

CAR-102 Civil Aviation Regulation Remote Piloted Aircraft (Drones)

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Approved by: HE Eng. Naif Ali Hamed Al Abri (President of the Civil Aviation Authority)

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Corrigendum of Amendments

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01	01	This is a new CAR prepared under the authority of the Civil Aviation Law Royal Decree (76/2019) or any amendment thereafter.
02	02	 This revision includes the following: 1) new general requirements in CAR-102.025 with additional GM; 2) additional information and GM to CAR-102.115; 3) C2 Link requirements in CAR-102.135; and 4) the Manufacturing Requirements for the design and construction of UAS/RPA.

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Glossary of Terms or Abbreviations

The following terms or acronyms may be used in any manual or document published by the CAA. Reproduction in part or whole is allowed without prior approval. The Document Control Office reserves the rights to include such a listing in any CAA manual or document prior to publishing.

1010	
ACAS	Airborne Collision Avoidance System
ACC	Area Control Centre
ACCID	Accident
ADREP	Accident/Incident Reporting System
AFIS	Aerodrome Flight Information Service
AIC	Aeronautical Information Circular
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Service
A/C	Aircraft
AGL	Above Ground Level
AMSL	Above Mean Sea Level
AOC	Air Operator Certificate
APP	Approach Control Office
ARO	Air Traffic Services Reporting Office
ATC	Air Traffic Control
ATS	Air Traffic Service
CAA	Civil Aviation Authority
CAR	Civil Aviation Regulation
СОМ	Communications/Equipment
FIS	Flight Information Service
GM	Guidance Material
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
lic	Investigator in Charge
INCID	Incident
NOTAM	Notice to Airmen
NPA	Notice of Proposed Amendment
OEM	Original Equipment Manufacturer
OTSB	Oman Transport Safety Bureau
RCC	Rescue Co-ordination Centre of the Sultanate
ROC	
RPL	RPA Operator Certificate Remote Pilot License
RNAV	
	Area Navigation Remote Pilot Aircraft
RPA	
RPAS	Remote Pilot Aircraft System
R/T	Radio transmission Search and Rescue
SAR	
SINCID	Serious Incident
SSR	Secondary Surveillance Radar
SIGMET	Significant Meteorological Report
TCAS	Traffic Alert and Collision Avoidance System
TL	Technical Lead
UTC	Universal Time Coordinated
VHF	Very High Frequency
VMC	Visual Meteorological Conditions
WX	Weather

FOREWORD

- (a) The following Civil Aviation Requirements for the operation of Remote Operated Unmanned Aircraft System (Drone) have been issued by the Civil Aviation Authority of Oman (hereinafter called the Authority or the CAA) under the provisions of the Civil Aviation Law of the Sultanate of Oman.
- (b) Enforcement of Civil Aviation Regulations can and will be enforced by the CAA when noncompliance of operations is observed or reported. In this regard, the enforcement of the regulations pertaining to the operation of remotely piloted aircraft will be applied in the following manner:
 - (1) The maximum fine that a court could impose on an individual is a minimum of 5,000 and up to 10,000. Omani Rial and up to one (1) year imprisonment.
 - (2) However, operators and pilots should be aware that the Civil Aviation Law 76/2019 also contain criminal offences for interference with the safe conduct of air transport or reckless flying, which may result in up to fifteen (15) years imprisonment and a fine from 30,000 to 60,000 Omani Rial.
- (c) CAR-102 prescribes the requirements for:
 - (1) The general operating rules applicable to RPA vehicles within Oman;
 - (2) The requirements for the operation of RPA within the Sultanate of Oman;
 - (3) The applicable punitive actions that can and will be enforced by the Authority against recognised actions of non-compliance.
- (d) Amendments to the text in CAR-102 in revised editions are issued as a complete amendment of pages contained within.
- (e) The editing practices used in this document are as follows:
 - (1) 'Shall' is used to indicate a mandatory requirement and may appear in CARs.
 - (2) 'Should' is used to indicate a recommendation
 - (3) 'May' is used to indicate discretion by the Authority, or the industry as appropriate.
 - (4) 'Will' indicates a mandatory requirement and is used to advise of action incumbent on the Authority.

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

SUBPART A – GENERAL

CAR 102.001 Applicability

This Subpart prescribes rules governing the operation of Unmanned Aircraft System (Drone) utilized for civilian operations conducted within the Sultanate of Oman, which affects or may affect the safety of air navigation.

CAR 102.005 Definitions

Aeronautical radio operator certification: means the person has completed the required training and holds the certification to operate a radio using aeronautical frequencies.

Aircraft: Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

Aircraft — category: Classification of aircraft according to specified basic characteristics, e.g. aeroplane, helicopter, glider, free balloon.

Air traffic control service: A service provided for the purpose of:

- (a) preventing collisions:
 - (1) between aircraft, and
 - (2) on the manoeuvring area between aircraft and obstructions; and
- (b) expediting and maintaining an orderly flow of air traffic.

Air traffic management (ATM): The dynamic, integrated management of air traffic and airspace (including air traffic services, airspace management and air traffic flow management) – safely, economically and efficiently – through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions.

Air traffic management (ATM) system: A system that provides ATM through the collaborative integration of humans, information, technology, facilities and services, supported by air and ground-and/or space-based communications, navigation and surveillance.

Air traffic service: A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

C2 Link: The data link between the remotely piloted aircraft and the remote pilot station for the purposes of managing the flight.

Beyond Visual Line of Sight Operations (BVLOS): The operation of an Unmanned Aerial System, during which, the system operator maintains electronic communications with the aircraft to manage its flight and meet separation and collision avoidance requirements. In this mode the operator is not required to maintain visual contact with the aircraft.

Commercial operation: An aircraft operation conducted for business purposes (mapping, security surveillance, survey, aerial application, etc.) other than commercial air transport, for remuneration or hire.

Congested Area: A congested area as being 'any area of a city, town or settlement which is substantially used for residential, industrial, commercial or recreational purposes.

Controlled Airspace: An airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.

Control Station (CS): An interface used by the remote pilot or the person manipulating the controls to control the flight path of the Drone.

Control Zone: A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

Detect and avoid: The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action.

Drone: means a Remote Pilot Aircraft (RPA) operated by a remote pilot.

Flight information region (FIR). An airspace of defined dimensions within which flight information service and alerting services are provided by the controlling state (Sultanate of Oman).

Geofence: A virtual three-dimensional perimeter around a geographic point, either fixed or moving, that can be predefined or dynamically generated and that enables software to trigger a response when a device approaches the perimeter (also referred to as geo-awareness or geo-caging).

Integrated Airspace: Airspace in which Drone and manned aircraft operate with no segregation, with the same minimum separation standards applied and level of safety as provided between manned aircraft.

Leisure: The act of relaxation and/or amusing oneself by engaging in a sport or pastime.

Operator: A person, organisation or enterprise engaged in or offering to engage in an aircraft operation.

Note: In the context of unmanned aircraft, an aircraft operation includes the unmanned aircraft system.

Pilot-in-commend (PIC): means a person operating as the pilot in command or remote pilot operating an RPA.

Populous area: in relation to the operation of an unmanned aircraft the area has a sufficient density of population for some aspect of the operation, or some event that might happen during the operation (in particular, a fault in, or failure of, the aircraft) to pose an unreasonable risk to the life, safety or property of somebody who is in the area but is not connected with the operation.

Private operation: An aircraft operation which is performed for Sport or Leisure purposes not as a commercial venture.

Radio transmission (R/T): means the use of an approved aeronautical radio frequency to communicate with an ATC controller to obtain permission to operate the RPA within controlled airspace.

Remote pilot: A person charged by the operator with duties essential to the operation of a remotely piloted aircraft and who manipulates the flight controls, as appropriate, during flight time.

Remote pilot-in-command: The remote pilot designated by the operator as being in command and charged with the safe conduct of the flight.

Remote Pilot Aircraft (RPA): Unmanned aircraft system, including model aircraft controlled remotely by a remote pilot using a radio control device. It does not include rockets, fireworks or balloons.

Remotely piloted aircraft system (RPAS): A remotely piloted aircraft, its associated remote pilot station(s), the required C2 Link and any other components as specified in the type design.

Restricted area: An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

Secondary surveillance radar (SSR): A surveillance radar system which uses transmitters/receivers (interrogators) and transponders.

Segregated airspace: Airspace of specified dimensions allocated for exclusive use to a specific user(s).

Sense and avoid: The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action to comply with the applicable rules of flight.

Situational awareness: The ability to keep track of the prioritized significant events and conditions in the environments of the subject.

specified frequency: for particular airspace means a frequency specified from time to time in AIP or by ATC as a frequency for use in the airspace.

specified information: for particular airspace means information specified from time to time in AIP or by ATC as information that must be broadcast in the airspace.

specified interval: for particular airspace 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.

Unmanned aircraft system: otherwise referred to as UAS or UAV; this has the same meaning as remote piloted aircraft (RPA).

Uncontrolled Airspace: Class G airspace in which aircraft are not subject to an Air Traffic Control service.

Visual line-of-sight operation (VLOS): A Drone operation in which the remote crew maintains direct visual contact with the aircraft to manage its flight and meet separation and collision avoidance responsibilities.

Visual Meteorology Conditions (VMC): Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling*, equal to or better than specified minima.

- (a) when the ground visibility is greater than 5 km; and
- (b) when the ceiling is greater than 450 m (1 500 ft).

Note — The specified minima are contained in Chapter 4 of ICAO Annex 2.

