

Monash University Procedure

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| Procedure Title | