

**CAR 101**

**Gyrogliders, Parasails, Balloons, Kites, and Model Aircraft-Operating Rules**

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## FOREWORD

(a) The Civil Aviation Requirements for the operation of Gyrogliders, Parasails, Unmanned Balloons, Kites, and Model Aircraft have been issued by the Civil Aviation Affairs of Oman (hereinafter called the AUTHORITY) under the provisions of the Civil Aviation Law of the Sultanate of Oman.]

(b) Definitions and abbreviations of terms used in this CAR that are considered generally applicable are contained in CAR-1, Definitions and Abbreviations. However, definitions and abbreviations of terms used in this CAR that are specific to a Subpart of this CAR are normally given in the Subpart concerned or, exceptionally, in the associated compliance or interpretative material.

(d) Amendments to the text in this CAR are issued as amendment pages containing revised paragraphs.

New, amended and corrected text will be enclosed within brackets until a subsequent 'Change' is issued.

(e) The editing practices used in this document are as follows:

- (1) 'Shall' is used to indicate a mandatory requirement and may appear in CARs.
- (2) 'Should' is used to indicate a recommendation and normally appears in AMCs and IEMs.
- (3) 'May' is used to indicate discretion by the Authority, the industry or the applicant, as appropriate.
- (4) 'Will' indicates a mandatory requirement and is used to advise of action incumbent on the Authority.

*NOTE: The use of the male gender implies the female gender and vice versa.*

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**SUBPART A – APPLICABILITY****CAR 101.1 Applicability**

This Subpart prescribes rules governing the operation of—

- (1) moored balloons and kites;
- (2) free balloons;
- (3) model aircraft;
- (4) gyrogliders and parasails.

**CAR 101.3 Definitions**

In this CAR—

**Controlled aerodrome** means an aerodrome at which air traffic control service is provided to aerodrome traffic:

**Control line model aircraft** means a model aircraft primarily controlled in flight by a single or multiple wire system operated by the person flying the aircraft and restricted to circular flight about a central point:

**Free Balloon** means a pilotless aerostat without propulsion in free flight, having a gas capacity greater than 1.5 m<sup>3</sup>:

**Free flight model aircraft** means a model aircraft with a maximum wing loading of 62 g/dm<sup>2</sup> (20 oz/ft<sup>2</sup>), with a flight path that, once launched, is uncontrollable:

**Gyroglider** means a ground or water towed non-power-driven heavier-than-air aircraft supported in flight by the reaction of the air on one or more rotors which rotate freely on substantially vertical axes, capable of carrying a person or persons:

**Heavy free balloon** means a free balloon, that—

- (1) carries a payload with—
  - (i) a combined mass of 6 kg or more; or
  - (ii) a payload package of 3 kg or more; or
  - (iii) a payload package of 2 kg or more with an area density of more than 13 g/cm<sup>2</sup>; and
- (2) uses a rope or other device for suspension of the payload that requires an impact force of 230 N or more to separate the suspended payload from the balloon:

**Kite** means a pilotless aerodyne without propulsion that is tethered to a fixed point, or is hand held, and is sustained by the wind:

**Medium free balloon** means a free balloon, that—

- (1) carries a payload of 2 or more payload packages with a combined mass of—
  - (i) more than 4 kg; and
  - (ii) less than 6 kg; and
- (2) does not meet any of the criteria specified in the definition of the term heavy free balloon:

**Model aircraft** means a pilotless aircraft with a gross mass of between 100 g to 25 kg and includes—

- (1) control line model aircraft:
- (2) free flight model aircraft:
- (3) radio controlled model aircraft:

**Moored balloon** means a pilotless balloon that is moored to the surface of the earth, or to an object on the surface of the earth, and has a maximum diameter of more than 1.5 m or a gas capacity of more than 3 m<sup>3</sup>:

**Parasail** means an aerodyne, having the general form of an open, circular parachute carrying a person or persons towed behind a vehicle or motorboat to sustain flight:

**Radio controlled model aircraft** means a model aircraft that is primarily controlled by radio signals from a remote transmitter being operated by a person:

**Shielded operation** means an operation within 100 m of a structure and below the top of the structure.

### 101.5 Registration

The requirements in CAR 47 shall not apply to moored balloons, free balloons, kites, model aircraft, parasails, and gyrogliders.