CAR 102.010 Classification of Drones

The Normal Classification of Drones are as in the table below;

Category of RPA	Mass [kg]	
Micro RPA	Less than 250gm	
Very Small RPA	251gm up to 2kg	
Small RPA	2.01kg up to 25 kg	
Medium RPA	25.01 kg up to 150kg	
Large RPA	150.01 kg and above	

CAR 102.015 Falsification, Reproduction or Alteration

- (1) The CAA relies on information provided by owners and remote pilots of drones when it authorizes such operations or when required to make a compliance determination. Accordingly, the CAA may take appropriate action against a drone owner, operator, remote PIC, or anyone else who fraudulently or knowingly provides false records or reports, or otherwise reproduces or alters any records, reports, or other information for fraudulent purposes.
- (2) In addition, modifications to manufacturers specifications are not permitted; such action could include the suspension or revocation of a certificate.

CAR 102.020 Approval of Areas for Operation of Remote Piloted Aircraft (Drone)

- (1) A person may apply to Authority for the approval of an area as an area for the operation of a Remote Pilot Aircraft System (Drone)
- (2) In considering whether to approve an area for this purpose, the Authority will take into account the likely effect on the safety of air navigation of the operation of a Remote Pilot Aircraft System (Drone) in or over, the area.
- (3) An approval has effect from the time written notice of it is given to the applicant by the Authority, or a later day or day and time stated in the approval.
- (4) An approval may be expressed to have effect for a particular period (including a period of less than one (1) day).
- (5) Authority may impose conditions on the approval in the interests of the safety of air navigation.
- (6) If Authority approves an area under sub regulation (1), it must publish details of the approval (including any condition) in NOTAM or on an aeronautical chart.
- (7) Authority may revoke the approval of an area, or change the conditions that apply to such an approval, in the interests of the safety of air navigation, but must publish details of any revocation or change in NOTAM or on an aeronautical chart.
- (8) Authority must also give written notice of the revocation or change:
 - (a) to the person who applied for the approval of the area; or
 - (b) if that person applied for that approval as an officer of an organisation concerned with remote pilot aircraft (Drone) and no longer holds that office to the person who now holds the office.

CAR 102.025 General Requirements and Safety Considerations

(See GM to CAR-102.025 (1) & (12))

A Remote Pilot Aircraft Operator shall only operate an RPA (Drone) if they are reasonably satisfied that the flight can be conducted safely and in accordance with all Sultanate of Oman Regulations and approval requirements.

- (1) The operator shall establish procedures and instructions for the safe operation of all drones. (See GM to CAR-102.025(1))
- (2) A person must not operate a remote piloted aircraft in a way that creates a hazard to another aircraft, another person, or property.
- (3) Operators shall ensure that every flight is conducted in accordance with the provisions of this regulation and includes but not limited to the following requirements:
 - (a) Operators shall ensure that all RPA over a MTOW of 5kg (including batteries and any additional loads) are appropriately insured before commencement of any operation.
 - (b) Operators shall not operate an RPA in a manner which may cause safety risks to other individuals/properties or aircraft;
 - (c) Operators shall ensure that Remote Pilots conducting commercial RPA operations are appropriately licensed before commencing operations and have been fully briefed on all requirements or restrictions applicable to the approved operation.
 - (d) Operators shall ensure that the Remote Pilot gives way to other aircraft at all times and land the drone whenever hearing or sighting another aircraft in the vicinity of the RPA operation;
 - (e) Operators shall ensure that no flight contravenes intentionally or unintentionally the privacy of others;
 - (f) Operators shall determine and maintain a defined Minimum Safety Distance for operation of any RPA from persons not directly involved in flying the drone and from fixed or mobile objects. The Minimum Safety Distance shall not be less than thirty (30) meters unless prior authorisation has been obtained from the CAA;

- (g) No drone shall be used to carry persons;
- (h) Operators shall ensure that no flights are conducted for commercial activities unless authorised.
- (4) Operators shall obtain the necessary agreement from the owner(s) of a property that the drone will overfly or fly nearby. In the case of a public area or residential area, approval from the relevant local authority shall be obtained.
- (5) Remote Pilot Operators shall ensure that drone(s) are stored securely, and released for pilots use in a controlled and documented manner.
- (6) Remote Pilot Operators shall establish and maintain a system for exercising operational control over any flight operated under the terms of its certification ensuring safe initiation, continuation, diversion and termination of flight.
- (7) Remote pilot Operators shall be responsible for ensuring that the drone is fit for the intended flight. Operators shall ensure that all instruments and equipment required for a safe operation, are available and serviceable and maintained in accordance with manufacturer and operator's maintenance instructions. In the case of Drone events, these responsibilities may be transferred to the remote pilot; if so then this transfer shall be documented.
- (8) Remote Pilot Operators shall assess and authorise Remote Pilots before they can operate under their CAA certification. The assessment shall determine if Remote Pilots:
 - (a) are fit for operating the drone safely;
 - (b) are qualified for the intended operation;
 - (c) can operate with strict adherence to applicable laws, regulations and procedures;
 - (d) have the minimum required age of Eighteen (18) years:
 - i. when engaged in commercial/non-commercial activities;
 - ii. or drone event; or
 - iii. when engaged in others activities.
- (9) Remote Pilot Operators shall ensure that all personnel assigned to, or directly involved in operations remain free from any conditions which may impair their capacity to perform their duties.
- (10) Remote Pilot Operators shall notify changes concerning accountable person, operator name, address or contact details, type of drone, fleet size or any change that could impact the safety of the operations to the CAA prior to implementing the change.
- (11) Remote Pilot Operators shall ensure that no operation is undertaken unless:
 - (a) latest updated information about authorised flying airspaces is obtained;
 - (b) authorised flying airspaces are appropriately disseminated to the concerned persons;
 - (c) public safety including emergency contingencies to cover failure scenarios is assured;
- (12) Remote Pilot Operators shall retain for at least thirty-six (36) months any records that could serve:
 - (a) Operators to demonstrate their compliance with this CAR and applicable laws;
 - (b) The CAA and Remote Pilot Operators in the course of an investigation;
 - (c) To establish responsibilities and hence liability between Remote Pilot Operators, Remote Pilots and other parties. Records shall be stored in a manner that ensures protection from damage, alteration and theft. (See GM to CAR-102.025(12))

GM to CAR 102.025(1) General Requirements and Safety

- (1) The procedures should not contravene the requirements stipulated in this CAR. The procedures should be easily accessible to concerned staff and should state clear roles and responsibilities of the operator and the Remote Pilot.
- (2) For Remote Pilot Operators engaged in other activities than Commercial/non-commercial Activities, the CAA may accept that such procedures and instructions are not documented as long as the Operators can ensure that the principles of paragraph (1) are met.

Category of RPA	Mass [kg]	PRA Insurance	Licensing
Micro RPA	Less than 250 gm	Optional	Optional
Very Small RPA	251gm up to 2kg	Optional	Optional
Small RPA		Ontional	Ontional
Recreational	2.01kg up to 25 kg	Optional	Optional
Small RPA		CAA determine	Training &
Commercial			experience
Medium RPA	25.01 kg up to 150kg	Required	Required
Large RPA	150.01 kg and above	Required	Required

GM to CAR 102.025(3) (a) & (c) General Requirements and Safety

GM to CAR 102.025(12) General Requirements and Safety

Records could be but not limited to:

- (1) Flight mission logs containing:
 - (a) Date of the flight
 - (b) Route information/ GPS coordinates
 - (c) Time of start and End of Flight
 - (d) Name of Pilot
 - (e) Observations / incidents/ equipment failure
 - (f) CAA operation Approval, if applicable
 - (g) Drone details under its responsibilities with the following characteristics:
 - i. drone model,
 - ii. drone serial number,
 - iii. drone weight,
 - iv. drone main colour's.
- (2) Remote Pilot's authorisation and assessment.
- (3) Operators engaged in Drone Event Organiser should in addition to paragraphs (1) & (2), maintain the record of every event details. The details should at least contain the following:
 - (a) event type;
 - (b) date;
 - (c) location of the event;
 - (d) list of participated drones; and
 - (e) participating remote pilots.

CAR 102.030 Meaning of Excluded RPA

- (1) This regulation sets out what is an *excluded RPA*.
 - Note: Excluded RPA can be operated without a certain licence and permissions. See for example CAR-102.340, which requires a person to have a remote pilot licence to operate an RPA, unless it is an excluded RPA operation.
- (2) A micro RPA is an *excluded RPA*.
- (3) A very small RPA is an *excluded RPA* if it is being operated:
 - (a) for the purpose of sport or recreation; or
 - (b) in standard RPA operating conditions.
- (4) A small RPA is an *excluded RPA* if it is being operated:
 - (a) by or on behalf of the owner of the RPA; and
 - (b) over land owned or occupied by the owner of the RPA; and

- (c) in standard RPA operating conditions; and
- (d) for the purposes of one or more of the following:
 - i. aerial spotting;
 - ii. aerial photography;
 - iii. agricultural operations;
 - iv. aerial communications retransmission;
 - v. the carriage of cargo;
 - vi. any other activity that is similar to an activity mentioned in the subparagraphs above; and for which no remuneration is received by the operator or the owner of the RPA, the owner or occupier of the land or any person on whose behalf the activity is being conducted.
- (5) A small RPA, or a medium RPA, is an *excluded RPA* if it is being operated for the purpose of sport or recreation.
- (6) A small RPA, or a medium RPA, is an *excluded RPA* if it is being operated in standard RPA operating conditions by:
 - (a) a person for the sole purpose of meeting the experience requirement mentioned in CAR-102.255(2)(c) for the grant of a remote pilot licence; or
 - (b) the holder of a remote pilot licence for the sole purpose of getting practical experience and gaining competency in the operation of an RPA, including a kind of RPA that is not specified in the holder's remote pilot licence.
- (7) A medium RPA is an *excluded RPA* if it is being operated:
 - (a) by or on behalf of the owner of the RPA; and
 - (b) by a person who holds a remote pilot licence that authorises the person to operate the RPA; and
 - (c) over land owned or occupied by the owner of the RPA; and
 - (d) in standard RPA operating conditions; and
 - (e) for the purposes of one or more of the following:
 - i. aerial spotting;
 - ii. aerial photography;
 - iii. agricultural operations;
 - iv. aerial communications retransmission;
 - v. the carriage of cargo;
 - vi. any other activity that is similar to an activity mentioned in the subparagraphs above; and for which no remuneration is received by the operator or owner of the RPA, the owner or occupier of the land or any person on whose behalf the activity is being conducted.
- (8) An RPA is an *excluded RPA* if it is being operated:
 - (a) by a person solely for the purpose of the person receiving training from an RPA operator who holds a certificate under this regulation that authorises the operator to conduct operations using the RPA; and
 - (b) in accordance with the operator's documented training procedures.

