



**Notice of Proposed Rule Making  
NPRM 20/08-23  
11 December 2020**

**Part 101  
Gyrogliders and Parasails and  
Unmanned Aircraft (including  
Balloons), Kites, and Rockets –  
Operating Rules**

**Consequential Amendments:**

**Part 1**

**Part 12**

**Part 47**

**Part 61**

**Part 102**

**Part 141**

**Docket 20/08/CAR101/23  
2020 Rules Review**

Proposed Rule Applicable 11<sup>th</sup> December 2020

## Background to the Civil Aviation Rules

The Civil Aviation Rules establish the minimum regulatory safety boundary for participants to gain entry into, operate within, and exit the Papua New Guinea civil aviation system. The Rules are structured in a manner similar to the Civil Aviation Rules of New Zealand and the Federal Aviation Regulations of the USA. Where practicable the Rules also align with the International Civil Aviation Organization Annexes and the regulatory code of the Civil Aviation Safety Authority of Australia.

Rules are divided into Parts and each Part contains a series of individual rules that relate to a particular aviation activity. Advisory Circulars accompany many rule Parts and contain information about standards, practices and procedures that the Director has established to be an Acceptable Means of Compliance (AMC) with the associated rule. An Advisory Circular may also contain guidance material (GM) to facilitate compliance with the rule requirements.

The objective of the Civil Aviation Rules system is to strike a balance of responsibility between, on the one hand, the State and regulatory authority (CASA) and, on the other hand, those who provide services and exercise privileges in the civil aviation system. This balance must enable the State and regulatory authority to set standards for, and monitor performance of, aviation participants while providing the maximum flexibility for the participants to develop their own means of compliance within the safety boundary.

Section 45 of the Civil Aviation Act 2000 prescribes general requirements for participants in the civil aviation system and requires, among other things, participants to carry out their activities safely and in accordance with the relevant prescribed safety standards and practices.

Section 72 of the Act allows the Minister to make ordinary rules for any of the following purposes:

- (a) The implementation of Papua New Guinea's obligations under the Convention;
- (b) To provide for a safe, sustainable, effective and efficient aviation services;
- (c) The provision of aviation meteorological services, search and rescue services and civil aviation security programmes and services;
- (d) Assisting aviation safety and security, including but not limited to personal security;
- (e) Assisting economic development;
- (f) Improving access and mobility;
- (g) Protecting and promoting public health;
- (h) Ensuring environmental sustainability;
- (i) Any matter related or reasonably incidental to any of the following:
  - (1) The Minister's functions and role under section 8 of the Act;
  - (2) The Authority's general objects and functions under section 11 of the Act;
  - (3) The Authority's functions in relation to safety under section 12 of the Act; and
  - (4) The Director's functions and powers under section of 17 the Act
  - (5) The Director's powers under section 52A, 53 and 54 of the Act
- (j) Any other matter contemplated by any provision of the Act

## Contents

<b>1. Purpose of this NPRM .....</b>	<b>4</b>
<b>2. Background to the Proposal.....</b>	<b>4</b>
2.1 General Summary .....	4
2.2 NPRM Development .....	5
2.3 Key Stakeholders.....	6
<b>3. Issues Addressed during Development.....</b>	<b>6</b>
3.1 Consequential Amendments.....	6
3.2 Exemptions.....	6
3.3 ICAO SARPS and Level of Risk to Papua New Guinea Aviation Safety .....	7
3.4 Compliance Costs.....	7
<b>4. Summary of changes.....</b>	<b>7</b>
<b>5. Legislative Analysis.....</b>	<b>10</b>
5.1 Power to Make Rules .....	10
5.2 Matters to be taken into account.....	11
5.2.1 ICAO Standards and Recommended Practices.....	11
5.2.2 Assisting Economic Development.....	11
5.2.3 Assisting Safety and Personal Security .....	11
5.2.4 Improving Access and Mobility .....	11
5.2.5 Protecting and Promoting Public Health .....	11
5.2.6 Ensuring Environmental Sustainability .....	12
<b>6. Submissions on the NPRM .....</b>	<b>12</b>
6.1 Examination of Submissions .....	12
6.2 Disclosure.....	12
6.3 How to make a submission.....	12
6.4 Final date for submissions.....	13
6.5 Availability of the NPRM .....	13
6.6 Further information .....	13
<b>Proposed Rule Amenments .....</b>	<b>14</b>

## 1. Purpose of this NPRM

The purpose of this Notice of Proposed Rulemaking (NPRM) is to put forward for consideration proposed amendments to Civil Aviation Rule (CAR) Part 101.

## 2. Background to the Proposal

### 2.1 General Summary

#### RPAS/Drone operations in PNG

Remotely piloted aircraft (RPA) operations in Papua New Guinea are conducted either under Civil Aviation Rules Part 101 or Part 102.

At this time, under Part 101 drone operators in PNG may conduct remotely piloted aircraft systems (RPAS) activities only if all such drone operations are carried out wholly within the strict requirements of Part 101, and those operators self-regulate their own operations, but remain subject to CASA PNG surveillance and oversight.

Although there are general aircraft legislative requirements that apply to drone operators regarding the skills, qualifications, experience levels and standards, and the airworthiness status of RPA, respective specific requirements need to be incorporated into the legislation.

Furthermore, there are currently no specific provisions in the RPA rules for drone registration, remote pilot licensing, and unmanned aircraft aviation training organisations.

