



# **CIVIL AVIATION SAFETY AUTHORITY OF PNG**

## **PNG Civil Aviation Rule Part 102**

### **Unmanned Aircraft Operator Certification and Operation**

Applicable 02 November 2021

## DESCRIPTION

Part 102 prescribes the requirements for the certification *and operation* of unmanned aircraft type remotely piloted aircraft systems (RPAS) including radio-controlled model aircraft.

It contains provisions for a Part 102 Unmanned Aircraft Operator Authorisation (UAOA), an Unmanned Aircraft Operator Certificate (UAOC) and elective requirements for RPAS manufacturers. In a major amendment and consolidation of both Part 101 and Part 102, RPAS rules that were previously in Part 101 have been repealed and replaced as Part 102 requirements, and new updated rules added.

## BULLETIN

This Part first came into force on 1 May 2017 and now incorporates the following amendment:

<b>Amendment</b>	<b>Effective Date</b>
Amendment 1	14 December 2020
Amendment 2	02 November 2021

### *Summary of amendments:*

#### ***Amendment 2:***

(Docket 21/09/CAR102/24)

Part 102 Title– amended: Title amended to include *operation* of unmanned aircraft.

Rule 102.1 Purpose – amended: Title amended to ‘Applicability’. Rule repealed and replaced with applicability to the certification *and operation* of RPA in PNG.

Rule 102.3 Applicability– amended: Title amended to ‘Definitions’. Rule repealed and replaced with definitions from Part 101.

Rule 102.5 Definitions – amended: Title amended to ‘Inspection and Compliance’. Rule repealed and replaced with new rule (previously rule 101.229).

Rule 102.7 Requirement for authorisation or certificate– amended: Title amended to ‘Notification and reporting of occurrences’. Rule repealed and replaced with new rule (previously rule 101.17).

Rule 102.9 Application for authorisation or certificate... – amended: Title amended to ‘Use of aeronautical radio’. Rule repealed and replaced with new rule (previously rule 101.223).

Rule 102.11 Unmanned aircraft application and exposition – Reserved: Rule repealed and reserved. Replaced with new rule 102.161.

Rule 102.13 Grant of authorisation or certificate – Reserved: Rule repealed and reserved. Replaced with new rule 102.163.

Rule 102.15 Operations specifications – Reserved: Rule repealed and reserved. Replaced with new rule 102.165.

Rule 102.17 Privileges of authorisation or certificate holder – Reserved: Rule repealed and reserved. Replaced with new rule 102.167.

Rule 102.19 Duration of certificate – Reserved: Rule repealed and reserved. Replaced with new rule 102.169.

Rule 102.21 Conditions of operation of unmanned aircraft – Reserved: Rule repealed and reserved. Replaced with new rule 102.171.

Rule 102.23 Changes to exposition – Reserved: Rule repealed and reserved. Replaced with new rule 102.173.

Rule 102.25 Renewal of certificate – Reserved: Rule repealed and reserved. Replaced with new rule 102.175.

Rule 102.27 Retention of records – Reserved: Rule repealed and reserved. Replaced with new rule 102.177.

Rule 102.29 Safety management system – Reserved: Rule repealed and reserved. Replaced with new rule 102.179.

Subpart B Operation of remotely piloted aircraft – New Subpart: New Subpart B for registration and operation of RPAS incorporating RPA operating rules from repealed RPA Part 101 requirements.

Rule 102.51 Applicability – New Rule: New rule for applicability of Subpart B to registration and operation of RPAS.

Rule 102.53 Registration – New Rule: New rule for registration for persons who will operate an RPA. New rule - previously rule 101.5.

Rule 102.55 Standard operating conditions – New Rule: New rule - previously rule 101.217.

Rule 102.57 Approval for areas of operation – New Rule New rule - previously rule 101.19.

Rule 102.59 Approved person or organisation – New Rule: New rule - previously rule 101.202.

Rule 102.61 Airspace knowledge – New Rule: New rule - previously rule 101.12.

Rule 102.63 Controlled airspace – New Rule: New rule - previously rule 101.11.

Rule 102.65 Low flying zones – New Rule: New rule - previously rule 101.9.

Rule 102.67 Restricted, military operating, and danger areas – New Rule: New rule - previously rule 101.7.

Rule 102.69 Hazard and risk mitigation – New Rule: New rule - previously rule 101.13.

Rule 102.71 Dropping of articles – New Rule: New rule - previously rule 101.15.

Rule 102.73 Above 400ft AGL – New Rule: New rule - previously rule 101.204.