CAR 102.035 Meaning of Standard RPA Operating Conditions

- (1) An RPA is operated in *standard RPA operating conditions* providing adherence to the following:
 - (a) With the exception of a Micro RPA (less than 250gm) all RPAs must be registered with the CAA prior to their use within the Sultanate of Oman (see paragraph (h)); and
 - (b) the RPA is operated within the visual line of sight (VLOS) of the person operating the RPA; and
 - (c) the RPA is operated at or below 400 ft AGL by day; and

- (d) the RPA is not operated within 30 m of a person who is not directly associated with the operation of the RPA; and
- (e) the RPA is not operated:
 - i. in a prohibited area; or
 - ii. in a restricted area; or
 - iii. in a danger area; or
 - iv. over a populous area; or
 - v. within 3 nautical miles (5.5km) of the movement area of a controlled aerodrome; and
 - vi. clear of all landing and take-off paths to all runways of all aerodromes.
- (f) the RPA is not operated over an area where a fire, police, military or other public safety or emergency operation is being conducted without the approval of a person in charge of the operation; and
- (g) the person operating the RPA operates only one RPA.
- (h) Drones shall be registered by the first owner of that drone who will then advise the CAA when one of the following occurs:
 - i. The drone is sold or ownership is transferred to another person; or
 - ii. The drone is destroyed through a crash where no injuries were incurred by third parties or buildings; or
 - iii. The drone is no longer being flown due to unserviceability.
 - Note: Registration of drones can be carried out through the CAA website <u>www.caa.gov.om</u> where the owner must register the drone upon first arrival in Oman or after the transfer of ownership of that drone to another person.

CAR 102.040 Operation RPA near people

- (1) Subject to paragraphs (2) and (3), a person must not operate an RPA within 30 metres of a person (the *second person*) who is not directly associated with the operation of the RPA.
- (2) Paragraph (1) does not apply if the second person is standing behind the RPA while the RPA is taking off.
- (3) Paragraph (1) does not apply if:
 - (a) the RPA is a very small RPA, small RPA or medium RPA; and
 - (b) the second person has consented to the RPA operating within 30 m of him or her; and
 - (c) the RPA is operated no closer than 15 m of him or her.

Note: An RPA operator and/or the RPA pilot bears an evidential burden in relation to the matters in paras (2) and (3)

CAR 102.045 Where Very Small, Small and Medium RPA may be Operated

- (1) A person may operate a very small RPA, a small RPA or a medium RPA outside an approved area only if:
 - (a) where the RPA is operated above 400 feet AGL, the operator has CAA's approval to do so; and
 - (b) the RPA stays clear of populous areas.

Note 1: The CAA must publish details of the approval of an area (including any conditions) in NOTAM or on an aeronautical chart — see CAR-102.020(5).

Note 2: This Subpart only applies to the operation of certain RPA – see CAR-102.010.

CAR 102.050 Large RPA — Requirement for Certificate

A person may operate a large RPA only if either a special certificate of airworthiness (restricted category), or an experimental certificate, has been issued for it under CAR-21.

Note 1: For large RPA category, see CAR-102.010.

Note 2: A large RPA is required to carry a manufacturer's data plate and an aircraft registration identification plate — see respectively regulations CAR-21 and CAR-47.

CAR 102.055 Maintenance of Large RPA

- (1) A large RPA must be maintained as a Class B aircraft.
- (2) A person who carries out maintenance on a large RPA must comply with any directions given in writing by the CAA in relation to the maintenance of the RPA, or the maintenance of RPA of a class that includes the RPA.

CAR 102.060 Large RPA — Persons Permitted to Conduct Maintenance

- (1) A person may carry out maintenance on:
 - (a) a large RPA that is an Oman registered aircraft; or
 - (b) an aircraft component for such an RPA; or
 - (c) aircraft material for such an RPA;

if the person:

- (d) holds an airworthiness authority that authorises the maintenance; or
- (e) carries out the maintenance under the supervision of a person who holds such an authority.

CAR 102.065 Certain RPA — Requirement for RPA Operator's Certificate

- (1) This regulation does not apply in relation to the operation of an excluded RPA.
- (2) A person commits an offence of strict liability if:
 - (a) the person conducts operations using RPA; and
 - (b) the person does not hold a certificate as an RPA operator under CAR-102 Subpart F that authorises the person to conduct the operations.

CAR 102.070 Approval of Operation of Large RPA

- (1) A person may operate a large RPA only with the CAA's approval.
 - (a) A person may apply to the CAA, in writing, for approval to operate a large RPA.
 - (b) The CAA must grant the approval if:
 - i. the person is certified as an operator of large RPA; and
 - ii. the operation would not contravene any condition of the certification.
 - Note 1: Under regulation CAR-15.100, an application may be made to the Appeals Tribunal for review of:
 - (a) a decision refusing to issue, or cancelling, suspending or varying, an approval; or
 - (b) a decision imposing a condition on an approval.
 - Note 2: For certification as an RPA operator, see CAR-102 Subpart F.
 - (c) Without limiting CAR-15.100, the CAA may impose conditions on an approval:

- i. prohibiting the operation of the relevant RPA at night or in conditions other than VMC; or
- ii. restricting the extent to which the RPA may be operated at night or in conditions other than VMC; or
- iii. requiring the RPA to stay within a specified area, or
- iv. requiring the operator to make specified broadcasts.

CAR 102.075 RPA not to be Operated Over Populous Areas

- (1) In this regulation a *certificated RPA* means an RPA for which a certificate of airworthiness has been issued.
- (2) A person must not operate an RPA that is not a certificated RPA over a populous area at a height less than the height from which, if any of its components fails, it would be able to clear the area.

Note 1: For **populous area** and **RPA**, see CAR-102.005.

- (3) Without the approval of the CAA, a person must not operate a certificated RPA over a populous area at a height less than the height from which, if any of its components fails, it would be able to clear the area.
- (4) In considering whether to give an approval under paragraph (3), the CAA must take into account:
 - (a) the degree of redundancy in the RPA's critical systems; and
 - (b) any fail-safe design characteristics of the RPA; and
 - (c) the security of its communications and navigation systems.
- (5) Before giving an approval under paragraph (3), the CAA must be satisfied that the person who intends to operate the RPA will take proper precautions to prevent the proposed flight being dangerous to people and property.

CAR 102.080 Fees.

Each application must be accompanied by the proper fee that may be paid by cheque or money order or cash to the Authority. Fees are prescribed in Civil Aviation Notice 1 - 06.

SUBPART B – OPERATION OF REMOTE PILOT AIRCRAFT

CAR 102.100 Examples of Possible Remote Pilot Aircraft (Drone) Operations

- (1) The following are examples of possible RPA (Drone) operations that can be conducted under the framework in this requirement:
 - (a) Crop monitoring/inspection;
 - (b) Research and development;
 - (c) Educational/academic uses;
 - (d) Power-line/pipeline inspection in hilly or mountainous terrain;
 - (e) Antenna inspections;
 - (f) Aiding certain rescue operations;
 - (g) Bridge inspections;
 - (h) Aerial photography; including
 - i. Monitoring and surveillance tasks;
 - ii. Border and maritime patrol;
 - iii. Search and rescue;
 - iv. Fishery protection;
 - v. Natural disaster monitoring;
 - vi. Contamination measurement;
 - vii. Road traffic surveillance;
 - (i) Operating in a CAA approved designated area.

CAR 102.105 Operation of Remote Pilot Aircraft

- (1) Drone operation shall not be permitted in Controlled Airspace unless permitted by the CAA.
- (2) Drones shall only be permitted in segregated areas promulgated by the CAA in compliance with Minimum Operator Requirements listed in paragraph (4) and a NOTAM being issued.
- (3) Minimum Equipment Requirements;
 - (a) Direct radio control link between remote pilot and Drone.
- (4) Operational requirements and restrictions;
 - (a) All Drone components are in working order in accordance with the supplier's User Manual;
 - (b) Applicant shall be at least eighteen (18) years of age;
 - (c) The Remote Pilot shall maintain the Drone within visual line of sight at all times and maintain an altitude not above 400 feet/122m Above Ground Level (AGL);
 - (d) A Drone shall not be operated within one hundred and fifty (150) metres of any person, vessel, vehicle or structure not under the control of the Drone operator; and additionally, during take-off or landing the Drone shall not be flown within thirty (30) Metres of any person, unless that person is under the operator in control of the aircraft;
 - (e) The Remote Pilot shall be responsible for avoiding collisions with people, objects and other aircraft and shall not harass or endanger people or threaten to damage property;
 - (f) A Drone shall not be operated over a congested or populated area, except with the permission of the CAA; it shall not fly over public or private properties, or within 5.5km (3 NM) of Oman's airports, Heliports, Helicopter Landing Sites, and airfields and shall remain clear of all ATS control zones;
 - (g) A Drone operator shall at all times give way to other aircraft;
 - (h) Whenever the RPA Operator hears or sights another aircraft in the vicinity of the RPA operation, the RPA shall be landed;
 - (i) The operator of the RPA shall not cause or permit any article (whether or not attached to a parachute) to be dropped from an RPA unless permitted by the CAA;
 - (j) Only day time operation (VMC) is permitted;

- Note: **Visual meteorological conditions (VMC).** Meteorological conditions expressed in terms of visibility (not less than 5km, distance from cloud (not less than 1500ft 450m), and ceiling (not less than 1500ft 450m), equal to or better than specified minima.
- (k) The operator of the RPA shall not operate at night, except for those RPA being operated under CAR-102.390 (Used inside Closed buildings);
- (I) The operator of the RPA shall not operate in wind conditions greater than twenty (20) knots (37km/hr), or less if stated in the manufacturer's operating limitations;
- (m) Use of video or image capturing devices shall be prohibited unless permitted by National Survey Authority (NSA).

CAR 102.110 Requirements for Passing Information to the Authority

Any person applying for permission to operate an RPA under this regulation shall pass all information to Authority about the operation, launching or release of an unmanned aircraft, then, unless the provision says otherwise, that person may do so by giving the information to the Flight Safety Department within the CAA using the application form AWR-033.

CAR 102.115 RPA (Drone) Operations.

- (1) The drone operator or the remote pilot is directly responsible for, and is the final authority as to, the operation of that drone.
- (2) The remote pilot will have final authority over the flight.
- (3) Additionally, a person manipulating the controls can participate in flight operations under certain conditions.
- (4) A person may not operate or act as a remote pilot in the operation of more than one drone at the same time unless specifically authorised by the CAA. In this case, the maximum number of drones will be limited to a maximum of two (2).
- (5) Notwithstanding para (4) a person may apply to the CAA for approval to operate more than two(2) drones in a coordinated flight display under the following conditions:
 - (a) The operator shall ensure that all UA are appropriately insured before commencement of any operation or display.
 - (b) The operator shall ensure that UAS Pilots are competent to perform the intended operation and possess the skills and the knowledge about civil aviation law, regulations and procedures.
 - (c) The operator shall ensure assessment and authorization of UA pilots before they can operate under its RPA approval or display.
 - (d) The operator shall have demonstrated that the risk and safety factors associated with the operation of multiple UAS is manageable through the application of redundancy systems or specific "return to home" command, in the event of loss of control signal to the operation or display.
 - (e) The operator shall ensure compliance with any security requirement mandated by the CAA or any other agencies.
 - (f) The use of aerial photographic apparatus installed on the UA shall not be permitted without a prior authorization from the NSA within the Oman FIR.
 - (g) The operator shall establish and implement procedures to control the UA operation records. Records shall be stored in a manner that ensures protection from damage, alteration and theft. Records shall be retained for at least 24 months.
 - (h) The operator shall ensure than No Dangerous Goods is transported by air.
 - Note: Records shall be stored in a manner that ensures protection from damage, alteration and theft.

GM to CAR 102.115(g)

Records may be but not limited to:

- (1) The UA details: UA model, UA serial number, registration, UA weight, UA main colour, Name of Pilot and copy of pilot license details
- (2) Date of the event
- (3) Location of the event with coordinates
- (4) Time of start and End of Flight of each UA flight operation
- (5) Observations / incidents/ equipment failure in such a case.
- (6) The CAA approval, if applicable.

CAR 102.120 Remote Pilot.

- (1) A person acting as a remote pilot of a drone in the Oman Airspace under CAR-102 must obtain a remote pilot license with a drone rating issued, validated by the CAA prior to conducting any commercial drone flight activities.
- (2) The remote pilot will have the final authority and responsibility for the operation and safety of a drone operation.
- (3) The remote pilot must retain the ability to direct the drone to ensure compliance with the requirements of CAR-102.
 - Note: There are a number of different methods that a remote pilot may utilize to direct the drone to ensure compliance with this regulation. For example, the remote pilot may transmit a command for the autonomous aircraft to climb, descend, land now, proceed to a new waypoint, enter an orbit pattern, or return to home. Any of these methods may be used to satisfactorily avoid a hazard or give right of way.

CAR 102.125 Autonomous Operations.

- (1) An autonomous operation is generally considered an operation in which the remote pilot inputs a flight plan into the Control Station (CS), which sends it to the autopilot onboard the drone. During automated flight, flight control inputs are made by components onboard the aircraft, not from a CS. Thus, the remote pilot could lose the control link to the drone and the aircraft would still continue to fly the programmed mission and return home to land. During automated flight, the remote pilot must also have the ability to change routing and altitude or command the aircraft to land immediately. The ability to direct the small drone may be through manual manipulation of the flight controls or through commands using automation.
- (2) The use of automation does not allow a person to simultaneously operate more than one (1) drone.
- (3) For drone operation with the method of Beyond Visual Line of Sight Operations (BVLOS), the Drone shall be equipped with a monitoring and tracking capability in addition, a way of collision avoidance shall be installed.

CAR 102.130 Radio Spectrum Requirements

- (1) RPA's (Drones) complying with Annex D, Short Range Devices, Frequency Ranges and Power Limitations from the Regulation Organising the Registration and Utilisation of Frequencies and Radio Equipment and their pricing issued by the Telecommunication Regulatory Authority (TRA) Decision 133/2008, will not be required to obtain frequency license/approval from TRA.
- (2) RPA's that do not comply with the provisions of Annex D of the aforementioned TRA regulation shall be required to obtain a frequency license/approval from TRA after grant of the CAA authorisation.

CAR 102.135 C2 Link Communication Service Provider (C2CSP) Requirements

- RPAS operations over 150kg and operating within the Oman FIR shall have an approved means of communication between the RPA and ATC to ensure a safe and efficient operation of the RPA. (See CAR-102.235 para (8).
- (2) RPAS operations utilising C2 Link Communication Service Providers (C2CSP) shall be in compliance with the following standards after the 26th November 2026.
 - (a) C2 Link communication service provider (C2CSP) is an entity which provides a portion of, or all of, the C2 Link service for the operation of an RPAS.

Note: An RPAS operator may also be its own C2CSP.

- (b) The C2 Link shall only support the remote pilot tasks required for the safe and efficient operation of the RPAS.
- (c) When the C2 Link includes support for the remote pilot tasks required for air traffic control (ATC) purposes, such as relay of ATC communications, the C2 Link performance shall, in a secure manner, meet the performance required for those tasks appropriate to the airspace requirements.
 - Note 1: Airspace requirements vary depending upon air traffic density and complexity and may be reflected in equipage or separation requirements.
 - Note 2: Alternate means of communications between the remote pilot and air traffic control may obviate the need for the C2 Link to be used for ATC communications.
- (d) The C2 Link service shall only be used for the transmission of information relating to the safe and efficient operation of the RPAS and be limited to the information described in para (b) above.
- (e) The duration between C2 Link initiation and C2 Link termination shall not exceed the time of flight and ground operations, plus the time necessary to perform safety and security checking before and after each flight.

Note: Efficient use of the limited frequency spectrum resource requires that a link be released and made available to other users when not in use.

- (f) The geographical coordinates of the C2 Link service area and time of provision, intended for RPAS operational use, shall be validated and verified to ensure that the C2 link service area is safe for use by its intended recipients.
- (g) A pro-active process for anticipating and mitigating interrupted or lost C2 Link states, shall be implemented and described by the C2CSP to the RPAS operator.
- (h) The C2 Link service area shall be compatible with the planned (including contingency) areas of operation of the RPA and the location of all of the RPS's involved in the operation.
- (i) Before providing any C2 Link service, the C2CSP shall demonstrate initial compliance with the provisions contained in paras (b) and (e) through to (h) to the CAA.
- (j) The RPA and RPS shall always remain within the C2 Link service area.
- (3) Further guidance material and requirements pertaining to C2CSP can be found in ICAO Annex 10, Volume VI *Communication Systems and Procedures Relating to Remotely Piloted Aircraft Systems C2 Link (Edition 1).*
- (4) Utilization of frequencies for RPAS C2 Link Communication Service shall be in compliance with Annex 10 Volume V, chapter 5 after the 26th November 2026.

SUBPART C – GENERAL PROHIBITION ON UNSAFE OPERATIONS

CAR 102.140 Applicability of this Subpart

This Subpart applies to the operation of all remote piloted aircraft that are not aircraft flying by a manned pilot onboard.

CAR 102.145 Hazardous Operation Prohibited

A person must not operate a remote piloted aircraft in a way that creates a hazard to another aircraft, another person, or property.

CAR 102.150 Operation in Prohibited or Restricted area

A person may operate a remote piloted aircraft in or over a prohibited area, or in or over a restricted area, only with the permission of, and in accordance with any conditions imposed by, the authority controlling the area.

Note: Details of prohibited or restricted areas are published in the Oman AIP or in a NOTAM.

CAR 102.150 Operations in Controlled Airspace

No person shall operate a remote piloted aircraft (Drone) in controlled airspace except only in an area approved by the Authority, and in accordance with any conditions of the approval.

CAR 102.155 Operation Near Aerodromes

- (1) No person shall operate an RPA (Drone) within 5.5km (3nm) of a controlled aerodrome except only in an area approved by the Authority under this regulation.
- (2) A person must not operate an RPA (Drone) in such a manner as to create an obstruction to an aircraft taking off from, or approaching for landing at, a landing area or a runway of an uncontrolled aerodrome.

CAR 102.160 Permission for Operation of Remote Piloted Aircraft (Drone) Near a Controlled Aerodrome

- (1) The operation of Drones in within 5.5km (3nm) of an ATC controlled aerodrome is not permissible unless prior approval is granted by the CAA.
- (2) On granting of permission for a drone operation near a controlled aerodrome the air traffic control service shall have priority; a NOTAM will be issued for the period of operation.
- (3) A person shall apply for permission to operate remote piloted aircraft (Drone) near a controlled aerodrome shall provide the following information to the Authority:
 - (a) the name, address and telephone number of the person who will operate the aircraft or, if several people will be involved, the name, address and telephone number of the person who will coordinate the operation; and
 - (b) the date and time the operation is to begin and finish; and
 - (c) precise location; and
 - (d) if more than one (1) RPA (Drone) is to be operated at a time, how many RPAs (Drones) are to be operated at that time

Note: The CAA will publish details of the approved area including all conditions associated with the approval, in a NOTAM or on an aeronautical chart.

SUBPART D – REGISTRATION AND CERTIFICATION OF REMOTE PILOTED AIRCRAFT (DRONES)

CAR 102.170 General Requirements

- (1) In addition to a permission granting, the Authority may require the registration of the RPA (Drones) based on the total mass (including batteries and equipment).
- (2) Registration shall be done through the CAA Flight Safety or any legal entity authorised by the Authority
- (3) Display the registration number on the remote piloted aircraft (Drone) as appropriate (if applicable under CAR-47).
- Note: A large remote piloted aircraft (Drone) must be registered, as provided for in CAR-47 prior to operating under CAR-102. This regulation will establish and streamline in future the online registration option for large remote piloted aircraft (Drone) that will be operated only within the territorial limits of the Sultanate of Oman. The online registration Web address will be established and published in the CAA website. Guidance regarding large remote piloted aircraft (drone) registration and marking may be found under CAR 47 in the same manner as manned aircraft.

CAR 102.175 Registration of Foreign-Owned and Operated Unmanned Aircraft (Drone)

If Drone operations involve the use of foreign remote piloted civil aircraft, the operator shall be required to obtain an RPA Operator Permit before conducting any commercial air operations under this regulation.

Note: Remote pilots of foreign-registered aircraft will need to comply with any applicable requirements imposed by their country of registration that do not conflict with CAR-102. For example, while CAR-102 will not require airworthiness certification, the small unmanned aircraft will need to comply with any airworthiness certification, if required to do so by its country of registration.

CAR 102.180 RPA Maintenance, Inspections, and Condition for Safe Operation.

- (1) A drone must be maintained in a condition for safe operation as per the manufacturer's specifications.
- (2) Prior to flight, the remote pilot is responsible for conducting a check of the drone and verifying that it is condition ready for safe operation.

CAR 102.185 Medical Condition.

Being able to safely operate the drone relies on, but not limited to, the physical and mental capabilities of the remote pilot, any person manipulating the controls and any other direct participant in the drone operation. Though the person manipulating the controls of a drone are not required to obtain an airman medical certificate, they may not participate in the operation of a drone if they know or have reason to know that they have a physical or mental condition that could interfere with the safe operation of the drone.

CAR 102.190 Physical or Mental Incapacitations.

Obvious examples of physical or mental incapacitations that could render a remote aircraft pilot (the person manipulating the controls) incapable of performing their drone operational duties include, but are not limited to:

- (1) The temporary or permanent loss of the dexterity necessary to operate the CS to safely control the drone.
- (2) The inability to maintain the required "see and avoid" vigilance due to blurred vision.
- (3) The inability to maintain proper situational awareness of the small drone operations due to illness and/or medication(s), such as after taking medications with cautions not to drive or operate heavy machinery.
- (4) A debilitating physical condition, such as a migraine headache or moderate or severe body ache(s) or pain(s) that would render the remote pilot, the person manipulating the controls unable to perform drone operational duties.
- (5) A hearing or speaking impairment that would inhibit the remote pilot, person manipulating the controls from effectively communicating with each other. In a situation such as this, the remote pilot must ensure that an alternative means of effective communication is implemented. For example, a person who is hearing impaired may be able to effectively use sign language to communicate.

CAR 102.195 Eligibility for Certification as a Remote Pilot

- (1) Only an individual is eligible to be certificated as a Remote pilot.
- (2) A person is eligible to be certificated as a Remote Pilot if he or she:
 - (a) qualifies for the issue of a radio operator's certificate of proficiency; and
 - (b) has been awarded a pass in an aviation license theory examination (other than a flight radio operator's examination); and
 - (c) has been awarded a pass in an instrument rating theory examination; and
 - (d) has completed a training course in the operation of the type of Drone that he or she proposes to operate, allowed by the Drone's manufacturer specifications; and
 - (e) has at least five (5) hours' experience in operating Drones outside controlled airspace.
- (3) A person who holds or has held:
 - (a) a flight crew license with a command instrument rating; or
 - (b) a military qualification equivalent to a license and rating mentioned in paragraph (a); or
 - (c) an air traffic control license, or a military qualification equivalent to an air traffic control license; is taken to satisfy the conditions in paragraphs (2) (a), (b) and (c).

CAR 102.200 Certification as a Remote Pilot

- (1) If the CAA certifies a person as a Remote Pilot, CAA may issue a certificate stating any conditions attached to or applicable to that certification.
- (2) If the CAA certifies a person as a Remote Pilot, and imposes a condition on the certification, CAA must issue a certificate stating the certification, and any conditions applicable.

CAR 102.205 Conditions on Certification as a Remote Pilot

- (1) The CAA may impose a condition on the certification of a person as a Remote Pilot in the interests of the safety of air navigation.
- (2) For example, (without limiting the generality of paragraph (1)), a condition may:(a) allow the person to control Drones of only specified types; or

- (b) limit the areas where he or she may control the Drones; or
- (c) allow him or her to control Drones only in VMC.
- (3) It is a condition of a Remote Pilot's certification that he or she must not operate a Drone in controlled airspace unless he or she holds an aircraft radiotelephone operator's certificate of proficiency.

CAR 102.210 Duration of a Remote Pilot Certification

- (1) A Remote Pilot's certification issued by the CAA remains in force until it is cancelled.
- (2) A Remote Pilot's certification is not in force during any period of suspension issued by the CAA.

CAR 102.215 Notice to certified Remote Pilot to Show Just Cause

- (1) The CAA may give a show just cause notice to a CAA certified remote pilot if there are reasonable grounds of non-compliance against this regulation or any other regulation issued by the CAA that would justify the cancellation of the certification under CAR-102.220.
- (2) A show just-cause notice must:
 - (a) Advise the remote pilot of the facts and circumstances that, in CAA's opinion, would justify the cancellation of the certification under CAR-102.220; and
 - (b) invite the remote pilot to show in writing, within a reasonable time stated in the notice, why the certification should not be cancelled.
- (3) A show just-cause notice may state that the certification is suspended if the CAA reasonably considers that there may be a serious risk to the safety of air navigation if the certification were not suspended.
- (4) If a show just-cause notice states that the certification is suspended, the certification is suspended from when the notice is given to the holder.
- (5) The CAA may at any time revoke the suspension.
- (6) If the approval is suspended and the CAA has not dealt with it under CAR-102.200 within 90 days after the day it is suspended, the suspension lapses at the end of that period.

CAR 102.220 Cancellation of Remote Pilot's Certification

- (1) The CAA may cancel a certified Remote Pilot's certification by written notice to the remote pilot, if:
 - (a) The CAA has given to the remote pilot a show just cause notice under CAR-102.215 in relation to it; and
 - (b) The CAA has taken into account any representations made, within the period stated in the notice, by or on behalf of the controller; and
 - (c) there are reasonable grounds for believing that the remote pilot:
 - i. has operated a Drone in contravention of these Regulations or of a condition of the certification; or
 - ii. has operated the Drone negligently or carelessly; or
 - iii. in operating the Drone, has recklessly endangered human life or property.
- (2) If the CAA has given a show just cause notice under CAR-102.215 to a certified remote pilot, and it decides not to cancel the approval, it:
 - (a) must tell the controller in writing of the decision; and
 - (b) must, if the remote pilot's certification is suspended under that regulation, revoke the suspension.

CAR 102.225 Cancellation at Request of Holder

- (1) Despite anything else in this Regulation, the CAA must cancel a certified Remote Pilot's certification if asked to do so in writing by the Remote Pilot.
- (2) The cancellation takes effect when the request is given to the CAA, or if a later dated is stated in the request, on the later day.

CAR 102.230 Regulatory Principles

- (1) Oman Civil Aviation Regulation is designed to enable the safe and efficient operation of manned aircraft in all classes of airspace, and hence for drone operators to be permitted to operate in airspace integrated with manned aircraft they shall be required operate within the same regulatory framework.
- (2) Drone operators do not have an automatic right to airspace use. This applies particularly if accepted levels of safety provision cannot be maintained or, if such operations would have an unreasonably negative effect on other airspace users. In order to integrate with other airspace users, Drone operators must ensure that their aircraft can demonstrate an equivalent level of safety, through compliance with the rules and procedures that apply to manned aircraft.
- (3) Drone Operators wishing to operate in Segregated Airspace shall submit an application to the Flight Safety Department Special Airspace Use request, for the CAA review and approval, prior to the granting of permission to conduct the drone operation in segregated airspace.
- (4) Drone operators must recognize the right and the expectations of other airspace users. As such, the routine flight of any drone outside of segregated airspace cannot be permitted to increase the risk to existing users and shall not deny use of the airspace to them.
- (5) Drone commercial Operators requesting to operate an aircraft with a camera shall be required to include details of the camera usage in the application for CAA Security and NSA review and approval.