Part 101 at this time applies to both recreational and commercial operators with implied low levels of safety risk, but actual 'other-than-low-risk' commercial drone activities are being conducted without CASA PNG engagement or certification,

Such unregulated and uncertified operations pose safety and security concerns within and to other highly regulated aviation participants, and the civil aviation system in general, especially when these operations are conducted by new, inexperienced, low skilled and unqualified entrants to the civil aviation system.

#### Revised Risk Based Requirements for Drones

With these considerations in mind, CASA PNG has revised its approach to RPAS operations, to align the PNG unmanned aircraft rules with the recently released International Civil Aviation Organisation (ICAO) Model Unmanned Aircraft Systems (UAS) Regulations.

The new CASA PNG approach will implement the following changes:

- Part 101 only for *low-risk, recreational, non-commercial* drone operations.  
Part 101 will permit only low-risk, recreational, non-commercial RPAS operations to take place without the certification requirements of Part 102, *provided* the operation at all times remain compliant with the restrictions of Part 101.
- Part 102 unmanned aircraft operator certificate (UAOC)  
All commercial drone operations and all others that cannot operate at all times wholly within the restrictions of Part 101, are considered by CASA PNG as 'other-than-low-risk' and will therefore be required to hold a Part 102 unmanned aircraft operator certificate (UAOC) and specific authorisation from the Director regardless of the actual safety risk levels of the commercial operation.

## Unmanned Aircraft Rules and Terminology

The PNG Civil Aviation Rules Part 101 and Part 102 use different official terms which are defined in different parts of the respective rules. Part 101 will now apply to recreational, low-risk operations strictly within the restrictions of Part 101

Changes have been made to the following terms:

- ‘*Remotely piloted aircraft*’ (RPA) for the purposes of Part 101, includes ‘radio-controlled’ model aircraft but does not include control line model aircraft and free flight model aircraft.
- ‘*Model aircraft*’ now refers only to ‘free-flight’ model aircraft and ‘control-line’ model aircraft under the category of ‘unmanned aircraft’.

Part 102 applies to all unmanned aircraft that operate beyond the restrictions of Part 101 including fully autonomous unmanned aircraft, and programmable RPAS that operate automatically or on an automatic basis where the operator may manually intervene.

## 2.2 NPRM Development

Global developments and progress in Rules relating to unmanned aircraft has increased the original scope of the PNG RPAS rules and created the need for more detailed regulatory compliance in the areas of unmanned aircraft registration, remote pilot licensing, certification and operation.

### ICAO Model UAS Regulations

ICAO was requested by Member States to develop a regulatory framework for unmanned aircraft systems (UAS) that operate outside of the Instrument Flight Rules international arena. Accordingly ICAO undertook a review of the existing UAS regulations of many States to identify commonalities and best practices that would be consistent with the ICAO aviation framework and that could be implemented by a broad range of States.

The outcomes of this activity are the ICAO Model UAS Regulations titled Part 101, Part 102 and Part 149.

The ICAO Model UAS Regulations and companion ICAO Advisory Circulars (ACs) offer templates to implement or supplement the existing PNG RPAS regulations, and are intended to be documents that will change with industry maturity, and provide CASAPNG with internationally harmonised material based on the latest international RPAS developments.

The ICAO Model UAS Regulations Parts 101 and 102 main points that have been adapted for inclusion in the PNG rules are summarised below.

#### a) PNG Parts 47, 101 and 102

- Part 47 amended for registration of unmanned aircraft more than 250g
- Part 101 and Part 102 require inspection and approval of RPAS greater than 10 kg
- Part 102 covers operations of all RPAS greater than 25 kg
- Part 102 assessment required for RPAS under 25 kg operating outside of Part 101
- Part 102 requirements for on-going RPAS certificate operations or one-time authorisation events

**b) Part 141 Subpart Unmanned Aircraft Approved Organisation:**

The use of an Unmanned Aircraft Training Organisation (UATO) to serve as a designee authorised by the Director under Rule 101.202 approved to perform specific functions related to drones is enabled under the new Part 141 rules for unmanned aircraft.

Once the organisation has been certified and approved, its implementation of the authorised functions including remote pilot licence training courses, drone inspections and approvals etc., can provide more expeditious processing of certification and reduce the workload for CASA PNG Inspectors. This arrangement however, does not preclude the Director from tailoring authorisations and approvals to meet regulatory requirements nor implementation of direct oversight activities.

**c) Advisory Circulars (ACs)**

ICAO has also provided various Advisory Circulars (ACs) as guidance and explanatory materials relating to the ICAO Model UAS Regulations which will be used as a basis for PNG ACs related to the Rules:

- Part 101 ACs provide guidance associated with Part 101 unmanned aircraft restricted operations.
- Part 102 ACs provides guidance relating to Part 102 with the specific authorisations, operator certification for an unmanned aircraft operator certificate (UAOC) and requirements for manufacturers. Guidance is also given on the carriage and transportation of dangerous goods (DGs) by unmanned aircraft, and helps bring understanding of the risks and responsibilities for safe carriage of DGs including information for packing and marking.

**2.3 Key Stakeholders**

The Civil Aviation Safety Authority identifies the following as key stakeholders for the proposed rule amendments contained in this NPRM:

- (1) The Civil Aviation Safety Authority
- (2) The Minister for Transport
- (3) The Minister for Civil Aviation
- (4) Aviation Document Holders
- (5) Other interested stakeholders

**3. Issues Addressed during Development**

Major issues addressed during the development of this NPRM are detailed in the various paragraphs.

**3.1 Consequential Amendments**

As a consequence of changes and updates to Part 101, also amended are:

Part 1, Part 12, Part 47, Part 61, Part 102, Part 141.