Rule 102.75 Operation on or within 3 nm of an aerodrome – New Rule: New rule reduces distance from 5 nm to 3 nm measured from the aerodrome reference point (ARP). New rule - previously rule 101.205.

Rule 102.77 Operation more than 3 nm of an aerodrome – New Rule: New rule reduces distance from 5 nm to 3 nm measured from the aerodrome reference point (ARP). New rule - previously rule 101.206.

Rule 102.79 Airspace designation – New Rule: New rule - previously rule 101.212.

Rule 102.81 Operation over property – New Rule: New rule - previously rule 101.207.

Rule 102.83 Operation over or near people – New Rule: New rule - previously rule 101.208.

Rule 102.85 Visual line of sight operation – New Rule: New rule - previously rule 101.209.

Rule 102.87 Weather and day limitations – New Rule: New rule - previously rule 101.210.

Rule 102.89 Night operations – New Rule: New rule - previously rule 101.211.

Rule 102.91 Right of way – New Rule: New rule - previously rule 101.213.

Rule 102.93 Aircraft mass limits – New Rule: New rule - previously rule 101.215.

Rule 102.95 Open category operations – New Rule: New rule - previously rule 101.219.

Rule 102.97 Prohibited operations – New Rule: New rule - previously rule 101.225.

Rule 102.99 Prohibited psychoactive substances – New Rule: New rule - previously rule 101.227.

Subpart C Remote pilot licence requirements – New Subpart: New Subpart for remote pilot qualification for the operation of remotely piloted aircraft (RPAs).

Rule 102.101 Applicability – New Rule: New rule for applicability of Subpart C remote pilot qualification for the operation of RPAs.

Rule 102.103 Requirement for remote pilot licence – New Rule: New rule - previously rule 101.221.

Subpart D Unmanned aircraft operator authorisation or certification – New Subpart: New Subpart D for unmanned aircraft authorisation or certification incorporating Part 102 certification requirements.

Rule 102.151 Purpose – New Rule: New rule for applicability of Subpart D to a person who operates an unmanned aircraft for the purpose of hire or remuneration, or for other than recreational purposes. New rule - previously rule 102.1 amended.

Rule 102.153 Applicability – New Rule: New rule - previously rule 102.3 amended. New requirement for a valid authorisation or certificate issued by the Director to operate unmanned aircraft 10kg or more.

Rule 102.155 Requirement for authorisation or certificate – New Rule: New rule - previously rule 102.7.

Rule 102.157 Special category operations – New Rule: New rule for special category operations in accordance with new proposed Appendix B.

Rule 102.159 Authorisation or certificate to operate unmanned aircraft – New Rule: New rule - previously rule 102.9.

Rule 102.161 Unmanned aircraft operator exposition – New Rule: New rule - previously rule 102.11.

Rule 102.161(b) clarified - Added phrases “Subject to paragraph (b)” and “required by paragraph (a)”.

Rule 102.161(b)(11) new requirement – Added “including dangerous goods”.

Rule 102.161(b)(12) new requirements – Added “design, configuration and” and “acceptable to the Director.”.

Rule 102.163 Grant of authorisation or certificate – New Rule: New rule - previously rule 102.13.

Rule 102.165 Operations specification – New Rule: New rule - previously rule 102.15.

Rule 102.167 Privileges of authorisation or certificate holder – New Rule: New rule - previously rule 102.17.

Rule 102.169 Duration of certificate – New Rule: New rule - previously rule 102.19.

Rule 102.171 Conditions of operation of unmanned – New Rule: New rule - previously rule 102.21.

Rule 102.173 Changes to exposition – New Rule: New rule - previously rule 102.23.

Rule 102.175 Renewal of certificate – New Rule: New rule - previously rule 102.25.

Rule 102.177 Retention of records – New Rule: New rule - previously rule 102.27.

Rule 102.179 Safety management systems – New Rule: New rule - previously rule 102.29.

Subpart E Requirements for Manufacturers – New Subpart: New Subpart E for unmanned aircraft manufacturers who intend to declare to the Director demonstrated capabilities of their unmanned aircraft designed for a specific operation, and compliance with certain technical requirements and standards.

Rule 102.201 Applicability – New Rule: New rule for applicability of Subpart E to unmanned aircraft manufacturers who intend to declare to the Director demonstrated capabilities of their unmanned aircraft designed for a specific operation, and compliance with certain technical requirements and standards acceptable to the Director.

Rule 102.203 Reserved – New Rule number: New rule number reserved.

Rule 102.205 Means of compliance – New Rule proposed: New rule. Paragraph (a) provides the requirements for data and justification for the operator to meet its safety case. Paragraph (b) details the information required for the Director's acceptance.