CAR 102.235 Interaction with Air Traffic Control

- (1) Unless special provision is made with the appropriate Air Traffic Control (ATC) unit handling the drone activity, the provision of an Air Traffic Service (ATS) to a drone shall be transparent to the Air Traffic Controller. In other words, the controller shall not have to do anything different in the use of R/T or landlines etc. than he would for other aircraft under his control, nor should he have to apply different rules or work to different criteria.
- (2) The RPA Operator who has obtained a CAA Remote Pilot Aircraft Operation Approval, shall comply with all conditions indicated on the approval.
- (3) The RPA Operator shall comply with all ATC Clearances and instructions from the ATC unit and with the minimum equipment requirements applicable to the airspace within which they intend to operate.
- (4) On first contact with the ATC Unit, the drone operator shall ensure that the ATC are fully aware that they are dealing with a drone flight. The ATC unit may decide to allocate the drone Pilot with a Special Call-sign or transponder code to highlight they are operating a drone.
- (5) Where "special provisions or conditions" are agreed to with the ATC unit, it is essential that these shall not reduce the situational awareness of other airspace users.
- (6) To comply with ATC instructions in a timescale comparable with that of a manned aircraft, it is imperative that the capability of taking immediate active control of the aircraft exists at all times.
- (7) Any requirement for special equipment (e.g. SSR Transponder Mode S) mandated for manned aircraft in certain airspace shall also be mandated as a minimum requirement for a drone intending to fly in such airspace.
- (8) All RPA operations over 150kg (MTOW) shall be equipped with approved radio communications equipment, navigational equipment (GPS) and SSR Transponder Mode S.

CAR 102.240 Sense and Avoid (Required for Applicants of Special Approval to Operate in Controlled Airspace)

- (1) The overriding principle when assessing if a proposed drone Sense and Avoid function is acceptable shall be that it should not introduce a greater hazard than currently exists. Any proposed function must demonstrate at least equivalence with manned aircraft safety standards and the drone shall comply with the rules and obligations that apply to manned aircraft including those applicable to separation and collision avoidance.
- (2) Any Sense and Avoid Collision Avoidance System shall have the capabilities to:
 - (a) Detect and avoid traffic fitted with transponders (air and ground operations) in accordance with the Rules of the Air;
 - (b) Detect and avoid terrain and other obstacles;
 - (c) Approved by appropriate CAA for the OEM.
- (3) Additionally, a Sense and Avoidance System should have the capability to:
 - (a) Detect and avoid all airborne objects, including gliders, hang-gliders, para-gliders, microlights, balloons, parachutists etc.;
 - (b) Avoid hazardous weather;
 - (c) Perform equivalent functions, such as maintaining separation, spacing and sequencing that would be done visually in a manned aircraft.

SUBPART E — REMOTE PILOT LICENSE

CAR 102.250 Application for Remote Pilot Licence

(1) An individual may apply to the CAA, in writing, for a licence (a *remote pilot licence*) to operate an RPA.

Note: For the kinds of RPA to which this Subpart applies, see CAR-102.010.

- (1) An application for a remote pilot licence must include the following information:
 - (a) details of any flight crew licence, air traffic control licence or any military flight qualification that the applicant holds (including details of ratings, endorsements and qualifications);
 - (b) details of qualifications the applicant holds that is equivalent to a licence mentioned in paragraph (a);
 - (c) details of any aeronautical experience that the applicant has;
 - (d) details of any of the following examinations the applicant has passed (other than any examination passed in the course of gaining a licence mentioned in paragraph (a)):
 - i. an aeronautical examination (within the meaning of CAR FCL-1);
 - (e) if the applicant does not hold a licence mentioned in paragraph (a), details of any aeronautical radio operator certificate that the applicant holds;
 - (f) details of the applicant's experience in operating RPA;
 - (g) evidence of the completion of any training course in RPA operation that the applicant has undertaken.

CAR 102.255 Eligibility for Remote Pilot Licence

(1) The CAA shall grant a remote pilot licence to the applicant if he or she:

- (a) has passed:
 - i. an aeronautical knowledge examination (within the meaning of CAR FCL) for a flight crew licence under CAR FCL; or
 - ii. the theory component of an RPL training course; or
 - iii. the theory component of a course conducted in a foreign country which the CAA is satisfied is equivalent to the theory component of an RPL training course; and
- (b) has completed:
 - i. an RPL training course in the manual or automated operation of a category of RPA that he or she proposes to operate; or
 - ii. a flight test conducted by the CAA for the purposes of this subparagraph; and
- (c) has at least five (5) hours experience in operating an RPA under standard RPA operating conditions.

Note: An application may be made to the Appeals Tribunal (under CAR-15.100) for review of:

- (a) a decision refusing to grant, or cancelling, suspending or varying, a certificate; or
- (b) a decision imposing a condition on a certificate.
- (2) A person who holds or has held:
 - (a) a flight crew licence; or
 - (b) a military qualification equivalent to a flight crew licence; or
 - (c) an air traffic control licence, or a military qualification equivalent to an air traffic control licence; is taken to satisfy the condition in paragraph (2)(a).

CAR 102.260 Conditions on Remote Pilot Licences

- (1) Without limiting regulations of CAR-15.100, a condition may:
 - (a) allow the person to operate RPA of only specified kinds; or
 - (b) limit the areas where he or she may operate RPA; or
 - (c) allow him or her to operate RPA only in VMC.
- (2) It is a condition of a remote pilot licence that the licence holder must not operate an RPA above 400 ft AGL in controlled airspace, or within three (3) nautical miles (5.5km) of the movement area of an ATC controlled aerodrome, unless he or she holds at least one of the following qualifications:
 - (a) an aeronautical radio operator certificate;
 - (b) a flight crew licence;
 - (c) an air traffic control licence;
 - (d) a military qualification equivalent to a licence mentioned in paragraph (b) or (c);
- (3) It is a condition of a remote pilot licence that an RPA must be operated within the visual line of sight of the licence holder unless he or she:
 - (a) has passed:
 - i. an aeronautical knowledge examination (within the meaning of CAR FCL) for the grant of an instrument rating under CAR FCL; or
 - (b) either:
 - holds both a certificate as an RPA operator under Subpart F and an approval under CAR-102.125 to operate the RPA beyond the person's visual line of sight (BVLOS); or
 - ii. is a member of an RPA operator's personnel and the RPA operator holds both a certificate as an RPA operator under Subpart F and an approval under CAR-102.125 for the operator's personnel to operate RPA beyond their visual line of sight (BVLOS).
- (4) It is a condition of a remote pilot licence that the licence holder must not operate more than one(1) RPA at a time unless:
 - (a) he or she holds an approval under CAR-102.115(4) to operate more than one (1) RPA at a time; and
 - (b) the conditions (if any) imposed on the approval are complied with.
- (5) The holder of a remote pilot licence commits an offence of strict liability if the holder contravenes a condition mentioned in paragraphs (2), (3) or (4).

CAR 102.265 Notice to holder of Remote Pilot Licence to Show Just Cause

- (1) The CAA may give a show just cause notice to the holder of a remote pilot licence if there are reasonable grounds for believing that there are facts or circumstances that would justify the cancellation of the licence under CAR-102.270.
- (2) A show just-cause notice must:
 - (a) tell the holder of the licence of the facts and circumstances that, in CAA's opinion, would justify the cancellation of the licence under CAR-102.270; and
 - (b) invite the holder of the licence to show in writing, within a reasonable time stated in the notice, why the licence should not be cancelled.
- (3) A show just-cause notice may state that the licence is suspended if the CAA reasonably considers that there may be a serious risk to the safety of air navigation if the licence were not suspended.
- (4) If a show just-cause notice states that the licence is suspended, the licence is suspended from when the notice is given to the holder.
- (5) The CAA may at any time revoke the suspension.

(6) If the approval is suspended and the CAA has not dealt with it under CAR-102.270 within ninety(90) days after the day it is suspended, the suspension lapses at the end of that period.

Note: CAR-15.100 provides for review of certain decisions by the Appeals Tribunal.

CAR 102.270 Cancellation of a Remote Pilot Licence

- (1) The CAA may cancel a remote pilot licence by written notice to the holder of the licence, if:
 - (a) The CAA has given to the holder a show just cause notice under CAR-102.265 in relation to it; and
 - (b) The CAA has taken into account any representations made, within the period stated in the notice, by or on behalf of the holder; and
 - (c) there are reasonable grounds for believing that the holder:
 - i. has operated an RPA in contravention of these Regulations or of a condition of the licence; or
 - ii. has operated the RPA negligently or carelessly; or
 - iii. in operating the RPA, has recklessly endangered human life or property.
- (2) If the CAA has given a show cause notice under CAR-102.265 to the holder of a remote pilot licence, and it decides not to cancel the licence, it:
 - (a) must tell the holder in writing of the decision; and
 - (b) must, if the holder's licence is suspended under that regulation, revoke the suspension.

Note: CAR-15.100 provides for review of certain decisions by the Appeals Tribunal.

SUBPART F – REMOTE PILOT AIRCRAFT OPERATOR AND RPA TRAINING ORGANISATION CERTIFICATION

CAR 102.300 RPA Training Requirements

- (1) No RPA training organisation is permitted to conduct training unless it is accepted and granted CAA approval (under CAR-ORA) to provide RPA training.
- (2) Each applicant for the RPA training organization shall establish an exposition manual containing:
 - (a) the corporate commitment of the accountable manager;
 - (b) Forward (organisation policy), Contents, List of Effective Pages, Amendment Record Exposition Distribution;
 - (c) human resource;
 - (d) facility;
 - (e) Material and tool control;
 - (f) Quality system;
 - (g) Instructors;
 - (h) Warehouse.
- (3) The RPA training syllabus shall contain the following aeronautical knowledge but not limited to:
 - (a) Applicable regulations relating to unmanned aircraft system rating privileges, limitations, and flight operation;
 - (b) Airspace classification and operating requirements, and flight restrictions affecting unmanned aircraft operation;
 - (c) Aviation weather sources and effects of weather on unmanned aircraft performance
 - (d) unmanned aircraft loading and performance;
 - (e) Emergency procedures;
 - (f) Human factors;
 - (g) Radio communication procedures;
 - (h) Determining the performance of unmanned aircraft;
 - (i) Physiological effects of drugs and alcohol;
 - (j) Aeronautical decision-making and judgment;
 - (k) Airport operations;
 - (I) Maintenance and preflight inspection procedures;
 - (m) Environment protection.