**3.2 Exemptions**

Exemptions are not addressed in this NPRM

### 3.3 ICAO SARPS and Level of Risk to Papua New Guinea Aviation Safety

The ICAO Standards and Recommended Practices (SARPS) are applicable to international operations. Since operations under Part 101 are conducted wholly within PNG, the ICAO SARPS are incorporated at the discretion of the Director subject to aviation safety considerations and assessments in the PNG aviation context and environment.

Nevertheless, international regulatory standards and industry best practices have been reviewed, adapted and incorporated in Part 101

### 3.4 Compliance Costs

Costs associated with operations in compliance with the proposed amendments are expected to see the introduction of new charges and increase in fees

## 4. Summary of changes

The previous amendment to Part 101 was Amendment 1, dated 01 May 2017. This amendment updates are summarised as follows:

### Subpart A - General

- **Rule 101.3 Amended**

Added new terms '*autonomous aircraft*', '*autonomous operation*' and '*model aircraft*' to clarify that radio-controlled model aircraft are defined as remotely piloted aircraft, and amended '*remotely piloted aircraft*' definition to include '*autonomous aircraft*'

- **Rule 101.5 Amended**

Added new paragraph (a) that makes the rule registration subject to new paragraph (b) requiring remotely piloted aircraft to be registered under Part 47

- **Rules 101.9, 101.11, 101.12, 101.13, 101.15 - Amended**

Deleted the term 'kite' as it is included in the definition of unmanned aircraft.

- **Rule 101.12 - Amended and New Rule proposed**

Amended paragraph (b) to make to subject to new paragraph (c)

Amended paragraph (b)(1) to require familiarity with Part 71 airspace designations instead of having only an awareness of airspace classifications centred on Jackson's Airport and the close proximity of Port Moresby city to the airport boundary.

Amended paragraph (b)(2) to require the person directly supervising the operation must have basic knowledge and familiarity with Part 71 airspace designations.

Added new paragraph (c) to require the ability to demonstrate basic Part 71 airspace designation knowledge and any applicable restrictions.

- **Rule 101.17 Notification and reporting of occurrences – New Rule proposed**

Adapted from the ICAO Model UAS regulations requiring the unmanned aircraft remote pilot-in-command (PIC) or document holder to notify the Director as soon as practicable after an accident involving serious injury to any person or damage to property exceeding PGK 2,000. The details of such accidents to be given on Form CA005 or by a means acceptable to the Director.

- **Rule 101.19 Approval for areas for operation of unmanned aircraft – New Rule proposed**

Allows applications from persons wishing to have an area for unmanned aircraft operations designated and approved by the Director, and published by the aeronautical information service under Part 175.

### **Subpart E – Remotely piloted aircraft**

- **Rule 101.202 Approved person or organisation – Amended and New Rule proposed**

Restructured the rule into 3 paragraphs for clarity regarding RPAS design and construction expertise, operator qualifications and experience, and knowledge of airspace designations and restrictions, and grouping of functions for RPAS greater than 10kg into one paragraph.

New rule 101.202(c) inclusion of Part 102 UATO certificate holder.

- **Rule 101.204 Remotely piloted aircraft 400ft AGL – New Rule proposed**

Requires any person who operates an RPA above 400ft AGL may do so only as an approved person or organisation, or under a Part 102 authorisation or certificate.

- **Rule 101.205 Within 4km of aerodrome boundary – Amended and New Rule proposed**

The rule title is amended to specify operations within 4km of an aerodrome boundary in line with other rules in this Part, wording rearranged and paragraph renumbered for clarity and paragraph (d)(a)(3) deleted as it applies only to RPAs not kites.

New rule 101.205(a)(2)(ii) makes mandatory the use of aeronautical radio if operating in controlled airspace.

- **Rule 101.206 More than 4kmn of aerodrome boundary – New Rule proposed**

Previous rule 101.207(c)(1) and (2) rearranged and paragraph renumbered for clarity and topical applicability, and paragraph renumbering.

New Rule 101.206(a) added to require compliance with rule 101.204

- **Rule 101.207 Consent for operation over property - Amended**

Rule title is amended to specify consent for operations over property instead of airspace.

Wording rearranged and revised, and paragraph renumbered for clarity, and amended reference to new rule 101.204.

- **Rule 101.208 Consent for operation over and near people – New Rule proposed**

The requirements apply to any person except for RPA operations conducted by an approved organisation or a Part 102 UAOC holder; prescribes the requirements for RPA operations in proximity to persons whose consent have *not* been obtained relating to participants, covered structures, stationary vehicles and a minimum horizontal distance of 30m/100ft; prescribes the requirements for RPA operations in proximity to persons whose consent have been obtained specifying a minimum horizontal distance of 15m/50ft; exempts 30m/100ft requirement if the second person is behind a fixed wing RPA performing a take-off.