### 101.7 Restricted, military operating, and danger areas

(a) A person must not operate a moored balloon, kite, free balloon, model aircraft, gyroglider, or parasail within a restricted area designated under CAR-OPS 0 unless the person has approval to do so from the administering authority responsible for the restricted area.

(b) A person must not operate a moored balloon, kite, free balloon, model aircraft, gyroglider, or parasail within a military operating area designated under CAR-OPS 0 unless the person has approval to do so from the administering authority responsible for the military operating area.

(c) A person must not operate a gyroglider or parasail within a danger area designated under CAR-OPS 0 unless the person has established that the activity associated with the danger area will not affect the safety of the gyroglider or parasail.

**101.9 Low flying zones**

A person must not operate a moored balloon, kite, free balloon, model aircraft, gyroglider, or parasail within a low flying zone designated under CAR-OPS 0.

**101.11 Controlled airspace**

A person shall not operate a moored balloon, kite, free balloon, model aircraft, gyroglider, or parasail in controlled airspace without prior authorisation from the ATC unit responsible for that airspace.

**101.13 Hazardous operations**

A person shall not operate a moored balloon, kite, free balloon, model aircraft, gyroglider, or parasail in a manner that creates a hazard to aircraft or to persons or property.

**101.15 Dropping of articles**

A person operating a moored balloon, kite, free balloon, model aircraft, gyroglider, or parasail shall not allow any object to be dropped in flight if such action creates a hazard to other persons or property.

**SUBPART B -- Moored Balloons and Kites****101.51 Applicability**

This Subpart prescribes rules governing the operation of moored balloons and kites.

**101.53 Aerodrome area**

A person shall not operate a moored balloon or kite—

- (1) on or over any active aircraft movement area of an aerodrome; or
- (2) on or over any runway or runway strip area.

**101.55 Aerodrome boundary**

Except for a shielded operation, a person shall not operate a moored balloon or kite within 4 km of an aerodrome boundary unless—

- (1) the balloon or kite does not exceed 400 feet AGL; and
- (2) the balloon or kite remains at least 400 feet vertically below cloud; and
- (3) the horizontal visibility is not less than 4 km; and
- (4) if the aerodrome is a controlled aerodrome, they have an ATC authorisation; and
- (5) if the aerodrome is an uncontrolled aerodrome, the operation is performed in accordance with an agreement established with the aerodrome operator.

**101.57 Airspace**

(a) Except for a shielded operation, each person operating a moored balloon or kite at a height of more than 400 feet AGL must—

- (1) operate in a danger area designated for that purpose under CAR-OPS 0; or
- (2) operate in accordance with the restrictions specified in paragraph (b).

(b) Each person operating a moored balloon or kite at a height of more than 400 feet AGL outside of a danger area must ensure that—

- (1) the balloon or kite remains more than 4 km from any aerodrome boundary; and
- (2) the balloon or kite remains within Class G airspace; and
- (3) the weight of the kite does not exceed 15 kg; and
- (4) the balloon or kite remains at least 400 feet vertically below cloud; and
- (5) the horizontal visibility is not less than 4 km; and
- (6) they provide the following information to the Oman NOTAM office at least 24 hours before the operation:
  - (i) their name, address and telephone numbers:



- (ii) the date, time and duration of the operation:
- (iii) a brief description of the moored balloon or kite, including size and predominant colour:
- (iv) the weight of the moored balloon or kite:
- (v) the height to which the moored balloon or kite will be operated.

**101.59 Night operation**

A person shall not operate a moored balloon or kite at night.

**101.61 Balloon mooring line marking**

A person shall not operate a moored balloon by day unless the mooring lines have coloured streamers or pennants attached at intervals of not more than 15 m commencing no more than 150 feet above ground level and visible for at least 1 nm.

