Civil Aviation Rules

CIVIL AVIATION AUTHORITY
OF NEW ZEALAND
Te Mana Rererangi Tūmatanui o Aotearoa

Part 101

Gyrogliders and Parasails, Unmanned Aircraft (including Balloons), Kites, and Rockets – Operating Rules

22 December 2025

CAA Consolidation

Published by the Civil Aviation Authority of New Zealand

Rule Objective

The objective of Part 101is to maintain a safe operating environment for the following aircraft:

- unmanned aircraft, including;
    - moored balloons
    - free balloons
    - remotely piloted aircraft
    - control line model aircraft
    - free flight model aircraft
- kites
- rockets
- gyrogliders
- parasails.

Bulletin

This Part first came into force on 5 April 2025 and now incorporates the following amendments:

Amendment	Effective Date
Amendment 1	22 December 2025

Summary of amendments:

Amendment 1: (25/CAR/02)	The amendments of the rules in this Part are reflected by – **Revoking and replacing** rules 101.7, 101.11, 101.15, 101.203, 101.205, 101.207, 101.209, 101.211, 101.213, 101.215 and **inserting** rule 101.17.

List of Rules

Subpart A — General

101.1 Applicability

Subject to rule 102.21, this part prescribes rules governing the operation of-

(1) moored balloons and kites:

(2) free balloons:

(3) rockets:

(4) remotely piloted aircraft, control line model aircraft, and free flight model aircraft:

(5) gyrogliders and parasails.

101.3 Definitions

In this Part—

Aerodrome means an aerodrome that is promulgated in the current AIPNZ:

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^3:

Free flight model aircraft means a model aircraft with a maximum wing loading of 62 g/dm2 (20 oz/ft2), with a flight path that, once launched, is uncontrollable:

Gyroglider means a ground or water towed non-power-driven heavier-than-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^2; 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:

Large model rocket means a rocket that-

(1) uses more than 25 g but not more than 125 g of propellant; and

(2) produces more than 20 but not more than 320 Newton-seconds of total impulse; and

(3) uses a slow-burning propellant; and

(4) is made of lightweight materials such as paper, wood, rubber and plastic; and

(5) does not have the nose cone, fins, or body fabricated from metal; and

(6) has a gross mass, including the propellant of more than 453 g but not more than 1.5 kg:

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 Rocketry Safety Code means the code of that name that is approved by the New Zealand Rocketry Association:

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^3:

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:

Remotely piloted aircraft means an unmanned aircraft that is piloted from a remote station and—

(1) includes a radio controlled model aircraft; but

(2) does not include a control line model aircraft or a free flight model aircraft:

Rocket means a pilotless vehicle propelled by a system that contains every ingredient needed to form its own jet other than-

(1) an aerial firework; or

(2) a rocket propelled by a model rocket motor of size A-D which achieves no more than 20 Newton-seconds of total impulse:

Shielded operation means an operation of an aircraft within 100 m of, and below the top of, a natural or man-made object.

101.5 Registration

The requirements in Part 47 do not apply to unmanned aircraft, kites, rockets, parasails, and gyrogliders.

101.7 Restricted, military operating, and danger areas

(a) A person must not operate an unmanned aircraft, kite, rocket, gyroglider, or parasail within a restricted area designated under Part 71 unless the person has approval to do so from the administering authority responsible for the restricted area.

(b) A person must not operate an unmanned aircraft, kite, rocket, gyroglider, or parasail within a military operating area designated under Part 71 unless the person has approval to do so from the administering authority responsible for the military operating area.

(c) A person must not operate an unmanned aircraft, a gyroglider or parasail within a danger area designated under Part 71 unless the person has established that the activity associated with the danger area will not affect the safety of any person or the unmanned aircraft, gyroglider or parasail.

101.9 Low flying zones

A person must not operate any of the following within a low flying zone designated under Part 71:

(1) an unmanned aircraft:

(2) a kite:

(3) a rocket:

(4) a gyroglider:

(5) a parasail.

101.11 Controlled airspace

(a) A person must not operate any of the following in controlled airspace without prior authorisation from the ATC unit responsible for that airspace unless the operation is a shielded operation:

(1) an unmanned aircraft;

(2) a kite;

(3) a rocket;

(4) a gyroglider;

(5) a parasail.

(b) In addition to paragraph (a), a person must comply with the conditions and requirements specified in a transport instrument if using an unmanned aircraft.

101.12 Airspace knowledge

(a) This rule applies to a person who operates any of the following:

(1) an unmanned aircraft:

(2) a kite:

(3) a rocket:

(4) a gyroglider:

(5) a parasail.

(b) A person to whom this rule applies must-

(1) ensure that before each flight, the person is aware of the airspace designation under Part 71 and any applicable airspace restrictions in place in the area of intended operation; or

(2) conduct the operation under the direct supervision of a person who is aware of the airspace designation under Part 71 and any applicable airspace restrictions in place in the area of intended operation.

101.13 Hazard and risk minimisation

A person operating any of the following must take all practicable steps to minimize hazards to persons, property and other aircraft:

(1) an unmanned aircraft:

(2) a kite:

(3) a rocket:

(4) a gyroglider:

(5) a parasail.