- **Rule 101.209 Visual line of sight operation – Amended**  
Paragraph (a) amended for clarity.
- **Rule 101.210 Weather and day limitations – New Rule proposed**  
Specifies weather requirements for non-Part 102 UAOC RPA operations in relation to cloud and VMC.
- **Rule 101.211 Night operations - Amended and New Rule proposed**  
New rule 101.211(b) authorises night operations for holders of Part 102 authorisation or UAOC that permit such night operations.
- **Rule 101.212 Remotely piloted aircraft operating area – New Rule proposed**  
Provides for bona-fide persons to apply for a designated airspace for RPA operations run by an administering authority.
- **Rule 101.215 Aircraft mass limits – Amended**  
Wording added and paragraphs amended to permit operations of RPA and model aircraft of more than 25kg gross mass, only under a Part 102 authorisation or certificate.
- **Rule 101.217 Standard operating conditions – New Rule proposed**  
Specifies the standard operating conditions for RPA operations which permit RPA operations in VLOS, 400ft AGL maximum height, daylight hours only and minimum 30m/100ft horizontal proximity to people; prohibits RPA operations in Part 71 Prohibited and Restricted areas, populated areas and within 4km of the boundary of an aerodrome and in areas where Fire, Police and other public safety and security operations are being conducted except with the approval of the person in charge; and restricts RPA operations of one person to one particular RPA.
- **Rule 101.219 Open category operations – New Rule proposed**  
Open Category Operations apply to RPA up to a gross mass on takeoff of 10kg and require operations under standard operating conditions of rule 101.217.
- **Rule 101.221 Requirement for remote pilot licence – New Rule proposed**  
Permits RPA operations without a pilot qualification under Part 101 more than 4km from an aerodrome and as an open category operation, but requires a pilot qualification for RPA operations within 4km of an aerodrome boundary.
- **Rule 101.223 Requirement for use of aeronautical radio in controlled airspace – New Rule proposed**  
Prohibits RPAS operations in controlled airspace without a relevant qualification, maintaining a listening watch and broadcasting of information, prescribes the conditions of a Part 102 authorisation issued by the Director to a person and to a particular RPAS or type of RPAS being operated under this rule
- **Rule 101.225 Prohibited operations – New Rule proposed**  
Prohibits RPAS operations in a manner that is an endangerment to persons and property, and whilst operating a moving vehicle, vessel or manned aircraft.
- **Rule 101.227 Prohibited psychoactive substances – New Rule proposed**  
Prohibits RPAS operations whilst in a state of intoxication, within 12 hours of consuming alcoholic beverages or when in an impaired state, and the Director may require that person to be subjected to a test.

- **Rule 101.229 Inspection and compliance – New Rule proposed**

Requires the RPAS owner or operator to, upon request, make available to the Director the pilot qualification, the RPA type rating, and other documents and records and empowers the Director to test or inspect any RPAS and associated persons to determine compliance with the rules.

## 5. Legislative Analysis

### 5.1 Power to Make Rules

The Minister may make ordinary rules under sections 69, 70, 71 and 72 of the Civil Aviation Act 2000, for various purposes including implementing Papua New Guinea's obligations under the Convention, assisting aviation safety and security, and any matter contemplated under the Act.

These proposed rules are made pursuant to:

- (a) Section 69(1)(a) which allows the Minister to make rules for the purpose of the implementation of Papua New Guinea's obligations under the Convention:
- (b) Section 69(b) which allows the Minister to make rules for the purpose of assisting aviation safety and security, including (but not limited to) personal security:
- (c) Section 69(5) which allows the Minister to make rules that provide for matters to be determined or approved by the Authority, the Director, or any other person or empower the Authority, the Director or any other person to impose requirements, or conditions on the performance of any activity including but not limited to procedures to be followed:
- (d) Section 70(c) which allows the Minister to make rules providing for general operating rules, air traffic rules, and flight rules, including but not limited to the following:
  - (1) the conditions under which aircraft may be used or operated, or under which any act may be performed in or from an aircraft:
  - (2) the prevention of aircraft endangering persons or property.
- (e) Section 72(a) which allows the Minister to make rules for the designation, classification, and certification of all or any of the following:
  - (1) aircraft:
  - (2) aircraft pilots:
  - (3) flight crew members:
  - (4) air traffic service personnel:
  - (5) aviation security service personnel:
  - (6) aircraft maintenance personnel:
  - (7) aviation examiners or medical examiners:
  - (8) air services:
  - (9) air traffic services:
  - (10) aerodromes and aerodrome operators:
  - (11) aeronautical navigation service providers:
  - (12) aviation training organisations:
  - (13) aircraft design, manufacture, and maintenance organisations:
  - (14) aeronautical procedures:
  - (15) aviation security services:

- (16) aviation meteorological services:
  - (17) aeronautical communication services:
  - (18) any other person who provides services in the civil aviation system, and any aircraft, aeronautical products, aviation related services, facilities, and equipment operated in support of the civil aviation system, or classes of such persons, aircraft, aeronautical products, aviation related services, facilities, and equipment operated in support of the civil aviation system:
- (f) Section 70(b) which allows the Minister to make rules for the setting of standards, specifications, restrictions, and licensing requirements for all or any of those persons or things specified in paragraph 70(a) including the specifications of standards of design, construction, manufacture, processing, testing, supply, approval, and identification of aircraft and aeronautical products:
  - (g) Section 70(c) which allows the Minister to make rules setting the conditions of operation of foreign aircraft and international flights to, from, or within Papua New Guinea:
  - (h) Section 70(d) which allows the Minister to make rules for the definitions, abbreviations, and units of measurement to apply within the civil aviation system.

The proposed amendment of Part 43 complies with the requirements of the Civil Aviation Act and does not contravene the Constitution, the Aerodrome (Business Concession) Act, Civil Aviation (Aircraft Operator Liability) Act, Aircraft Charges Act, Airport Departure Tax Act, the Explosive Act, Firearms Act, Customs Act, Plant and Disease Control Act and the Environmental Act.

The proposed Rule has been checked for language and compliance with the legal conventions of Papua New Guinea.

## **5.2 Matters to be taken into account**

The development of this NPRM and the proposed rule changes take into account the matters under section 75 of the Act that the Minister must take into account when making ordinary rules including the following:

### **5.2.1 ICAO Standards and Recommended Practices**

The proposed rule amendments take account of ICAO SARPs.

