

## UON Key Risk Area: KRA 1.11

### Remotely Piloted Aircraft (Drones) Use and Operation

#### 1. Purpose

This procedure describes how the University meets its obligation to ensure the health and safety of operators, controllers and bystanders when undertaking operation of a Remotely Piloted Aircraft (RPA) and also known as Unmanned Aerial Systems, commonly named Drones), as part of a University of Newcastle activity.

#### 2. Scope

This document applies to all faculties, divisions, and organisational units of the University of Newcastle and its controlled entities who are planning and undertaking activities using a RPA.

#### 3. Definitions / Abbreviations

In the context of this document, the following definitions apply:

**RPA:** Remotely Piloted Aircraft (also known as Drones)

**UAS:** Unmanned Aerial System (also known as Drones)

**CASA:** Civil Aviation Safety Authority

**UOC:** Unmanned Operators Certificate

**RPC:** Remote Pilot Certificate

**CASR:** Civil Aviation Safety Regulations

**Operator:** The person or entity that owns or has oversight of the operations of the RPA holds a UOC

**Controller:** The person who is controlling the flight of an RPA and holds a RPC

**Line of Sight Operations:** Able to see the vehicle at all times while it is airborne

**Leaders/Supervisors:** Any member of the University who is responsible for supervising staff and/or undergraduate or postgraduate students and/or leading research projects

**Workers:** As defined in the NSW Work Health & Safety Act 2011. Workers include employees, conjoints, students on work experience, contractors, sub-contractors and their employees. Staff, conjoints, students on work experience, and contractors may be referred to collectively as workers, or separately as staff, conjoints, students, or contractors.

## 4. Responsibilities

### 4.1 Leaders/Supervisors

Leaders/supervisors are responsible for ensuring that:

- Where required the organisation governing the RPA flight operation holds a UOC;
- All controllers of the RPA hold a current Remote Pilot Certificate, or RPA Controllers Certificate, with appropriate ratings required for the specified flight operations;
- The UOC holder has a current public liability insurance certificate which covers flight operations;
- A risk assessment is completed prior to the first flight for each project or activity and the risk assessment is repeated when there are changes to the original project or activity;
- Appropriate risk controls have been implemented to mitigate the risks of the planned flights identified from the risk assessment;
- The controller provides a safety briefing to all workers involved in the operational flights, including observers who are not directly involved in the flight operation;
- Incidents and accidents are reported immediately and entered into the University's online incident reporting system;
- These procedures are implemented and compliance is monitored to ensure the health and safety of all persons involved in RPA activities;
- Guidance documentation such as manuals and instructions are made readily available to all persons who may need them;
- Records of all commissioning, inspections, testing, certifications and registrations are maintained and readily available to anyone who uses, or has reason to verify that these requirements have been undertaken;
- All required exemptions or permits are obtained and kept on record.

### 4.2 Health & Safety (H&S) Team

- Provide advice to the University community when required in regard to the safety requirements for RPA activities;
- Provide input to the review of safety risk assessments for RPA activities through the Safety Review process.

### **4.3 Controllers / Workers operating or involved in operating RPA**

Controllers and all other workers involved in RPA activities will:

- Ensure the equipment and the flight plans are reviewed by a person or business with an Unmanned Operators Certificate (UOC);
- Hold a Remote Pilot Certificate or RPA Controllers Certificate for the vehicle being flown and any ratings required for the given flight conditions;
- Undertake risk assessments prior to planned RPA activities and have those assessments reviewed by suitably competent people, and through the Safety Risk Assessment Review process.
- Follow all RPA flight rules and federal aviation laws governing the operation of RPAs;
- Ensure all appropriate approvals are obtained for operations beyond line of sight, above 400 feet, within a controlled airspace, over populated areas or near an airport, aerodrome or heliport/helipad. (NOTE: Callaghan is within the zone classed as near a heliport/helipad);
- Ensure that the aircraft and its control systems (including ground station systems) are in good working order and suitable for the flight operations to be conducted;
- Attend instruction and training sessions relating to use and maintenance of any equipment used for RPA activities.

## **5. Procedure**

### **5.1 Regulatory Requirements – Registration through CASA**

- The Civil Aviation Safety Authority (CASA) regulate the activities of RPA's. This regulation includes the following activities:
  - Licencing of RPA's;
  - Certification of controllers;
  - Certification of Operators;
  - Issuing of exemptions; and
  - Development, review and implementation of the requirements.
- The University of Newcastle holds an Aviation Reference Number. The ARN is 224496 and this should be used whenever there is correspondence between the University of Newcastle and the Civil Aviation Safety Authority.

## 5.2 Mandatory Requirements

The following certificates and documentation is mandatory before any RPA flight operation can be approved by the UOC, and before the operations can be insured:

- **Unmanned (or RPA) Operator's certificate (UOC):** To operate an RPA greater than 2kg (including vehicle and payload) for non-recreational purposes, which includes all operations undertaken by the University of Newcastle, an organisation must hold, or be operating under, an RPA Operator's Certificate (UOC) and with the approval of the Chief Pilot for that UOC.