Rule 102.207 Manufacturer declaration – New Rule proposed: New rule. Paragraph (a) details the declaration the manufacturer must provide the Director for each model of unmanned aircraft that it intends to operate. Paragraph (b) details the grounds for an invalid manufacturer declaration.

Rule 102.209 Technical requirements notice – New Rule proposed: New rule for a manufacturer to notify the Director as soon as possible of any issue with the unmanned aircraft that make it no longer meet the technical requirements for compliance.

Rule 102.211 Documentation – New Rule proposed: New rule detailing the requirements for information a manufacturer must make available to each owner of a model of unmanned aircraft.

Rule 102.213 Record retention for manufacturer – New Rule proposed: New rule. Paragraph (a) details the requirements for a manufacturer to keep and make available to the Director records and reports. Paragraph (b) details the period records must be kept.

Appendix A Requirement for personnel and safety management – Amended:

Paragraph (a) – Amended: Paragraph (a) rule reference amended.

Paragraph (b) – Amended: Paragraph (b) rule reference amended.

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## Subpart A — General

### 102.1 Purpose

Subject to rule 102.151(a), this Part prescribes rules governing the certification and operation of remotely piloted aircraft in Papua New Guinea.

### 102.3 Definitions

In this Part:

**Aerodrome** means an aerodrome that is promulgated in the current PNG AIP:

**Aerodrome reference point** means the designated geographical location of the aerodrome:

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

**Exposition** means, unless the context otherwise requires, the exposition required by rule 102.161.

**Shielded operation** means the same as in Part 1

### 102.5 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.

### 102.7 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 the form prescribed in Part 12, or by a means acceptable to the Director.

**102.9 Use of aeronautical radio**

- (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 Subpart D, 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 Subpart D, 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 —
- (1) satisfies the requirements of paragraphs (a) and (b); and
  - (2) complies with the conditions of the authorisation.

**102.11 Reserved****102.13 Reserved****102.15 Reserved****102.17 Reserved****102.19 Reserved****102.21 Reserved****102.23 Reserved****102.25 Reserved****102.27 Reserved****102.29 Reserved**

## Subpart B — Operation of remotely piloted aircraft

### 102.51 Applicability

This Subpart applies to the registration and operation of remotely piloted aircraft.

### 102.53 Registration

For a person who will operate a remotely piloted aircraft, the aircraft registration requirements in rule 47.51 apply.

### 102.55 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 102.85; and
  - (2) at or below 120m/400ft above ground level; and
  - (3) during 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;unless it is a shielded operation;
  - (i) in a control zone designated under Part 71; or
  - (ii) within 3 nm of the aerodrome reference point of a controlled aerodrome; and
- (c) the remotely piloted aircraft is not operated in or over an area where a fire service, 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.

### 102.57 Approval of areas for operation

- (a) A person may apply to the Director for the approval of an area as an area for the operation of:
  - (1) a remotely piloted aircraft generally, or for a particular category of a remotely piloted 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.

- (b) Details of an approval granted by the Director under paragraph (a) will be published including any conditions, in accordance with the Part 175 requirements for the publication of aeronautical information.
- (c) 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
    - (ii) currently holds the office, if the person who applied for the approval as an officer of an organisation concerned with the unmanned aircraft, no longer holds that office.

### **102.59 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 of remotely piloted aircraft; or
  - (2) qualifications and experience in the operation of remotely piloted aircraft; or
  - (3) 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 remotely piloted aircraft greater than 10kg;
    - (i) authorising the construction and modification; or
    - (ii) inspecting and approving the construction or modification; or
    - (iii) authorising the operation; or
- (c) conducting aviation training and assessments under the provisions of an unmanned aircraft training organisation certificate issued under Part 141.

### **102.61 Airspace knowledge**

- (a) Subject to paragraph (b), a person who operates a remotely piloted aircraft must:
  - (1) ensure before each flight, that the person is 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 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;
- (b) A person who intends to operate a remotely piloted 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.

### **102.63 Controlled airspace**

A person must not operate a remotely piloted aircraft in controlled airspace without prior authorisation from the ATC unit responsible for that airspace, unless the operation is a shielded operation.

### **102.65 Low flying zones**

A person must not operate a remotely piloted aircraft within a low flying zone designated under Part 71.

### **102.67 Restricted, military operating, and danger areas**

A person must not operate a remotely piloted aircraft within an area designated under Part 71 as a:

- (a) restricted area; or
- (b) military operating area,

unless the person has the approval to do so from the administering authority responsible for the restricted area or military operating area.

### **102.69 Hazard and risk minimisation**

A person operating a remotely piloted aircraft must take all practicable steps to minimise hazards to persons, property and other aircraft.

### **102.71 Dropping of articles**

A person operating a remotely piloted aircraft must not allow any object to be dropped in flight if such action creates a hazard to other persons or property,

### **102.73 Above 400ft AGL**

A person must not operate a remotely piloted aircraft at a height greater than 400ft AGL unless the operation is conducted —

- (a) by an approved person or organisation; or
- (b) under the provisions of an authorisation or certificate issued under Subpart D.

**102.75 Operation on or within 3 nm of an aerodrome**

- (a) A person must not operate a remotely piloted aircraft on or within 3 nm of the aerodrome reference point of an uncontrolled aerodrome unless—
  - (1) the operation is undertaken in accordance with an agreement with the aerodrome operator; and
  - (2) each pilot has an observer in attendance while the aircraft is in flight; and
  - (3) the aircraft is not operated at a height of more than 400 feet AGL unless the operator has been approved by the Director to operate the aircraft above 400 feet AGL; and
- (b) A person must not operate a remotely piloted aircraft on or within 3 nm of the aerodrome reference point of a controlled aerodrome, unless it is operated in accordance with:
  - (1) an authorisation from the relevant ATC unit; and
  - (2) rule 102.9 if the operation is in controlled airspace; and
- (c) A person must not operate a remotely piloted aircraft on or within 3 nm of the aerodrome reference point of any aerodrome, unless the person is:
  - (1) the holder of, or is under the direct supervision of the holder of, a pilot qualification issued by an approved person or organisation; or
  - (2) under the direct supervision of a person appointed to give instruction in the operation of remotely piloted aircraft by an approved person organisation;
  - (3) the holder of a pilot licence or certificate issued under Part 61.
- (d) A person must not operate a remotely piloted aircraft on or over any active—
  - (1) aircraft movement area of an aerodrome; or
  - (2) runway strip area.
- (e) 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.

**102.77 Operation more than 3 nm of an aerodrome**

A person operating a remotely piloted aircraft more than 3 nm of from an aerodrome reference point must not operate the aircraft at a height greater than 400 feet AGL, unless —

- (a) the operation is conducted in accordance with rule 102.73; 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.

**101.79 Airspace designation**

- (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.

**102.81 Operation over property**

- (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
  - (2) maintain observation for other aircraft in the surrounding airspace in which the remotely piloted aircraft is operating; and
  - (3) not operate the aircraft at any height greater than 400 feet AGL except in accordance with rule 102.73.
- (b) Nothing in paragraph (a) requires a person to obtain consent from any person if that person is operating under the authority of an approved organisation or under the provisions of an authorisation or certificate issued under Subpart D.

**102.83 Operation over and near people**

Except for remotely piloted aircraft operations conducted under the authority of an approved organisation as prescribed in rule 102.81(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 takeoff.

**102.85 Visual line of sight operation**

- (a) This rule applies to—
  - (1) remotely piloted aircraft;
  - (2) 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.

**102.87 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 Subpart D that permits such operations.

**102.89 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 the holder of an authorisation or a certificate issued under Subpart D that permits such operations.



### **102.91 Right of way**

- (a) A person who is operating a remotely piloted aircraft must ensure the aircraft that the person is operating gives way to, and remains clear of, all manned aircraft on the ground and in flight.
- (b) A person who is operating a free flight model aircraft must before launching the aircraft ensure that during the operation, the aircraft will remain clear of all manned aircraft on the ground and in flight.

### **102.93 Aircraft mass limits**

A person must not operate a remotely piloted aircraft with a gross mass of—

- (a) more than 25 kg except under the:
  - (1) authority of an approved person or organisation defined in rule 102.59; and
  - (2) provisions of an authorisation or certificate issued under Subpart D;
- (b) 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 102.59; and
  - (2) operated under the authority of an approved person or organisation defined in rule 102.59.

### **102.95 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 102.55.

### **102.97 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.

### **102.99 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.

## Subpart C — Remote pilot licence requirements

### 102.101 Applicability

Subject to Part 61 Subpart J, this Subpart applies to remote pilot qualification for the operation of remotely piloted aircraft.

### 102.103 Requirement for remote pilot licence

Subject to rules 61.507 and 61.509

- (a) no person may operate a remotely piloted aircraft without a pilot qualification unless the operation is conducted —
  - (1) as an open category operation in accordance with the requirements of rule 102.95: and
  - (2) more than 3 nm from an aerodrome reference point of the nearest aerodrome: and
- (b) no person may operate a remotely piloted aircraft within 3 nm of an aerodrome reference point unless that person has a —
  - (1) pilot qualification; or
  - (2) qualification of knowledge of the use of aeronautical charts and airspace.

## Subpart D — Unmanned aircraft operator authorisation or certification

### 102.151 Purpose

This Subpart prescribes the rules —

- (a) governing the certification of a person who operates an unmanned aircraft in Papua New Guinea for the purpose of hire or remuneration, or for other than recreational purposes;
- (b) that enable the Director to determine whether to grant an unmanned aircraft operator authorisation or certificate to a person after giving consideration to whether that person—
  - (1) has conducted an adequate assessment of the risk to safety of conducting the proposed unmanned aircraft operation; and
  - (2) has developed procedures to adequately manage the risks and to ensure that the operation is conducted safely.

### **102.153 Applicability**

This Subpart applies to a person who operates an unmanned aircraft with a maximum certified all up mass of 250 gm or more—

- (a) for the purpose of hire or remuneration; or
- (b) for other than recreational purposes; or
- (c) in accordance with rule 102.95 as an open category operation and who wishes to apply for an unmanned aircraft operator authorisation or certificate; or
- (d) other than in accordance with the open category requirements of rule 102.95:

except that no person may operate an unmanned aircraft with a maximum certified all up mass of 10 kg or more except under the authority of, and in accordance with the terms of a valid authorisation or certificate to operate an unmanned aircraft issued by the Director under this Subpart.

### **102.155 Requirement for authorisation or certificate**

Subject to rule 102.153, a person must not operate an unmanned aircraft other than as an open category operation in accordance with rule 102.95, except under the authority of, and in accordance with the terms of a valid authorisation or certificate to operate an unmanned aircraft issued by the Director under this Subpart.

### **102.157 Specific category operations**

A person must not operate an unmanned aircraft as a specific category operation in accordance with Appendix B except under the authority of, and in accordance with the terms of a valid authorisation or certificate to operate an unmanned aircraft issued by the Director under this Subpart.

### **102.159 Application for authorisation or certificate**

- (a) Before operating an unmanned aircraft to which this Subpart applies, a person must apply for an unmanned aircraft operator authorisation or certificate.
- (b) A person who operates an unmanned aircraft as an open category operation in accordance with rule 102.95 may apply for an unmanned aircraft operator authorisation or certificate.
- (c) A person in paragraph (a) or paragraph (b) must apply by—
  - (1) submitting an application to the Director; and
  - (2) paying the appropriate fee specified in regulations.
- (d) An application made under this rule must include—
  - (1) the name and address for service in Papua New Guinea of the applicant; and
  - (2) the details required by rule 102.165 for the operations specification; and
  - (3) the applicant's exposition required by rule 102.161; and
  - (4) any other information relating to the application as may be required by the Director.

**102.161 Unmanned aircraft operator exposition**

- (a) An applicant for an unmanned aircraft operator authorisation or certificate must provide the Director with an exposition that is acceptable to the Director.
- (b) Subject to paragraph (d), the exposition required by paragraph (a) must address the following matters, having regard to the nature, degree and risk of the intended operation—
  - (1) the identification of a person who will have primary responsibility for the operation; and
  - (2) the identification of a person who is;
    - (i) to have or is likely to have control over the exercise of the privileges under the certificate: and
    - (ii) the remote chief pilot as prescribed in Appendix A:
  - (3) details of the physical locations to be used in the operation; and
  - (4) a safety management system in accordance with rule 102.179; and
  - (5) procedures for reporting information to the Director as required by Part 12; and
  - (6) operating requirements for personnel licensing, qualifications, training and competency including pilot and support crew qualifications, training or medical requirements as required by Part 61; and
  - (7) details of the number and specifications of the aircraft to be used, including any identification system used on the aircraft, and colour schemes, unique identification numbers, and markings as required by Part 47; and
  - (8) details of the control system to be used to pilot the aircraft; and
  - (9) procedures for maintenance of aircraft and measures to ensure continued airworthiness; and
  - (10) in-flight procedures including minimum distances from persons or property; and
  - (11) procedures for handling cargo, including dangerous goods, or dropping items, if such operations are intended; and
  - (12) the initial design, configuration and airworthiness standards acceptable to the Director, that must be met:
  - (13) procedures for controlling, amending and distributing the exposition; and
  - (14) any other approvals that are required to conduct the proposed operation
- (c) An exposition may adopt, by reference, a requirement in a Civil Aviation Rule for the purpose of mitigating or managing a risk identified in the safety management system required by rule 102.161(b)(4).
- (d) The Director may require only those matters in paragraph (b) that the Director considers appropriate to the nature, degree and risk of the applicant's intended operation, to be contained in the exposition.
- (e) The exposition must remain acceptable to the Director.

**102.163 Grant of authorisation or certificate**

- (a) The Director may, in accordance with section 49 of the Act, grant an authorisation or a certificate to a person who has applied under rule 102.159
- (b) When granting an authorisation or a certificate under paragraph (a), the Director may—
  - (1) impose requirements for unmanned aircraft systems and may specify procedures to be followed by the operator of any unmanned aircraft that are operated under the authority of the authorisation or certificate; and
  - (2) in accordance with section 49(1) of the Act, specify any additional conditions that the Director considers necessary in the interests of aviation safety and security; and
  - (3) after considering the type of aircraft to be used, specify the remotely piloted aircraft unique identifier in accordance with rule 47.105 that any aircraft to be operated under the authorisation or certificate must display.

**102.165 Operations specification**

- (a) If the Director grants an unmanned aircraft operator authorisation or certificate under rule 102.163, the authorisation or certificate must be issued with an operations specification containing the details described in paragraph (b).
- (b) The operations specification must include:
  - (1) details of the physical location of the certificate holder's principal base of operations; and
  - (2) the authorisation or certificate holder's address for service in Papua New Guinea; and
  - (3) a list of any business names under which the authorisation or certificate holder is approved to operate; and
  - (4) the privileges and operations that the operator is permitted to perform, including:
    - (i) the number, type and description, registration and, if applicable, the serial number of every aircraft that is authorised for use; and
    - (ii) identification of the geographical areas of operations approved by the Director; and
    - (iii) any exemption granted from any requirement of this or any other Part; and
  - (5) any additional condition that the Director determines is necessary in the interests of aviation safety and security.

**102.167 Privileges of authorisation or certificate holder**

- (a) The holder of an unmanned aircraft operator authorisation or certificate is authorised to perform the operations specified in the accompanying operations specification.
- (b) Unless the exposition required by rule 102.161 specifies otherwise, the holder of an unmanned aircraft operator certificate is not required to comply with Civil Aviation Rules Parts 20, 21, 26, 39, 43, 63, 65, 66, 67, 91, 92, 93, 95, 119, 129, and 137.

**102.169 Duration of certificate**

- (a) When granting an authorisation or renewing a certificate under this Subpart the Director will specify a date on which the authorisation or certificate will expire.
- (b) The date specified under paragraph (a) must not be later than 5 years after the date on which the certificate was granted.

**102.171 Conditions of operation of unmanned aircraft**

- (a) A holder of an unmanned aircraft operator authorisation or certificate must comply with—
  - (1) Subpart B, to the extent the requirements of Subpart B are not inconsistent with the operations specified in the operations specifications issued under rule 102.165;
  - (2) the conditions imposed by the Director on the unmanned aircraft operations specification issued under rule 102.165; and
  - (3) the exposition required by rule 102.161.
- (b) The authorisation or certificate holder is responsible for and must ensure that the following persons are notified of, and must comply with, the requirements of paragraph (a)—
  - (1) persons who are employed by the authorisation or certificate holder and who assist with the holder's operation; and
  - (2) other operators or other personnel involved in an operation conducted under the authority of the holder's authorisation or certificate.

**102.173 Changes to exposition**

- (a) Each holder of an unmanned aircraft operator authorisation or certificate must—
  - (1) ensure that the exposition required by rule 102.161 is amended on a regular basis—
    - (i) so that it remains a current description of the authorisation or certificate holder's operation; and
    - (ii) to ensure continued compliance with the Civil Aviation Rules that have been adopted under rule 102.161(c); and
  - (2) provide the Director with a copy of each amendment to the exposition as soon as practicable after the amendment is incorporated into the exposition; and
  - (3) make such amendments to the exposition as the Director considers necessary in the interests of aviation safety.
- (b) If a holder of an unmanned aircraft operator authorisation or certificate proposes to change any of the following, prior acceptance by the Director is required:
  - (1) the name of any person who is to have or is likely to have, control over the exercise of the privileges under the authorisation or certificate;
  - (2) the geographic locations from which the authorisation or certificate holder conducts unmanned aircraft operations.

**102.175 Renewal of certificate**

A holder of a current unmanned aircraft operator certificate who wishes to continue to exercise the privileges of the certificate beyond its expiry date must apply for the renewal of the certificate in accordance with section 49 of the Act.