### **5.2.2 Assisting Economic Development**

The proposed rule amendments is not expected to have any adverse impact on economic development.

### **5.2.3 Assisting Safety and Personal Security**

The proposed rule amendments will help improve safety levels and may improve personal security.

### **5.2.4 Improving Access and Mobility**

The proposed rule amendments will not adversely affect access and mobility.

### **5.2.5 Protecting and Promoting Public Health**

The proposed rule amendments can positively impact the protection and promotion of public health.

### **5.2.6 Ensuring Environmental Sustainability**

The proposed rule amendments is not expected to have any adverse impact on environmental sustainability.

## **6. Submissions on the NPRM**

### **6.1 Submissions are invited**

Interested persons are invited to participate in the making of the proposed rules by submitting written data, views, or comments. All submissions will be considered before final action on the proposed rulemaking is taken. If there is a need to make any significant change to the rule requirements in this proposal as a result of the submissions received, then interested persons may be invited to make further submissions.

### **6.1 Examination of Submissions**

All submissions will be available in the rules docket for examination by interested persons both before and after the closing date for submissions. A consultation summary will be published on the CA web site and provided to each person who submits a written submission on this NPRM. Submissions may be examined by application to the Docket Clerk at the Civil Aviation Safety Authority Headquarter Building 1, Level 1, Morea Tobo Road, Six Mile, NCD Port Moresby between 8:30 am and 3:30 pm on weekdays, except statutory holidays.

### **6.2 Disclosure**

Submitters should note that any information attached to submissions will become part of the docket file and will be available to the public for examination at the CASA office.

Submitters should state clearly if there is any information in their submission that is commercially sensitive or for some other reason the submitter does not want the information to be released to other interested parties.

### **6.3 How to make a submission**

Submissions may be sent to CASA PNG by the following methods:

- |            |  |
|------------|--|
| by Mail:   | Docket Clerk (NPRM 20/08-23)<br>Civil Aviation Safety Authority<br>PO Box 1941<br>Boroko, Port Moresby.<br>National Capital District |
| delivered: | Docket Clerk (NPRM 20/08-23)<br>Civil Aviation Safety Authority<br>Morea-Tobo Road<br>Six Mile, Jacksons Airport<br>Port Moresby NCD |
| by Fax:    | Docket Clerk (NPRM 20/08-23)<br>3251789 / 325 1919   |
| by Email:  | Docket Clerk (NPRM 20/08-23)<br><a href="mailto:rules@casapng.gov.pg">rules@casapng.gov.pg</a>                                       |

#### **6.4 Final date for submissions**

Comments must be received before **COB, 20<sup>th</sup> November 2020**

#### **6.5 Availability of the NPRM**

Any person may obtain a copy of this NPRM from the CASA PNG web site:  
[www.casapng.gov.pg](http://www.casapng.gov.pg)

*or at a cost from*

The Docket Clerk  
Civil Aviation Safety Authority Headquarter  
Building 1, Level 1  
Morea-Tobo Road  
Six Mile, Jacksons Airport  
Port Moresby NCD

#### **6.6 Further information**

For further information, contact:

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## Proposed Rule Amendments

### Part 101 Gyrogliders and Parasails and Unmanned Aircraft (including Balloons), Kites and Rockets – Operating Rules

#### Subpart A — General

##### 101.1 Applicability

Subject to rule 102.1(a)~~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 PNG AIP:

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

**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 balloon 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 balloon:

**Model aircraft** means control line model aircraft or free flight model aircraft but does not include 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, that 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:

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

- (1) includes a radio controlled model aircraft and autonomous 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 all the ingredients 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 within 100 m of, and below the top of, a natural or man-made object.

## 101.5 Registration

- (a) The requirements in Part 47 do not apply to unmanned aircraft, ~~kites,~~ rockets, gyrogliders and parasails.
- (b) Notwithstanding paragraph (a), the requirements in Part 47 apply to remotely piloted aircraft.

## 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 the 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 the 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 Part 71 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 any of the following within a low flying zone designated under Part 71:

- (1) an unmanned aircraft:
- ~~(2) a kite:~~
- ~~(3)~~(2) a rocket:
- ~~(4)~~(3) a gyroglider:
- ~~(5)~~(4) a parasail

### 101.11 Controlled airspace

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)~~(2) a rocket:
- ~~(4)~~(3) a gyroglider:
- ~~(5)~~(4) a parasail.

### 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)~~(2) a rocket:
- ~~(4)~~(3) a gyroglider:
- ~~(5)~~(4) a parasail.

(b) Subject to paragraph (c), A person to whom this rule applies must-

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

(c) A person who intends to operate an unmanned aircraft, prior to conducting operations, must be able to demonstrate, in a manner and to a standard acceptable to the Director —

- (1) basic knowledge of airspace designation under Part 71; and
- (2) 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 minimise hazards to persons, property and other aircraft:

- (1) an unmanned aircraft:
- ~~(2) a kite:~~
- ~~(3)~~(2) a rocket:
- ~~(4)~~(3) a gyroglider:
- ~~(5)~~(4) a parasail:

### **101.15 Dropping of articles**

A person operating any of the following must not allow any object to be dropped in flight if such action creates a hazard to other persons or property:

- (1) an unmanned aircraft:
- ~~(2)~~ a kite:
- ~~(3)~~(2) a rocket:
- ~~(4)~~(3) a gyroglider:
- ~~(5)~~(4) a parasail.