CAR 102.305 Application for Certification as Remote Pilot Aircraft Operator (ROC)

(1) A person may apply to the CAA, in writing, for certification as an RPA operator.

Note: An application must be in the approved form, include all the information required by these Regulations and be accompanied by every document required by this Regulation.

- (2) An application for certification as an RPA operator must include:
 - (a) details of:
 - i. the applicant's structure and organisation; and
 - ii. its staff and their qualifications and experience (including, in particular, the names, qualifications, experience, duties and functions of the persons who are to be the applicant's chief remote pilot and maintenance controller); and
 - iii. its facilities and equipment; and
 - iv. its practices and procedures; and
 - (a) a general description of the proposed operations, including the type or types of RPA to be operated; and
 - (b) if the applicant proposes to conduct an RPL training course details of the proposed training (see CAR-102.300).

(3) The application must be accompanied by a copy of each of the applicant's manuals relevant to the operation of the RPA.

CAR 102.310 Eligibility for Certification as RPA Operator

(1) The CAA shall certify an applicant as an RPA operator if the applicant is eligible to be certified as an RPA operator in accordance with this regulation.

Note: An application may be made to the Appeals Tribunal (under CAR-15.100) for review of:

- (a) a decision refusing to grant, or cancelling, suspending or varying, a certificate; or
 (b) a decision imposing a condition on a certificate.
- (2) A person is eligible to be certified as an RPA operator if:
 - (a) the person has an organisation and structure that is appropriate for safe operation of RPA; and
 - (b) the person has enough qualified and experienced personnel to undertake the proposed operations safely; and
 - (c) the person has facilities and equipment appropriate to carry out the proposed operations using RPA of the type to be used; and
 - (d) the person has suitable documented practices and procedures to do so, including practices and procedures for the maintenance of the operator's RPAS's; and
 - (e) the person has nominated suitable persons to be its chief remote pilot and maintenance controller.
- (3) A body that is not a legal person is not eligible to be certified as an RPA operator.
- (4) Two or more persons cannot be certified jointly as an RPA operator.

CAR 102.315 Conditions on Certification

- (1) It is a condition of the certification of a person as an RPA operator that the person:
 - (a) maintains within its organisation a position of chief remote pilot having at least the functions and duties set out in CAR-102.320; and
 - (b) employs as its chief remote pilot a person who holds a remote pilot licence under CAR-102.255 and who is competent to carry out those duties and perform those functions; and
 - (c) either:
 - i. maintains a position within its organisation of maintenance controller, with the functions and duties (*see GM to CAR-102.315*), as issued by the CAA from time to time; or
 - ii. has an arrangement with another qualified and competent person to carry out those functions and duties; and
 - (d) if it maintains within its organisation a position of maintenance controller employs as its maintenance controller a person who is competent to carry out the duties and perform the functions of a maintenance controller; and
 - (e) complies with the operator's documented practices and procedures.
- (2) Without limiting CAR-15.100, a condition may:
 - (a) allow the person to operate RPA of only specified kinds; or
 - (b) allow the person to operate RPA only for specified purposes; or
 - (c) limit the areas where the person may operate RPA; or
 - (d) allow the person to operate RPA only in VMC; or
 - (e) limit the number of RPA that an RPA operator may operate.

GM for CAR 102.315(1)(c)(i) Maintenance Controller

Note: This GM only contains the functions and duties of a remotely piloted aircraft (RPA) maintenance controller. It provides the information required to satisfy CAR-102.315 (1) (c) (i).

The functions and duties of a maintenance controller are as follows:

- (1) Ensuring that all maintenance carried out on the operator's RPA systems is carried out in accordance with the operator's approved documented procedures
- (2) Ensuring the personnel carrying out maintenance for the operator are competent to do so
- (3) Maintaining a record of the serviceability or otherwise of the operator's RPA systems
- (4) Ensuring that each item of equipment essential to the operation of the operator's RPA is serviceable
- (5) Maintaining a thorough technical knowledge of the operator's RPA systems
- (6) Investigating all defects in the operator's RPA systems.

CAR 102.320 Functions and Duties of Chief Remote Pilot

- (1) For CAR-102.315(1)(a), the functions and duties of a chief remote pilot are as follows:
 - (a) ensuring the operator's RPA operations are conducted in accordance with the civil aviation legislation;
 - (b) maintaining a record of the qualifications held by each person operating RPA for the operator;
 - (c) monitoring the operational standards and proficiency of each person operating RPA for the operator;
 - (d) maintaining a complete and up-to-date reference library of operational documents required by the CAA under CAR-102.310(1) for the types of operations conducted by the operator.

CAR 102.325 Notice to Certified RPA Operator to Show Just Cause

- (1) The CAA may give a show just cause notice to a certified RPA operator if there are reasonable grounds for believing that there are facts or circumstances that would justify the cancellation of the approval under CAR-102.330.
- (2) A show just-cause notice must:
 - (a) tell the holder of the facts and circumstances that, in CAA's opinion, would justify the cancellation of the certification under CAR-102.330; and
 - (b) invite the operator to show in writing, within a reasonable time stated in the notice, why the certification should not be cancelled.
- (3) A show just-cause notice may state that the certification is suspended if the CAA reasonably considers that there may be a serious risk to the safety of air navigation if the approval were not suspended.
- (4) If a show just-cause notice states that the certification is suspended, the certification is suspended from when the notice is given to the holder.
- (5) The CAA may at any time revoke the suspension.
- (6) If the approval is suspended and the CAA has not dealt with it under CAR-102.330 within ninety(90) days after the day it is suspended, the suspension lapses at the end of that period.

Note: CAR-15.100 provides for review of certain decisions by the Administrative Appeals Tribunal.

CAR 102.330 Cancellation of an RPA Operator's Certification

- (1) The CAA may cancel a certified RPA operator's certification by written notice to the operator, if:
 - (a) The CAA has given to the operator a show just cause notice under CAR-102.325 in relation to it; and
 - (b) The CAA has taken into account any representations made, within the period stated in the notice, by or on behalf of the operator; and
 - (c) there are reasonable grounds for believing that:
 - i. the operator has operated an RPA in contravention of these Regulations or of a condition of the certification; or
 - ii. a person engaged or employed by the operator has operated an RPA negligently or carelessly; or
 - iii. a person engaged or employed by the operator, in operating an RPA, has recklessly endangered human life or property.
- (2) If the CAA has given a show just cause notice under CAR-102.325 to a certified RPA operator, and it decides not to cancel the approval, it:
 - (a) must tell the operator in writing of the decision; and
 - (b) must, if the operator's certification is suspended under that regulation, revoke the suspension.

Note: CAR-15 provides for review of certain decisions by the Administrative Appeals Tribunal.

CAR 102.335 Compliance with RPA Operator's Practices and Procedures

- (1) A person commits an offence of strict liability if the person:
 - (a) is a member of an RPA operator's personnel; and
 - (b) is subject to a requirement under the RPA operator's documented practices and procedures; and
 - (c) does not comply with the requirement.

CAR 102.340 Notice to Operate Very Small RPA for Hire or Reward etc.

- (1) A person shall notify the CAA, in writing, that the person intends to do either or both of the following:
 - (a) operate very small RPA for hire or reward; or
 - (b) conduct operations using very small RPA for hire or reward.
- (2) The notification must be given in the form, and in the manner or way, approved by the CAA.

CAR 102.345 Failure to Give Notice Before Operating Very Small RPA for Hire or Reward etc.

- (1) A person commits an offence of strict liability if:
 - (a) the person operates a very small RPA for hire or reward; and
 - (b) the person has not given a notice to the CAA, in accordance with CAR-102.340, at least five (5) business days before the person first operates a very small RPA for hire or reward.
- (2) A person commits an offence of strict liability if:
 - (a) the person conducts operations using very small RPA for hire or reward; and
 - (b) the person does not hold a certificate as an RPA operator under Subpart F that authorises the person to conduct the operations; and
 - (c) the person has not given a notice to the CAA, in accordance with CAR-102.340, at least five (5) business days before the person first conducts the operation.

CAR 102.350 Notification of Changes in Relation to Operating Very Small RPA for Hire or Reward etc.

- (1) If:
- (a) a person has given the CAA a notice under CAR-102.340; and
- (b) a change, an event or other matter of a kind prescribed by the Guidance Manual for Operation of Remote Pilot Aircraft occurs, that person must notify the CAA of the change, the event or matter within twenty-one (21) business days of the change, the event or matter occurring.
- (2) The notification must be given in the form, and in the manner or way, approved by the CAA.

CAR 102.355 Database of Notifications

- (1) The CAA will establish and maintain a database of information that relates to notifications given under CAR-102.340 and CAR-102.350.
- (2) Without limiting paragraph (1), the database may contain the following information in relation to each notification:
 - (a) the name of the person who gave the notification;
 - (b) the person's contact details;
 - (c) the locations at which the operations will take place;
 - (d) the types of RPA covered by the notification.
- (3) The database may be made publicly available.
- (4) The database may be kept and made publicly available in electronic form.