**102.177 Retention of records**

- (a) A holder of an unmanned aircraft operator authorisation or certificate must maintain records containing:
  - (1) the names of the remote pilots and other crew members involved in each flight, in respect of the system, the time of each flight or series of flights; and
  - (2) maintenance action, modification or repair performed on the system, including:
    - (i) name of person performing the work;
    - (ii) the dates work was performed;
    - (iii) in the case of modification, the manufacturer, model and description of parts or equipment modifying the system; and
    - (iv) if applicable, any instruction provided to complete the work.
- (b) The owner of an unmanned aircraft who transfers ownership to another person must, at the time of transfer, deliver to that person all records referred to in paragraph (a)(2).
- (c) The owner of an unmanned aircraft must ensure that the records referred to in paragraphs (a)(1) and (a)(2) are:
  - (1) made available to the Director on request; and
  - (2) retained for a period of:
    - (i) for the records referred to in paragraph (a)(1), 12 months after the day they are recorded; and
    - (ii) for records referred to in paragraph (a)(2), 24 months after the day they are recorded.

**102.179 Safety management system**

The holder of an unmanned aircraft operator authorisation or certificate must establish and maintain a system for safety management that—

- (a) includes the following:
  - (1) a safety policy on which the system for safety management is based;
  - (2) a process for risk management that identifies hazards to aviation safety, and evaluates and manages the associated risks;
  - (3) safety assurance measures that ensure:
    - (i) hazards are documented in a hazard register as prescribed in Appendix A; and
    - (ii) incidents and accidents are internally reported and analysed, and action is taken to prevent recurrence; and
    - (iii) goals for the improvement of aviation safety are set and the attainment of these goals are measured; and
    - (iv) there is a safety management program that includes the conduct of internal audits and regular reviews of the system for safety management; and
  - (4) training that ensures personnel are competent to fulfil their safety responsibilities; and
- (b) documents all processes required to establish and maintain the system for safety management; and
- (c) is commensurate with the size of the organization, the nature and complexity of the activities undertaken by the operator, and the hazards and associated risks inherent in the activities undertaken by the operator.

## Subpart E — Requirements for Manufacturers

### 102.201 Applicability

This Subpart applies to an unmanned aircraft manufacturer who intends to declare to the Director:

- (a) the demonstrated capabilities of their unmanned aircraft that is designated for a specific operation; and
- (b) compliance with the requirements of tests, analyses, inspections and industry standards determined as acceptable to the Director.

### 102.203 Reserved

### 102.205 Means of compliance

- (a) To meet the requirements of rule 102.207(a)(1)(ii) for operations for a specific unmanned aircraft, the means of compliance shall consist of data about the type of means of compliance and the results or justification used to demonstrate the unmanned aircraft meets its safety case including tests, analyses, and industry consensus standards for the specified operation that the Director has determined is acceptable.
- (b) An applicant requesting the Director's acceptance of a means of compliance shall submit the following information to the Director in a manner specified by the Director:
  - (1) detailed description of the means of compliance; and
  - (2) justification, including any substantiating material, showing that the means of compliance establishes achievement of or equivalency to the safety level identified.

### 102.207 Manufacturer declaration

- (a) For each model of unmanned aircraft that is intended to conduct any operation, the manufacturer must provide the the Director with a declaration in accordance with this Subpart.
- (b) The manufacturer's declaration must specify—
  - (1) the manufacturer of the unmanned aircraft, the model of the system, the maximum take-off weight of the unmanned aircraft, the operations that the unmanned aircraft is intended to undertake and the category of unmanned aircraft, such as fixed-wing aircraft, rotary-wing aircraft, or hybrid-wing aircraft; and
  - (2) that the system meets the means of compliance applicable to the operations for which the declaration was made.
- (c) The manufacturer's declaration is invalid if:
  - (1) the Director has determined that the model of the unmanned aircraft does not meet the requirements set out in the means of compliance, or
  - (2) the manufacturer has notified the Director of an issue related to the design of the model under rule 102.209.

### 102.209 Technical requirements notice

A manufacturer that has made a declaration to the Director under rule 102.207 must notify the Director of any issue related to the design of the model of the unmanned aircraft that results in the system no longer meeting the technical requirements set out in the means of compliance referred in rule 102.205(b)(2), as soon as possible after the issue is identified.