### **101.17 Notification and reporting of occurrences**

- (a) A remote pilot-in-command, or if that person is unable, the holder of the unmanned aircraft authorisation or unmanned aircraft operator certificate issued under the rules, must notify the Director as soon as practicable, after an incident involving:
  - (i) serious injury to any person; or
  - (ii) damage to any property other than the unmanned aircraft.
- (b) The notification required in paragraph (a)(i) must be provided in manner acceptable to the Director.
- (c) The details of the notifiable incidents in paragraph (a) must be provided to the Director on form CA005 prescribed in Part 12, or by a means acceptable to the Director.

### **101.19 Approval of areas for operation of unmanned aircraft**

- (a) A person may apply to the Director for the approval of an area as an area for the operation of:
  - (1) unmanned aircraft generally, or for a particular category of unmanned aircraft, and such approval when granted;
    - (i) will have effect from the time and date specified in the approval contained in the written notice issued to the applicant by the Director; or
    - (ii) will have effect for a particular period, including a period of less than 1 day, or longer, as specified by the Director.
    - (iii) may be subject to conditions imposed by the Director in the interests of aviation safety.
  - (2) Details of an approval granted by the Director under paragraph (1), will be published, including any conditions, in accordance with the Part 175 requirements for the publication of aeronautical information.
- (b) The Director may revoke the approval of an area, or change the conditions that apply to such an approval, in the interests of aviation safety and security, and-
  - (1) publish details of any such revocation or change in accordance with the requirements for publication of aeronautical information of Part 175; and
  - (2) make available written notice of the revocation or change to the person who:
    - (i) applied for the approval of the area; or
    - (i) —currently holds the office, if the person who applied for the approval as an officer of an organization concerned with unmanned aircraft, no longer holds that office.

## 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, a person operating a moored balloon or kite at a height of more than 400 feet AGL shall—

- (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 shall 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 F 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 Papua New Guinea 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.

### **101.107 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 Papua New Guinea 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 Papua New Guinea 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 — Rockets****101.151 Applicability**

This Subpart prescribes rules governing the operation of rockets.

**101.153 Aerodromes**

- (a) Except as provided in paragraph (b), a person shall 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 shall not operate a rocket between 4 and 8 km of an aerodrome boundary above 400 feet AGL.

### **101.155 Meteorological limitations**

- (a) A person shall 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 shall not operate a rocket into cloud.

### **101.157 Night operations**

A person shall not operate a rocket at night.

### **101.159 Pre-launch notice**

A person shall not launch a rocket unless they provide the following information to the Papua New Guinea 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 102.1(a)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—

- (a) —having appropriate:
- (1) expertise in the design, or construction or operation of remotely piloted aircraft; or
  - (2) qualifications and experience in the operation of remotely piloted aircraft; or
  - (3) appropriate knowledge of airspace designations and restrictions; and

- (b) 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) ~~for authorising the construction or modification of~~ remotely piloted aircraft greater than 10kg; ~~or~~
    - (i) ~~authorising the construction and modification; or~~
    - (ii) inspecting and approving the construction or modification ~~of remotely piloted aircraft greater than 10kg; or~~
    - (iii) ~~authorising the operation of a remotely piloted aircraft greater than 10kg; or~~
- (c) conducting aviation training and assessments under the provisions of an unmanned aircraft training organisation certificate issued under Part 141.

### **101.203 Control line model aircraft**

A person must not operate a control line model aircraft with a single or multiple wire system longer than 30 m.

### **101.204 Remotely piloted aircraft above 400ft AGL**

- (a) A person must not operate a remotely piloted aircraft at a height greater than 400ft above ground level (AGL) unless the operation is conducted —
- (1) by an approved person or organisation; or
  - (2) under the provisions of an authorisation or certificate issued under Part 102.

### **101.205 Within 5nm of Aerodromes boundary**

- (a) A person must not operate a remotely piloted aircraft on or within ~~4 km~~ 5 nm ~~of the boundary 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, it is launched downwind of an active runway; and
    - (iii) in the case of a remotely piloted aircraft-
      - (A) each pilot has an observer in attendance while the aircraft is in flight; and
      - (B) the aircraft is not operated at a height of more than 400 feet above ground level unless the operator has been approved by the Director to operate the aircraft above 400 feet above ground level; and

- (2) a controlled aerodrome, unless it is operated in accordance with: ~~an authorisation from the relevant ATC unit;~~
- (i) an authorisation from the relevant ATC unit; and
  - (ii) rule 101.223 if the operation is in controlled airspace; and
- (3) any aerodrome, unless the person is:-
- ~~(i) the person-~~
  - ~~(A)~~(i) is the holder of, or is under the direct supervision of the holder of, a pilot qualification issued by an approved person or organisation; or
  - ~~(B)~~(ii) is under the direct supervision of a person appointed to give instruction in the operation of remotely piloted aircraft by an approved person organisation;
  - ~~(C)~~(iii) is the holder of a pilot licence or certificate issued under Part 61.
- (b) A person must not operate a remotely piloted aircraft on or over any active—
- ~~(1) on or over any active-aircraft movement area of an aerodrome;~~ or
  - ~~(2) on or over any active-runway strip area.~~
- (c) Paragraph (a) does not apply to a shielded operation that is conducted-
- (1) outside the boundary of the aerodrome; and
  - (2) in airspace that is physically separated from the aerodrome by a barrier that is capable of arresting the flight of the aircraft.
- ~~(d) Paragraph(a)(3) does not apply to a free flight model aircraft.~~

### **101.206 More than 5nm from aerodrome boundary and above 400ft AGL**

A person operating a remotely piloted aircraft more than 5 nm from an aerodrome boundary must not operate at a height greater than 400 feet AGL, unless —

- (a) the operation is conducted in accordance with rule 101.204; and
- (b) the operation remains within Class F airspace; and
- (c) the operation is conducted in a Danger Area designated under Part 71; and
- (d) at least 24 hours before the operation, a person authorised by an approved person or organisation, notifies the aeronautical information service provider for the issue of a NOTAM, of the following information:
  - (1) the name, address, and telephone number of the operator;
  - (2) the location of the proposed operation;
  - (3) the date and time and duration of the proposed operation;
  - (4) the maximum height above ground level proposed for aircraft operation.