Organisations holding a UOC are listed on a public register maintained by CASA:  
[http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC\\_100959](http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_100959).

The University of Newcastle does not hold a UOC, so operation of any University activity involving an RPA that is greater than 2kg (including the payload), must be carried out by a pilot holding a Remote Pilot Certificate, operating under the coverage of a UOC held by a third party organisation.

Any RPA flight operation conducted by a University staff member or student, or by any person acting on their behalf, who does not hold the appropriate CASA certifications, are not legal and are strictly prohibited. Additionally, all such operations are not covered by UON's public liability insurance certificate.

- **Remote Pilot Certificate or RPA Controller's Certificate:** Each person who controls an RPA, including the pilot, navigator or radio operator, must hold a Remote Pilot Certificate or a RPA controller's certificate. This will include all appropriate ratings or qualifications required for the given flight operations and the person's role. If the relevant persons are under instruction in RPA flight operations they must be at all times directly supervised by a person satisfying the above requirements who has been approved by CASA as an RPA instructor.

Further details can be found on the CASA website  
[http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC\\_101985](http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_101985).

- **Current public liability insurance certificate:** The University of Newcastle requires that a current public liability insurance Certificate of Currency for the UOC is included in the documentation for risk assessment. As UON does not currently hold a UOC, RPA flight operations cannot be insured under the University's public liability insurance certificate. Advice from the University Insurance office is that public liability insurance cover needs to be in the order of \$20 million.

### 5.3 Risk Management

Prior to any RPA activities being undertaken the hazards and risks of the operation must be assessed and appropriate risk controls identified and implemented.

- **Hazard Identification:** All reasonably foreseeable hazards to health and safety arising from RPA activities must be identified. Major considerations should include:
  - Suitability and condition of the equipment and accessories for the particular task;
  - Skills, knowledge and certification of the people involved in the activity;
  - Environmental conditions;
  - Foreseeable abnormal situations, misuse and fluctuation of conditions;
  - Ergonomic needs relating to transport of equipment and people;
  - Location in the activity.
- **Risk assessment:** A requirement for a business to hold a UOC is an Operations Manual, which includes reference to a risk assessment procedure to be followed for all operations. The University of Newcastle's risk assessment process is consistent with this requirement and this stipulates that, irrespective of the mass of the vehicle, a risk assessment will be undertaken before any RPA activity. When the risk assessment has been completed it will be submitted with a [Safety Review](#) application for the Health and Safety team to provide input if necessary.

The risk assessment must consider items such as:

- Suitability of weather (particularly with regards to the performance envelope of the vehicle);
- Maintaining a 30m separation zone at all times from vehicles, boats, buildings or people who are not directly involved in the flight operation;
- Suitable take-off and landing areas (including alternate landing area) clear of obstructions;
- General obstructions e.g. buildings, trees, towers;
- Ability to maintain visual line of sight;
- Gaining permission from land owner/manager of the site where the flight is proposed e.g. Local Councils, private property, mine sites, and consideration of any restrictions imposed as part of this approval;
- Visual privacy during flights and noise disturbance from engines;

- Risk to people and property in the event of a crash, or any object falling from the aircraft during flight;
- Other safety risks not involving the aircraft such as traffic, falls, accessing the site, animals and isolation of the activity;
- A visual inspection of the equipment and the associated environment;
- Consultation with activity participants;
- An analysis of injury and incident data from previous activities.

Attachment 1 is a checklist that can be used to ensure all the requirements are implemented to permit the use of a RPA in line with the University's and legislative requirements. This checklist should be attached to the Safety Review application.

#### **5.4 Flight Operation**

The following information provides details for flight operations.

A sheet with a summary of the requirements to fly a RPA is provided at Attachment 2 to this document. This can be used to provide a high level overview to students and others who may be considering using a RPA in their research, assignments or other activities.

- **Indoor flights:** Flight operations indoors are not governed by the CASA Regulations and therefore do not require a certified pilot or UOC. However, these operations are governed by other legislation such as the NSW Work Health and Safety Act and the Privacy Act and must be considered a high risk activity involving moving plant. As such, a risk assessment must be completed and reviewed before the activity commences.
- **Outdoor flights using vehicles over 2kg (including payload):** The following points must be considered for all outdoor flight operations planning and adhered to during each flight.
  - **The Pilot:** Must hold a current RPA Controllers Certificate or a Remote Pilot Certificate for the aircraft to be used and be operating under a current RPA Operators Certificate (UOC). The pilot must comply with all operational documents and policies governing the specified flight operations;
  - **The Aircraft:** Must be registered with CASA through the Operator. Other restrictions:
    - Must not exceed 120 meters (400 feet) altitude above ground level, except with CASA approval;

- Must not fly within 30m of vehicles, boats, buildings, structures or people not directly involved in the operation of the aircraft;
  - Must not fly over any populous area e.g. beaches, backyards, parks, or sports ovals where there is a game in progress;
  - Must not be flown within 5.5km (3 nm) of any registered airfield, aerodrome or heliport/helipad without an exemption from CASA in place. (NOTE: Callaghan is within this range of a helipad)
- **Vehicles under 2kg including payload:** Use of vehicles that are under 2kg including their payload are not required to operate under a UAC and the vehicle does not need to be registered with CASA. Conditions for operating these vehicles can be found on the CASA website <https://www.casa.gov.au/standard-page/commercial-unmanned-flight-remotely-piloted-aircraft-under-2kg>.