**102.211 Documentation**

A manufacturer that has made a declaration to the Director in respect of a model of a unmanned aircraft under rule 102.207 must make available to each owner of that model of unmanned aircraft:

- (a) a maintenance program that includes:
  - (1) instructions related to the servicing and maintenance of the system; and
  - (2) an inspection program to maintain system readiness;
- (b) any mandatory actions the manufacturer issues in respect of the system;
- (c) a unmanned aircraft operating manual that includes:
  - (1) a description of the system;
  - (2) the ranges of weights and centers of gravity within which the system may be safely operated under normal and emergency conditions and, if a weight and center of gravity combination is considered safe only within certain loading limits, those load limits and the corresponding weight and center of gravity combinations;
  - (3) with respect to each flight phase and mode of operation, the minimum and maximum altitudes and velocities within which the aircraft can be operated safely under normal and emergency conditions;
  - (4) a description of the effects of foreseeable weather conditions or other environmental conditions on the performance of both the system and the unmanned aircraft;
  - (5) the characteristics of the system that could result in severe injury to crew members during normal operations;
  - (6) the design features of the system and their associated operations that are intended to protect against injury to persons not involved in the operations;
  - (7) the warning information provided to the remote pilot in the event of a degradation in system performance that results in an unsafe system operating condition;
  - (8) procedures for operating the system in normal and emergency conditions; and
  - (9) assembly and adjustment instructions for the system.

**102.213 Record retention for manufacturer**

- (a) A manufacturer that has made a declaration to the Director in respect of a model of a unmanned aircraft under rule 102.207 shall keep, and make available to the Director on request:
  - (1) a current record of all mandatory actions in respect of the unmanned aircraft; and
  - (2) a current record of the results of and the reports related to the verifications that the manufacturer has undertaken to ensure that the model of the unmanned aircraft meets the technical requirements applicable to the operations for which the declaration was made.
- (b) The manufacturer shall keep the records referred to in paragraph (a)(1) for the greater of:
  - (1) two years following the date that manufacturing of that model of unmanned aircraft permanently ceases, and
  - (2) the lifetime of the unmanned aircraft that is an element of the model of unmanned aircraft referred to in paragraph (a).

## Appendix A — Requirements for personnel and safety management

This Appendix prescribes—

- (a) in paragraph A.1, the remote chief pilot responsibilities and functions under rule 102.161(b)(2)(ii);
- (b) in paragraph A.2, the hazard register requirements under rule 102.179(a)(3)(i)

### A.1. Remote chief pilot

The remote chief pilot is responsible for the following functions:

- (a) ensuring unmanned aircraft operations are conducted in accordance with the civil aviation regulations; and
- (b) maintaining records of the qualifications held by each person operating an unmanned aircraft for the certificate holder; and
- (c) monitoring the operational standards and proficiency of each person operating an unmanned aircraft for the certificate holder; and
- (d) maintaining a complete and up-to-date reference library of operational documents required under the rules for the types of operations conducted by the certificate holder.

### A.2. Hazard register

For a proposed operation or series of operations, the hazard register must:

- (a) identify known and likely hazards to people, property and other aircraft; and
- (b) include an assessment of the associated risks for each of the hazards identified in paragraph (a); and
- (c) contain descriptions of the measures that can be implemented to mitigate or manage the risk;

## Appendix B — Requirements for Specific Category Operations

This Appendix prescribes the specific category operations under rule 102.157 for—

- (a) in paragraph B.1, the remote pilot requirements.
- (b) in paragraph B.2, the eligibility requirements.

### B.1. Remote pilot requirements

To conduct operations in the specific category, a remote pilot must hold a remote pilot licence issued in accordance with Part 61, Subpart J.

### B.2. Eligibility

To qualify for the conduct of operation in the specific category, the remote pilot must ensure the unmanned aircraft—

- (a) is designed, produced, or modified such that it does not contain any safety defects identified by the Director; and
- (b) displays a label in English, legible and permanently affixed to the aircraft, indicating eligibility to conduct operations in the specific category; and
- (c) has available current remote pilot instructions that apply to the operation of that aircraft; and

- (d) remote pilot instructions required under paragraph (c):
  - (1) is made available by the person who carried out the activities described in paragraph (a) on the sale or transfer of the unmanned aircraft to, or use of that aircraft by, a person other than the person described in paragraph (a); and
  - (2) contains at a minimum, the following information:
    - (i) a system description that includes the required aircraft components, any system limitations, and the declared category or categories of operations; and
    - (ii) modifications that will not change the ability of the aircraft to meet the requirements of the category or categories of operations the aircraft is eligible to conduct; and
    - (iii) instructions that explain how to verify and change the mode or configuration of the aircraft, if they are variable.
- (e) operates only after the person who carried out the activities described in paragraph (a) has:
  - (1) received notification of acceptance by the Director of the declaration of compliance for that aircraft in accordance with rule 102.205 or
  - (2) an approval from an approved organisation referred to in rule 102.59
- (f) has a current aircraft registration in accordance with rule 102.53.