### **101.207 Consent for operation over property Airspace**

- (a) A person operating a remotely piloted aircraft must ~~—~~
- (1) unless operating in a danger area under Part 71, ~~not operate above a property unless prior consent has been obtained from any person occupying that property or the owner of that property; and avoid operating—~~
    - (i) ~~in airspace above persons who have not given consent for the aircraft to operate in that airspace; and~~
    - (ii) ~~above property unless prior consent has been obtained from any persons occupying that property or the property owner; and~~
  - (2) maintain observation for other aircraft ~~of in~~ the surrounding airspace in which the remotely piloted aircraft is operating ~~for other aircraft; and~~
  - (3) not operate the aircraft at any height ~~above~~ greater than 400 feet above ground level except in accordance with ~~paragraph (e) rule 101.204.~~
- (b) Nothing in paragraph (a) requires a person to obtain consent from any person if operating under the authority of an approved organisation ~~or under the provisions of an authorisation or certificate issued under Part 102.~~
- ~~(c) A person operating a remotely piloted aircraft more than 4 km from an aerodrome boundary and above 400 feet above ground level must ensure that the operation remains within Class F airspace and must—~~
- ~~(1) operate in a danger area designated for that purpose under Part 71; or~~
  - ~~(2) ensure that at least 24 hours before the operation, a person authorised by an approved person or organisation, notifies the aeronautical information service provider, for the issue of a NOTAM, of the following information:~~
    - ~~(i) the name, address, and telephone number of the operator;~~
    - ~~(ii) the location of the proposed operation;~~
    - ~~(iii) the date and time and duration of the proposed operation;~~
    - ~~(iv) the maximum height above ground level proposed for aircraft operation.~~

### **101.208 Consent for operation over and near people**

Except for remotely piloted aircraft operations conducted under the authority of an approved organisation as prescribed in rule 101.207(b) —

- (a) No person may operate a remotely piloted aircraft over a person unless that person is:
- (1) directly participating in or associated with the operation of the remotely piloted aircraft;  
or
  - (2) located under a covered structure or inside a stationary vehicle that can provide reasonable protection; or
  - (3) a second person not directly associated with the operation of the remotely piloted aircraft, provided the remotely piloted aircraft is operated no closer than 30m or 100ft measured horizontally from that second person.

- (b) Paragraph (a)(1), (a)(2), or (a)(3) do not apply if:
- (1) the person has given consent for the remotely piloted aircraft to operate in airspace over or near that person; and
  - (2) the remotely piloted aircraft is operated no closer than 15m or 50ft measured horizontally, of that person.
- (c) Paragraph (a)(3) does not apply if that second person is standing behind a fixed wing remotely piloted aircraft while the fixed wing remotely piloted aircraft is performing a take-off.

### **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) A person must not operate an aircraft to which this rule applies in-
- (1) any area in which the person's view of the surrounding airspace in which the aircraft will operate is obstructed; or
  - (2) meteorological conditions that obstruct the person's ability to maintain visual line of sight of the aircraft.
- (c) A person who operates an aircraft to which this rule applies must at all times-
- (1) maintain visual line of sight with the aircraft; and
  - (2) be able to see the surrounding airspace in which the aircraft is operating; and
  - (3) operate the aircraft below the cloud base.
- (d) For the purpose of this rule visual line of sight means a straight line along which an observer has a clear view and which may be achieved with the use of —
- (1) spectacles, contact lenses, or a similar device used to correct subnormal vision of the user to no better than normal vision but not the use of an electronic, mechanical, electromagnetic, optical, or electro-optical instrument; or
  - (2) a first person view system and a trained and competent observer who maintains-
    - (i) visual line of sight of the aircraft; and
    - (ii) sight of the surrounding airspace in which the aircraft is operating; and
    - (iii) direct communication with the person who is operating the aircraft.

### **101.210 Weather and day limitations**

- (a) A person must not operate a remotely piloted aircraft —
- (1) in or into cloud; or
  - (2) in conditions other than visual meteorological conditions (VMC) unless:
    - (i) otherwise permitted under this Part; or
    - (ii) in accordance with an air traffic control clearance.
- (b) Paragraph (a) does not apply the holder of an authorisation or a certificate issued under Part 102 that permits such operations.

**101.211 Night operations**

- (a) A person must not operate a remotely piloted aircraft at night unless the operation is—
  - (1) indoors; or
  - (2) a shielded operation.
- (b) Paragraph (a) does not apply to the holder of an authorisation or a certificate issued under Part 102 that permits such operations.

**101.212 Remotely piloted aircraft operating area**

- (a) A person with a bona fide interest in airspace allocation may apply to the Director in accordance with Part 71, for the designation or classification of airspace for the operation of remotely piloted aircraft.
- (b) A person must not operate a remotely piloted aircraft within a remotely piloted aircraft operating area designated under paragraph (a) unless that person has obtained prior approval to do so from the administering authority responsible for the remotely piloted aircraft operating area.