101.15 Dropping of articles

(a) This rule applies to any person while they are operating:

(1) an unmanned aircraft:

(2) a kite:

(3) a rocket:

(4) a gyroglider: or

(5) a parasail.

(b) The person must not allow any object to be dropped in flight if this creates a hazard to other persons or property.

(c) The person who operates an unmanned aircraft must not carry out aerial spraying, aerial topdressing or application of aerial vertebrate toxic agent.

101.17 Transport Instruments made for the purposes of this Part

(a) A transport instrument made for the purposes of this Part may:

(1) impose conditions and obligations on a person who operates

(i) a remotely piloted aircraft:

(ii) a control line model aircraft; or

(iii) a free model aircraft; and

(2) specify the circumstances under which a person operates an aircraft.

(b) In accordance with section 431 of the Act a transport instrument made for the purpose of this part may be made by the Director.

(c) Before making a transport instrument the Director must have regard to relevant international standards, guidance and practice.

(d) The transport instrument must specify dates for compliance.

(e) The Director may amend or replace a transport instrument when necessary.

(f) A transport instrument is secondary legislation (see Part 3 of the Legislation Act 2019 for publication requirements).

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 must 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 must 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 Part 71; 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 New Zealand 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 must not operate a moored balloon or kite at night.

101.61 Balloon mooring line marking

A person must 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 1NM.

101.63 Balloon rapid deflation device

A person must 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 must 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 must 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 must 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 must not operate a heavy free balloon unless-

(1) it is equipped with-

(i) at least 2 payload flight-termination devices or systems, whether automatic or by telemetry, that operate independently of each other; and

(ii) an ADS-B system, if the balloon is to operate in transponder mandatory controlled airspace designated under Part 71 within the New Zealand FIR; and

(2) for polyethylene zero pressure balloons, at least 2 methods, systems, devices, or combinations of methods, systems and devices, 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 1 radar reflective device; or

(ii) radar reflective material that will present an echo to surface radar operating in the 2,700 MHz to 2,900 MHz frequency range.

101.109 Termination

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

(1) meteorological conditions are less than those prescribed in rule 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 must 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 5NM; 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 must 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 1NM.

101.115 Suspension device

A person must 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 1NM.

101.117 Pre-launch notice

(a) Except as provided in paragraph (b), a person must not launch a medium or heavy free balloon unless they provide the following information to the New Zealand 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 must 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 must forward the changes to the New Zealand 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 must 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 rule 101.117(a)(7) or (8).

101.121 Cancellation notice

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

101.123 Balloon position reports

Each person operating a medium or heavy free balloon must-

(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 must 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 must 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 must notify the nearest ATS unit when the operation has ended.

Subpart D — Rockets

101.151 Applicability

This Subpart prescribes rules governing the operation of rockets.

101.153 Large model rockets

A person must not operate a large model rocket except in accordance with the Model Rocketry Safety Code.

101.155 Aerodromes

(a) Except as provided in paragraph (b), a person must not operate a rocket on or within 4 km of an aerodrome boundary.

(b) A person may operate a rocket within 4 km of an aerodrome boundary providing–

(1) the rocket does not fly above 400 feet AGL; and

(2) at uncontrolled aerodromes, it is operated in accordance with an agreement with the aerodrome operator; and

(3) at controlled aerodromes, it is operated in accordance with an authorisation from ATC; and

(4) it is not operated on or over any active aircraft movement area of an aerodrome; and

(5) it is not operated on or over any active runway strip area.

(c) A person must not operate a rocket between 4 and 8 km of an aerodrome boundary above 400 feet AGL.

101.157 Meteorological limitations

(a) A person must not operate a rocket at any altitude where–

(1) there are clouds or obscuring phenomena of more than four-eighths coverage; and

(2) the horizontal visibility is less than 8 km.

(b) A person must not operate a rocket into cloud.

101.159 Night operations

Except for a large model rocket, a person must not operate a rocket at night.

101.161 Pre-launch notice

Except for a large model rocket, a person must not launch a rocket unless they provide the following information to the New Zealand NOTAM office at least 24 hours prior to launch:

(1) their name, address, and telephone number or, where there are multiple participants at a single event, the name, address, and telephone number of the person whose duties include co- ordination of the launch data estimates required by paragraphs (2), (3), and (4) of this rule and co-ordinating the launch event:

(2) the estimated number of rockets to be operated:

(3) the estimated size and the estimated weight of each rocket:

(4) the estimated highest altitude or flight level to which each rocket will be operated:

(5) the location of the operation:

(6) the date, time, and duration of the operation:

(7) any other relevant information requested by the person to whom notification is given.

Subpart E — Remotely Piloted Aircraft, Control Line Model Aircraft and Free Flight Model Aircraft

101.201 Applicability

Subject to rule 102.21, this Subpart applies to-

(1) remotely piloted aircraft; and

(2) control line model aircraft; and

(3) free flight model aircraft.