Note, that the University's Risk Management process for the activity including the flight is required irrespective of the mass of the vehicle.

- **Safety Briefing:** A safety briefing must be provided to all participants to explain logistical and safety arrangements before the flight. The briefing should cover the contents of the risk assessment and any other relevant details and should include:
  - Clearly defining the roles and responsibilities of all persons involved in the activity;
  - Information about safety requirements and procedures;
  - Potential hazards that may be encountered and the control measures that must be employed;
  - Emergency procedures;
  - Explaining to bystanders the nature of the task, and the requirement for them to remain outside the 30 metre exclusion zone (this may require specific crowd control personnel to maintain this separation).

## 6. Maintenance

- All equipment used or planned to be used for RPA activities is to be maintained in line with manufacturers' instructions.
- All equipment is to be cleaned upon return from an activity and stored in a manner to avoid damage.

- As a part of the preparations for RPA activities, the equipment is to be inspected, and where there is any damaged equipment, it is to be repaired, disposed of or clearly marked as Out of Service to avoid the risk of inadvertent use.
- All instructions from the manufacturer, including the maintenance schedules and replacement of parts and batteries shall be undertaken and the records stored.

## 7. References

[NSW Work Health and Safety Act 2011](#)

[NSW Work Health and Safety Regulations 2011](#)

[UON H&S Management System Framework](#)

[UON HSP 2.1 Regulatory Requirements](#)

[UON HSP 2.2 H&S Responsibilities](#)

[UON Health and Safety Procedure HSP 4.1 Risk Management.](#)

Civil Aviation Safety Regulations (CASR, 1998), administered by the Civil Aviation Safety Authority [http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC\\_100374](http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_100374)

Specifically, Part 101: Unmanned Aircraft and Rocket Operations  
([http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC\\_91039](http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_91039))

[Privacy Act 1988](#)

## Attachment 1.

Use of a Remotely Piloted Aircraft (RPA) Pre-Operations Checklist		
1	RPA vehicle name and type:	
2	RPA Vehicle registration:	
3	Controllers name:	
4	Controllers certificate number:	
5	Project / activity title:	
6	Operators name:	
7	Operators registration number:	
8	CASA exemptions in place:	
9	Location of the project / activity:	
10	Dates planned to undertake the project /activity:	
11	Other people involved in the project / activity and their roles:	
12	Qualifications or skills these people have to perform their role;	

## Attachment 2

# INFORMATION SHEET

## Use of Remote Piloted Aircraft (Drones) at the University of Newcastle

### Background

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The use of RPA (drones) in Australia is increasing in activity. While these vehicles can be valuable in many and varied ways, there are a number of legislated requirements that need to be met to operate legally and safely. The following sets out the minimum standards for staff, students and visitors. For all the health and safety procedures and information, see [KRI 1.11](#).

### Summary of requirements

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Vehicles are not permitted to operate on University grounds or for University activities unless approval has been granted through the Safety Review process by the Health and Safety team. This includes for research, teaching or other work activities. To be permitted to operate, the vehicles must meet all the legislative requirements of CASA and NSW SafeWork. These include but are not limited to:

For vehicles weighing less than 2 kg (including payload such as cameras)

- the RPA is operated:
  - by *visual line of sight (VLOS)* only - close enough to see, maintain orientation and achieve accurate flight and tracking without the use of aids such as binoculars
  - *no higher than 120 m (400 feet)* above ground level
  - during *daytime only*- not after sunset
- the RPA is **not** operated:
  - *any closer than 30 m* from people not associated with the flight
  - in a *prohibited area* or *restricted area*
  - in a *restricted area* that is classified as RA3
  - *over populous areas*
  - *within 5.5 km (3 NM) of a controlled aerodrome* - one with an operating control tower
  - *in the area of a public safety operation* without the approval of a person in charge of the operation
- **only 1 RPA** flown per pilot at any one time (in addition to the above)

For vehicles 2 kg or greater the RPA must be operated:

- by a person who is licenced (holds a Remote Pilot Licence - RePL)
- is using a registered vehicle
- is under the direction and instruction of a person who holds a Remotely Piloted Aircraft Operators Certificate. (ReOC)

**NOTE: All Remote Piloted Aircraft vehicles are required stop flying and to land whenever the pilot sights any manned flying vehicle such as an airoplane or helicopter in the air.**

In addition to the above CASA legislation, the Work Health and Safety legislation also applies. This requires an application for the UON Safety [Risk Assessment Review](#) to be completed and submitted. (Prepared July 2018)