SUBPART G – ACCIDENT & SERIOUS INCIDENT REPORTING

- 1 Accidents/ Incidents involving the operation of Drone shall be reported to the CAA Flight Safety through the Incident Report. Access to the Incident Report form is available through the CAA Website <u>www.caa.gov.om</u>.
- 2. The following list while not exhaustive includes types of incidents involving Drone Operations, which shall be reported to the CAA on the Incident Reporting system within three (3) days of the accident occurred.
 - Any drone involved in an incident, in which the drone
 - a) Crashes resulting in any injury or fatality to a person, or damage to property;
 - b) Experiences a near miss with a manned aircraft or other Drone;
 - c) Collides with a building or structure;
 - d) Operates without appropriate CAA approval;
 - e) Penetrates controlled airspace without an ATC Clearance;
 - f) Conducts photography without an appropriate security approval;
 - g) Operation which results in a public nuisance.
 - h) Penetrates No Flying Zone without appropriate CAA Approval.
- 3. Any accident or serious incident involving a drone in which anyone sustains moderate injury, or is fatality injured, or if the drone crashes, or operates in a manner where the safety of other aircraft or the public was or are jeopardized, the incident shall be reported immediately to the twenty-four (24) Hour CAA Flight Safety Department using these contact: +968-24354433 or +968-24354011, Customer service on <u>customerservice@caa.gov.om</u> or any other means of connectivity (air-to-ground communications).

The OTSB can be contacted on the Hotline +968 72 1111 35 or by email at <u>OTSB@mtcit.gov.om</u> or via the website <u>www.ita.gov.om</u> then select Transport Safety Office.

The report should include the following information:

- a) Drone remote PIC's name and contact information;
- b) Drone remote PIC's CAA approval certificate number;
- c) Drone registration number issued to the aircraft.;
- d) Location of the accident;
- e) Date of the accident;
- f) Time of the accident;
- g) Person(s) injured and extent of injury, if any or known;
- h) Property damaged and extent of damage, if any or known; and
- i) Description of what happened.
- j) Name and the Signature of reporter.

SUBPART H – EXEMPTIONS

CAR 102.375 Exemption

Pursuant to CAR-10 the CAA may exempt the Drone permit process from some requirements when the risk mitigation is achieved or by an alternative means of compliance but, the exemption shall not deviate the applicant from complying with this regulation.

CAR 102.380 Micro RPA (Drone)

A drone is considered a toy when its mass is not more than 250g (micro) and has no ability to carry special sensors that may be able to collect accurate data and its specifications are very limited. A micro drone is exempted from applying for drone permits but shall adhere to drone operation regulations stipulated in this regulation and in the Civil Aviation Law.

CAR 102.385 For Military Purpose

In coordination with NSA a drone used for military purposes may be exempted from applying for drone permits but shall adhere to drone operation regulation stipulated in this regulation and in the civil aviation law. NSA will contact the CAA to issue a NOTAM as appropriate.

CAR 102.390 RPA Used Inside Closed Buildings.

The drone intended to be used within closed buildings (example Large Halls, shopping stores etc.) is exempted from applying for a drone permit providing adherence to CAR-102.035 in open airspace is applied within the closed building.

SUBPART I – MANUFACTURING OF REMOTE PILOT AIRCRAFT

CAR 102.400 Means of Compliance

- (1) To meet the requirements of CAR-102.405 (1) (a) (ii) for operations for a specific UAS/RPA, the means of compliance shall consist of data (tests, analysis, industry consensus standards) and the results or justification used to demonstrate the UAS/RPA meets the predetermined level of safety the [CAA] has established as acceptable.
- (2) An applicant requesting acceptance of a means of compliance shall submit the following information to the CAA:
 - (a) Detailed description of the means of compliance; and
 - (b) Justification, including any substantiating material, showing that the means of compliance establishes achievement of or equivalency to the predetermined safety level¹.

CAR 102.405 Manufacturer Declaration

- (1) For each model of UAS, the manufacturer shall provide the CAA with a declaration in accordance with paragraph (a).
 - (a) the manufacturer's declaration shall:
 - (i) specify the manufacturer of the UAS, the model of the system, the maximum takeoff weight of the UA, the operations that the UA is intended to undertake and the category of UA, such as fixed-wing aircraft, rotary-wing aircraft, hybrid aircraft or lighter-than-air aircraft; and
 - (ii) specify that the system meets the means of compliance applicable to the operations for which the declaration was made.
- (2) The manufacturer's declaration is invalid if:
 - (a) the CAA has determined that the model of the UA does not meet the terms set out in the means of compliance, or
 - (b) the manufacturer has notified the CAA of an issue related to the design of the model under CAR-102.410.

CAR 102.410 Notice of Technical Changes to the CAA

A manufacturer that has made a declaration to the CAA under CAR-102.405 shall notify the CAA of any issue related to the design of the model of the UAS that results in the system no longer meeting the technical requirements set out in the means of compliance referred in CAR-102.400 para (2)(b), as soon as possible after the issue is identified.

CAR 102.415 Documentation

- (1) A manufacturer that has made a declaration to the CAA in respect of a model of a UAS under CAR-102.405 shall make available to each owner of that model of system:
 - (a) a maintenance program that includes:
 - (i) instructions related to the servicing and maintenance of the system; and
 - (ii) an inspection program to maintain system readiness;
 - (b) any mandatory actions the manufacturer issues in respect of the system;

¹ The manufacturers must demonstrate the minimum safety levels (design and/or technical) of compliance.

- (c) a UAS operating manual that includes the follow but not limited to:
 - (i) a full description of the system;
 - the ranges of weights and centers of gravity (CoG) 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;
 - (iii) 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;
 - (iv) a description of the effects of foreseeable weather conditions or other environmental conditions on the performance of both the system and the UAS;
 - (v) the characteristics of the system that could result in severe injury to crew members during normal operations;
 - (vi) the design features of the system and their associated operations that are intended to protect against injury to persons not involved in the operations;
 - (vii) 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;
 - (viii) procedures for operating the system in normal and emergency conditions;
 - (ix) assembly and adjustment instructions for the system; and
 - (x) provide checklists for pre-start, pre-takeoff, after takeoff, pre-landing and after landing/shutdown (See GM to CAR-102.415(1)(c)(x)).

GM to CAR 102.415 (1)(c)(x)

Suggested checklists for each stage of operation are as follows, but not limited to:

<u>Pre-Start checklist</u>

- (1) Weather conditions will allow safe flying and completion of mission;
- (2) CAA approvals have been granted (if required);
- (3) Confirm NOTAM is issued and operations are within the approved time-period;
- (4) Contact ATC to advise commencement of operation and confirm:
 - (a) Callsigns to be used;
 - (b) Area of operation;
 - (c) Any expected delays to commencement of operations;
- (5) Check RPA Logbook for the following:
 - (a) Time-in-service;
 - (b) Maintenance history;
 - (c) Any defects and abnormalities that affect operations;
 - (d) Any incidents or accidents;
 - (e) Any other useful information that may affect the safety of future flights with the RPA.
- (6) Check RPA for the following:
 - (a) Engines (electric, hybrid or others) are securely fitted to aircraft;
 - (b) Condition of propellers;
 - (c) Propellers are securely fitted to engines;
 - (d) Battery state of charge and condition.
- (7) Flight plan data entry (if required);
- (8) Switch transmitter ON, then receiver ON.
- (9) Check that all controls operate freely and in the correct sense.
- (10) Check that all control surfaces are in their correct positions with the transmitter trims at neutral.

- (11) Confirm emergency procedures:
 - (a) Engine/propeller failure;
 - (b) Loss of data link;
 - (c) Loss of control;
 - (d) Failure of navigation equipment;
 - (e) Airframe damage.
 - Note: Emergency procedures may include the use of recovery or fail-safe devices, such as parachutes, that help to mitigate the risk of injury to people or damage to property. The CAA encourages the use of such recovery devices when they are available for the RPA type. Where an RPA is fitted with a recovery device such as a ballistic parachute system including a pyrotechnic charge, it must be compliant with dangerous goods regulations (CAR-92). The relevant area or panel on the RPA should be clearly marked to warn crew of the potential danger.

After start Check list

- (1) Look for any minor radio malfunctions such as slow or 'jittery' servos, glitches etc. If in doubt, do not fly.
- (2) After starting hold the RPA in a horizontal position for ten or fifteen seconds and check engine operation at full power and recheck all flying controls.

Pre-takeoff Check list (be SMART)

- (1) <u>S</u>witches on;
- (2) <u>M</u>eters in the green (for FM transmitters)
- (3) <u>Aerials secure and extended;</u>
- (4) **<u>R</u>ate switches in all correct positions; and**
- (5) <u>Trims all in correct position</u>.
- (6) ATC clearance granted for operations to commence (if applicable).
- (7) Final approach and Takeoff paths are clear.
- (8) Final wind check.

After takeoff Check list

- (1) UAS is operating as per control inputs;
- (2) Operate as per the planned details for the flight;
- (3) Maintain visual line of sight; and
- (4) Ensure battery levels allow for a return to departure point.

Pre-landing checklist

- (1) Check wind direction and speed to ascertain crosswind component;
- (2) Final approach and missed approach paths are clear; and
- (3) Ensure landing area is clear of personnel and other UAS that may have rotors in motion.

After landing checks

- (1) Engine shut down is conducted immediately;
- (2) Advise ATC of operation completed (if required);
- (3) Turn OFF transmitter and receiver units;
- (4) Inspect UAS for any damage possibly sustained during flight;
- (5) Check battery states/levels;
- (6) Disassemble UAS as per manufacturer's instructions; and
- (7) Log flight time in the maintenance log and the pilot's log book.

CAR 102.420 Record Retention for Manufacturer

- (1) A manufacturer that has made a declaration to the CAA in respect of a model of a UAS under CAR-102.405 shall keep, and make available to the CAA on request:
 - (a) a current record of all mandatory actions in respect of the system; and
 - (b) 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 system meets the technical requirements applicable to the operations for which the declaration was made.
- (2) The manufacturer shall keep the records referred to in para (1) (a) above for the greater of:
 - (a) two years following the date that manufacturing of that model of UAS permanently ceases, and
 - (b) the lifetime of the UA that is an element of the model of system referred to in para (1) above.