**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 of more than 25 kg—
  - (1) except with the approval of and subject to any conditions or limitations specified by the Director; or
  - (2) in the case of remotely piloted aircraft, under the provisions of an authorisation or certificate issued under Part 102.
- (b) A person must not operate a remotely piloted aircraft with a gross mass of between 10 kg and 25 kg unless the aircraft, and any modification made to it, is—
  - (1) constructed under the authority of, or inspected and approved by, an approved person or organisation defined in rule 101.202; and
  - (2) operated under the authority of an approved person or organisation defined in rule 101.202.

**101.217 Standard operating conditions**

A remotely piloted aircraft is operated in standard remotely piloted operating conditions if, during the operation —

- (a) the remotely piloted aircraft is operated:
  - (1) maintaining visual line-of-sight in accordance with rule 101.209; and
  - (2) at or below 120m/400ft above ground level; and
  - (3) during the daylight hours; and
  - (4) not less than 30m or 100ft horizontally from any person who is not directly associated with the operation of the remotely piloted aircraft; and
- (b) the remotely piloted aircraft is not operated:
  - (1) in a prohibited area designated under Part 71; or
  - (2) in a restricted area designated under Part 71; or

- (3) over a populated area; or
- (4) within 4km of the movement area of a controlled aerodrome; and
- (c) the remotely piloted aircraft is not operated in or over an area where a fire, police or other public safety, security or emergency operation is being conducted without the approval of a person in charge of the operation; and
- (d) the person operating the remotely piloted aircraft operates only that specific remotely piloted aircraft

### **101.219 Open Category Operations**

A person may conduct remotely piloted aircraft operations as open category operations if that person—

- (a) uses a remotely piloted aircraft with a maximum gross mass of up to 10 kg on takeoff and throughout the duration of each operation, including all items that are on board or otherwise attached to the aircraft: and
- (b) operates the remotely piloted aircraft in accordance with the standard operating conditions prescribed in rule 101.217.

### **101.221 Requirement for remote pilot licence**

- (a) No person may operate a remotely piloted aircraft without a pilot qualification unless the operation is conducted —
  - (1) in accordance with the requirements of Part 101: and
  - (2) more than 6km from the boundary of the nearest aerodrome: and
  - (3) as an open category operation as prescribed in rule 101.219.
- (b) No person may operate a remotely piloted aircraft within 4 km of the boundary of an aerodrome unless that person has —
  - (1) a pilot qualification; or
  - (2) a qualification of knowledge of the use of aeronautical charts and airspace.

### **101.223 Requirement for the use of aeronautical radio in controlled airspace**

- (a) A person must not operate a remotely piloted aircraft in controlled airspace unless that person —
  - (1) holds a relevant qualification as prescribed in paragraph (b); and
  - (2) maintains a listening watch on the specified frequency; and
  - (3) makes broadcasts on the specified frequency at the specified interval giving the specified information.
- (b) The relevant qualification referred to in paragraph (a)(1) means any of the following —
  - (1) an aeronautical radio operator certificate; or
  - (2) a remote pilot licence or flight crew licence; or
  - (3) an air traffic control licence; or
  - (4) a flight service licence; or

- (5) a military qualification equivalent to a licence in paragraph (b)(2), or (b)(3) or (b)(4).
- (c) The specified frequency and specified interval referred to in paragraphs (a)(2) and (a)(3) mean, for a particular airspace, the following —
- (1) specified frequency means a frequency specified from time to time in the AIP or by ATC, as a frequency for use in that airspace;
  - (2) specified interval means the interval specified from time to time in AIP or by ATC, as the interval at which broadcasts must be made while in that airspace;
  - (3) specified information means information specified from time to time in the AIP or by ATC, as information that must be broadcast in that airspace.
- (d) The Director may require in an authorisation issued under Part 102, that a particular person must not operate a remotely piloted aircraft unless that person —
- (1) satisfies the requirements of paragraphs (a) and (b); and
  - (2) complies with the conditions of the authorisation.
- (e) The Director may require in an authorisation issued under Part 102, with regard to a particular remotely piloted aircraft or type of remotely piloted aircraft, that a person must not operate the remotely piloted aircraft unless that person —
- (3) satisfies the requirements of paragraphs (a) and (b); and
  - (4) complies with the conditions of the authorisation.

### **101.225 Prohibited operations**

- (a) No person may operate a remotely piloted aircraft in a careless or reckless manner so as to endanger or likely to be an endangerment to aviation safety and security or the safety and security of any person or property.
- (b) No person may operate a remotely piloted aircraft while that person is operating a moving vehicle, vessel or manned aircraft.

### **101.227 Prohibited psychoactive substances**

- (a) No person may act or attempt to act as a remote pilot, crew member or observer of a remotely piloted aircraft or attempt to perform any other safety critical role —
- (1) in a state of intoxication; or
  - (2) within 12 hours of consuming any alcoholic beverage; or
  - (3) in a state of health in which the person's capacity to perform their duties would be impaired by reason of having consumed or used any alcohol, drugs or other psychoactive substances.
- (b) Where the Director has reasonable grounds to believe a person of violating the requirements of paragraph (a), that person must submit to a test required by the Director for the presence of alcohol, drugs and other psychoactive substances.
- (c) The test required by paragraph (b) must be conducted by a person authorised for the purpose by the Director within 4 hours of the person acting or attempting to act in their assigned role.

**101.229 Inspection and Compliance**

- (a) A person who owns or operates a remotely piloted aircraft must, upon request, make available to the Director —
- (1) the remote pilot qualification; and
  - (2) the remotely piloted aircraft type rating, if applicable; and
  - (3) any other documents, records or reports required under the rules.
- (b) The Director may conduct any test or inspection of the remotely piloted aircraft system, and persons associated with aircraft operations including visual observers, to determine compliance with the rules.