101.202 Approved person or organisation

In this Subpart, an approved person or organisation means a person or organisation having appropriate expertise in the design, construction or operation of remotely piloted aircraft, or appropriate knowledge of airspace designations and restrictions, and who has been approved by the Director to perform one or more of the following specified functions:

(1) issuing a pilot qualification for operating remotely piloted aircraft; or

(2) appointing persons to give instruction to operators of remotely piloted aircraft; or

(3) authorising a person to notify the aeronautical information service provider, for the issue of a NOTAM, of remotely piloted aircraft operations; or

(4) authorising the construction or modification of remotely piloted aircraft greater than 15kg (but not greater than 25kg); or

(5) inspecting and approving the construction of a remotely piloted aircraft greater than 15kg (but not greater than 25kg); or

(6) authorising the operation of a remotely piloted aircraft greater than 15kg (but not greater than 25kg).

101.203 Control line model aircraft

A person must not operate a control line model aircraft with a single or multiple wire system except as specified in a transport instrument.

101.205 Aerodromes

A person must not operate a remotely piloted aircraft or a free flight model aircraft within specified boundaries of an aerodrome except as specified in a transport instrument.

101.207 Airspace

(a) A person must not operate a remotely piloted aircraft in airspace above persons or above property unless the person complies with the conditions and requirements specified in a transport instrument.

(b) A person must not operate a remotely piloted aircraft above 400 feet above ground level unless the person complies with the conditions and requirements specified in a transport instrument.

101.209 Visual line of sight operation

(a) This rule applies to the following types of aircraft:

(1) a remotely piloted aircraft:

(2) a free flight model aircraft.

(b) *reserved*

(c) *reserved*

(d) *reserved*

(e) A person must not operate an aircraft in such a way as to obstruct the person's visual line of sight as specified in a transport instrument, unless the person meets the conditions specified in a transport instrument.

101.211 Night operations

A person must not operate a remotely piloted aircraft or free flight model aircraft at night unless under the circumstances specified in a transport instrument and the person meets the conditions specified in a transport instrument.

101.213 Right of way

A person who operates a remotely piloted aircraft, a control line model aircraft or a free flight model aircraft must comply with the requirements regarding right of way as specified in a transport instrument.

101.215 Aircraft mass limits

(a) A person must not operate a remotely piloted aircraft, a control line model aircraft or a free flight model aircraft with a gross mass that exceeds the weight specified in a transport instrument.

(b) A person must not operate a remotely piloted aircraft with a gross mass between the weights specified in a transport instrument unless the person meets the relevant conditions also specified in a transport instrument.

Subpart F — Gyrogliders and Parasails

101.251 Applicability

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

101.253 Aerodromes

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

(1) at an uncontrolled aerodrome, the gyroglider or parasail 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, the gyroglider or parasail is operated in accordance with an authorisation from the aerodrome air traffic control service.

(b) A person must not operate a gyroglider or parasail-

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

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

101.255 Airspace

A person operating a gyroglider or parasail above a height of 400 feet AGL must-

(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 New Zealand 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), a person operating a gyroglider or parasail must-

(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) does not apply to the shielded operation of a gyroglider or parasail.

101.259 Night operations

A person must not operate a gyroglider or parasail at night.

101.261 Airworthiness

A person who operates a gyroglider or parasail must ensure that it is fit for the intended purpose and is maintained in an airworthy condition in accordance with the manufacturer's instruction.

101.263 Safety equipment

A person operating a gyroglider or parasail must ensure that each person carried by the gyroglider or parasail-

(1) when flying over water, or within gliding distance of water, wears a positive buoyancy aid; and

(2) wears a rigid protective helmet; and

(3) is secured to the gyroglider or parasail by a harness; and

(4) for a parasail operation conducted with an extended towline length exceeding 600 feet, as measured from the winch drum to the parasail

canopy yoke, is equipped with a positive means of communicating with the parasail operator if an emergency occurs.

101.265 Pre-flight briefing

A person operating a gyroglider or parasail must ensure that each person carried by the gyroglider or parasail receives a pre-flight briefing on-

(1) the nature of the flight; and

(2) the standard operating procedures; and

(3) the emergency procedures including:

(i) the location and use of emergency equipment;

(ii) the procedures to be followed in the event of a water landing, or towline separation; and

(iii) the method for communicating with the gyroglider or parasail operator if an emergency occurs.

101.267 Emergency towline release

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

101.269 Operating procedures

A person operating a gyroglider or parasail must do so in accordance with the operating procedures and limitations recommended by the manufacturer.

101.271 Wind speed

A person operating a parasail must-

(1) use a method or device to accurately determine and monitor the wind speed at the location where the parasailing operation is being conducted; and

(2) not conduct a parasailing operation in conditions where the sustained wind speed exceeds 20 knots.

101.273 Passenger age limitation

A person operating a parasail must not-

(1) perform a parasailing operation with an extended towline length of more than 300 feet, as measured from the winch drum to the parasail canopy yoke, when carrying any solo passenger who is between 8 and 11 years old; and

(2) perform a parasailing operation with a passenger carried by a parasail who is less than 8 years old unless the passenger is accompanied by another passenger who is at least 18 years old, and is able to assist the younger passenger if an emergency occurs.