**101.63 Balloon rapid deflation device**

A person shall not operate a moored balloon unless it contains a device that will automatically and rapidly deflate the balloon if it escapes from its moorings.

**101.65 Balloon escape**

Each person operating a moored balloon that escapes from its mooring without the deflation device functioning properly shall immediately notify the nearest ATS unit of—

- (1) the original location of the balloon; and
- (2) the time the balloon broke free; and
- (3) the estimated flight path of the balloon.

**SUBPART C — Free Balloons****101.101 Applicability**

This Subpart prescribes rules governing the operation of free balloons.

**101.103 Meteorological limitations**

Except where authorised by the appropriate ATS, a person shall not operate a heavy free balloon at or through any altitude below 60 000 feet pressure-altitude at which—

- (1) there are clouds or obscuring phenomena of more than four-eighths coverage; and
- (2) the horizontal visibility is less than 8 km; and
- (3) unauthorised entry into airspace of another State's territory is imminent.

**101.105 Operating limitation**

A person shall not release a heavy or medium free balloon in a manner that will cause it to fly—

- (1) below 1000 feet over a congested area of a city, town, or settlement; or
- (2) over an open-air assembly of persons.

**101.107 Equipment**

A person shall not operate a heavy free balloon unless—

- (1) it is equipped with—
  - (i) at least two payload flight-termination devices or systems, whether automatic or by telemetry, that operate independently of each other; and
  - (ii) in an area where ground-based SSR equipment is in use, a secondary surveillance radar transponder, with an altitude reporting capability, which is continuously operating on an assigned code, or which can be turned on when necessary by the tracking station; and
- (2) for polyethylene zero pressure balloons, at least two methods, systems, devices, or combinations thereof, that function independently of each other and are employed for terminating the flight of the balloon envelope; and
- (3) the balloon envelope is equipped with—
  - (i) at least one radar reflective device; or
  - (ii) radar reflective material that will present an echo to surface radar operating in the 200 MHz to 2,700 MHz frequency range.

**101.109 Termination**

Each person operating a heavy free balloon shall activate the respective termination devices required by 101.107(1)(i) and (2) to terminate the flight where—

- (1) meteorological conditions are less than those prescribed in 101.103; or

- (2) further operation is hazardous to other air traffic or to persons and property on the surface; or
- (3) unauthorised entry into airspace of another State's territory is imminent.

#### **101.111 Night operations**

A person shall not operate a heavy free balloon below 60 000 feet pressure-altitude at night unless the balloon and its attachments and payload, whether or not they become separated during the operation, are each equipped with lights that—

- (1) are visible at a distance of at least 5 nm; and
- (2) have a flash frequency of between 40 and 100 cycles per minute; and
- (3) each have their own power supply.

#### **101.113 Trailing antenna**

A person shall not operate a free balloon that is equipped with a trailing antenna that requires a force of more than 230 N to break it at any point unless the antenna has coloured pennants or streamers that—

- (1) are attached at not more than 15 m intervals; and
- (2) are visible at a distance of at least 1 nm.

#### **101.115 Suspension device**

A person shall not operate a heavy free balloon that is equipped with a suspension device more than 15 m long, other than a highly coloured open parachute, by day below 60 000 feet pressure-altitude unless the suspension device—

- (1) is coloured in alternate bands of high visibility colours; or
- (2) has coloured pennants or streamers attached which are visible for at least 1 nm.

#### **101.117 Pre-launch notice**

(a) Except as provided in paragraph (b), a person shall not launch a medium or heavy free balloon unless they provide the following information to the Oman NOTAM office at least 24 hours prior to the estimated launch time:

- (1) their name and telephone number;
- (2) the balloon identification or project code name;
- (3) the balloon classification and description including—
  - (i) the length and diameter of the balloon; and
  - (ii) the length of the suspension device; and
  - (iii) the weight of the payload; and
  - (iv) the length of the trailing antenna;
- (4) the SSR code as applicable;
- (5) the location of the launch site;

- (6) the estimated time of launch, or time of commencement and completion of multiple launches:
  - (7) the number of balloons to be launched or, for multiple launches, the scheduled interval between launches:
  - (8) the expected direction of ascent:
  - (9) the estimated time to reach cruising level or to pass 60 000 feet pressure-altitude, whichever is lower:
  - (10) the planned cruising levels (pressure-altitude):
  - (11) the planned duration of the flight:
  - (12) the estimated time and location of impact with the surface of the earth.
- (b) A person operating a medium or heavy free balloon for solar or cosmic disturbance investigations involving a critical time element may supply the information in paragraph (a) not less than 30 minutes prior to the estimated time of commencement.
- (c) Where there are changes to the information supplied under paragraph (a), the operator shall forward the changes to the Oman NOTAM office, at least 6 hours prior to the projected launch time.

**101.119 Launch notice**

Each person operating a medium or heavy free balloon shall notify the nearest ATS unit of the following information immediately after the balloon is launched:

- (1) the balloon flight identification:
- (2) the launch site:
- (3) the actual time of launch:
- (4) the estimated time at which 60 000 feet pressure-altitude will be passed, or the estimated time at which the cruising level will be reached if at or below 60 000 feet, and the estimated location:
- (5) any changes to the information provided under 101.117(a)(7) or (8).

**101.121 Cancellation notice**

Each person who has provided a pre-launch notice in accordance with 101.117 who subsequently cancels the operation shall immediately notify the ATS unit of the cancellation.

**101.123 Balloon position reports**

Each person operating a medium or heavy free balloon shall—

- (1) unless otherwise required by the ATS unit, monitor the course of the balloon and record its position at least every 2 hours; and
- (2) forward any balloon position reports requested by the ATS; and
- (3) immediately notify the nearest ATS unit when a balloon position report is not recorded for any 2 hour period of flight. This notification shall include—
  - (i) the last recorded position; and

- (ii) any revision of the forecast trajectory; and
- (4) immediately notify ATS when tracking of the balloon is re-established.

**101.125 Pre-descent position report**

Each person operating a medium or heavy free balloon shall provide the following information to the nearest ATS unit not less than one hour before the beginning of the planned descent:

- (1) the current geographical position:
- (2) the current altitude:
- (3) where applicable, the forecast time of penetration of 60 000 feet pressure-altitude:
- (4) the forecast descent trajectory:
- (5) the forecast time and location of the impact with the surface of the earth.

**101.127 Completion of operation**

Each person operating a medium or heavy free balloon shall notify the nearest ATS unit when the operation has ended.

**SUBPART D — Model Aircraft****101.201 Applicability**

This Subpart prescribes rules governing the operation of model aircraft.

**101.203 Control line model aircraft**

No person shall operate a control line model aircraft with a single or multiple wire system longer than 30 m.

**101.205 Aerodromes**

(a) With the exception of a control line model aircraft, a person must not operate a model aircraft on or within 4 km of—

(1) an uncontrolled aerodrome, unless—

(i) the operation is undertaken in accordance with an agreement with the aerodrome operator; and

(ii) in the case of a free flight model aircraft, the aircraft is launched downwind of an active runway; and

(iii) in the case of a radio controlled model aircraft, the aircraft is not operated at a height of more than 400 feet AGL, unless the operator has been approved by the Authority to operate above 400 feet AGL, and each pilot has an observer in attendance while the model aircraft is active in the air; and

(2) a controlled aerodrome, unless it is operated in accordance with an authorisation from the relevant ATC unit; and

(3) any aerodrome, unless—

(i) the person is the holder of, or is under the direct supervision of the holder of, a pilot qualification issued by a model aircraft association approved by the Authority; or

(ii) the person is under the direct supervision of a person appointed to give instruction in the operation of radio controlled model aircraft by a model aircraft association approved by the Authority.

(b) A person must not operate a model aircraft—

(1) on or over any active movement area of an aerodrome; or

(2) on or over any active runway strip area.

