles per minute.
- (c) No person may operate an unmanned free balloon that is equipped with a trailing antenna that requires an impact force of more than 50 pounds to break it at any point, unless the antenna has colored pennants or streamers that are attached at not more than 50 foot intervals and that are visible for at least one mile.
- (d) No person may operate between sunrise and sunset an unmanned free balloon that is equipped with a suspension device (other than a highly conspicuously colored open parachute) more than 50 feet along, unless the suspension device is colored in alternate bands of high conspicuity colors or has colored pennants or streamers attached which are visible for at least one mile.

(Sec. 6(c), Department of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 1457, 29 FR 47, Jan. 3, 1964, as amended by Amdt. 101-2, 32 FR 5254, Mar. 29, 1967; Amdt. 101-4, 39 FR 22252, June 21, 1974]

### § 101.37 Notice requirements.

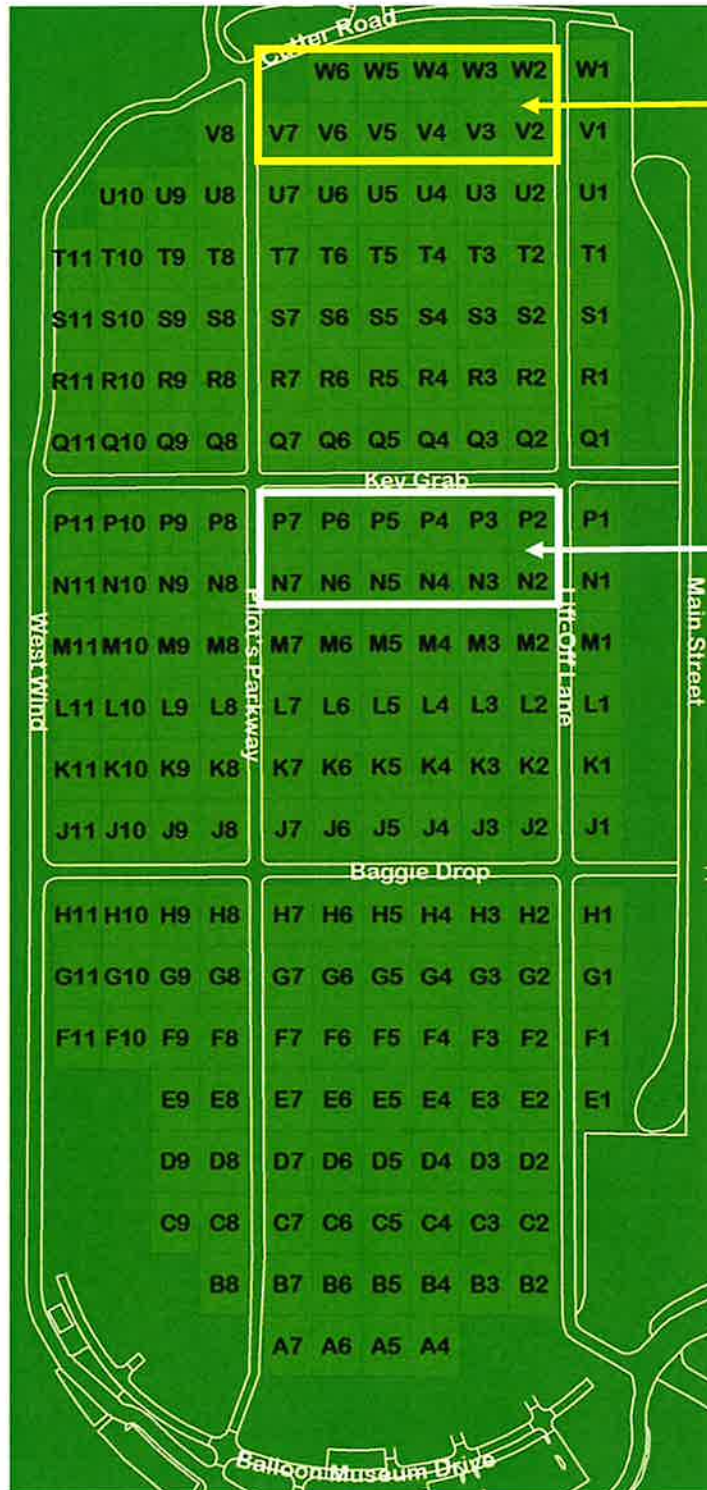
- (a) **Prelaunch notice:** Except as provided in paragraph (b) of this section, no person may operate an unmanned free balloon unless, within 6 to 24 hours before beginning the operation, he gives the following information to the FAA ATC facility that is nearest to the place of intended operation:
  - (1) The balloon identification.
  - (2) The estimated date and time of launching, amended as necessary to remain within plus or minus 30 minutes.
  - (3) The location of the launching site.
  - (4) The cruising altitude.
  - (5) The forecast trajectory and estimated time to cruising altitude or 60,000 feet standard pressure altitude, whichever is lower.
  - (6) The length and diameter of the balloon, length of the suspension device, weight of the payload, and length of the trailing antenna.
  - (7) The duration of flight.
  - (8) The forecast time and location of impact with the surface of the earth.
- (b) For solar or cosmic disturbance investigations involving a critical time element, the information in paragraph (a) of this section shall be given within 30 minutes to 24 hours before beginning the operation.

- (c) **Cancellation notice:** If the operation is canceled, the person who intended to conduct the operation shall immediately notify the nearest FAA ATC facility.
- (d) **Launch notice:** Each person operating an unmanned free balloon shall notify the nearest FAA or military ATC facility of the launch time immediately after the balloon is launched.

**§ 101.39 Balloon position reports.**

- (a) Each person operating an unmanned free balloon shall:
  - (1) Unless ATC requires otherwise, monitor the course of the balloon and record its position at least every two hours; and
  - (2) Forward any balloon position reports requested by ATC.
- (b) One hour before beginning descent, each person operating an unmanned free balloon shall forward to the nearest FAA ATC facility the following information regarding the balloon:
  - (1) The current geographical position.
  - (2) The altitude.
  - (3) The forecast time of penetration of 60,000 feet standard pressure altitude (if applicable).
  - (4) The forecast trajectory for the balance of the flight.
  - (5) The forecast time and location of impact with the surface of the earth.
- (c) If a balloon position report is not recorded for any two-hour period of flight, the person operating an unmanned free balloon shall immediately notify the nearest FAA ATC facility. The notice shall include the last recorded position and any revision of the forecast trajectory. The nearest FAA ATC facility shall be notified immediately when tracking of the balloon is re-established.
- (d) Each person operating an unmanned free balloon shall notify the nearest FAA ATC facility when the operation is ended.

# Appendix B



Operations area on:  
Friday & Saturday

Operations area on:  
Sunday & Wednesday