**101.207 Airspace**

A person operating a radio controlled model aircraft more than 4 km from an aerodrome boundary and above 400 feet AGL must ensure that the operation remains clear of Class C, D, or E airspace and must—

(1) operate in a danger area designated for that purpose under CAR-OPS 0; or

(2) ensure that, at least 24 hours before the operation, a person authorised by a model aircraft association approved by the Authority gives to the Oman NOTAM Office the following information:

- (i) the name, address, and telephone number of the model aircraft operator;
- (ii) the location of the proposed operation;
- (iii) the date and time and duration of the proposed operation;
- (iv) the maximum height AGL proposed for model aircraft operation.

#### **101.209 Meteorological limitations**

Except for control line model aircraft, a person shall not operate a model aircraft—

- (1) in any area where the ground visibility is less than 3 km; or
- (2) in any area where the cloud base is at a level where a model aircraft is unable to be operated—
  - (i) in sight of the operator; and
  - (ii) beneath the cloud base at all times.

#### **101.211 Night operations**

With the exception of control line model aircraft, a person shall not operate a model aircraft at night unless the operation is—

- (1) indoors; or
- (2) a shielded operation.

#### **101.213 Right of way**

Each person operating a model aircraft shall ensure it gives way to, and remains clear of, all manned aircraft on the ground and in flight.

#### **101.215 Radio controlled model aircraft**

A person shall not operate a radio controlled model aircraft with a gross mass of between 15 kg and 25 kg unless the aircraft is constructed and operated under the authority of a model aircraft association approved by the Authority.

## Subpart E — Gyrogliders and Parasails

### 101.251 Applicability

This Subpart prescribes rules governing the operation of gyrogliders and parasails.

### 101.253 Aerodromes

(a) A person shall not operate a gyroglider or parasail on or within 4 km of an aerodrome boundary unless—

- (1) at an uncontrolled aerodrome, it is operated—
  - (i) in accordance with an agreement with the aerodrome operator; and
  - (ii) at a height not exceeding 400 feet AGL; or
- (2) at a controlled aerodrome, it is operated in accordance with an authorisation from ATC.

(b) When operating on an aerodrome a gyroglider or parasail shall not be operated—

- (1) on or over any aircraft movement area; and
- (2) on or over any active runway or runway strip area.

### 101.255 Airspace

Each person operating a gyroglider or parasail above 400 feet AGL shall—

- (1) ensure that the gyroglider or parasail remains more than 4 km from any aerodrome boundary; and
- (2) operate in Class G airspace; and
- (3) provide the following information to the Oman NOTAM office at least 24 hours before the operation:
  - (i) the name, address, and telephone number of the operator;
  - (ii) the date, time, and duration of the operation
  - (iii) a brief description of the gyroglider or parasail (including size and predominant colour);
  - (iv) the height to which the gyroglider or parasail will be operated.

### 101.257 Meteorological limitations

(a) Except as provided in paragraph (b), each person operating a gyroglider or parasail shall—

- (1) not operate closer than 400 feet below cloud; and
- (2) limit operations to an area where the ground visibility is at least 5 km.

(b) Paragraph (a) shall not apply to the shielded operation of a gyroglider or parasail.



**101.259 Night operations**

No person shall operate a gyroglider or parasail at night.

**101.261 Airworthiness**

Each person who operates a gyroglider or parasail shall ensure that it is maintained in an airworthy condition.

**101.263 Safety equipment**

Each person carried in a gyroglider or parasail shall—

- (1) when flying over water, or within gliding distance of water, wear a permanent positive buoyancy aid; and
- (2) when flying over land, wear a rigid protective helmet; and
- (3) be secured to the gyroglider or parasail by a harness.

**101.265 Pre-flight briefing**

Each gyroglider or parasail passenger shall receive a pre-flight briefing on—

- (1) the nature of the flight; and
- (2) the standard operating procedures; and
- (3) emergency procedures.

**101.267 Emergency towline release**

A person shall not release the towline of any gyroglider or parasail in flight except in an emergency.

**101.269 Operating procedures**

Each person operating a gyroglider or parasail shall do so in accordance with the operating procedures recommended by the manufacturer.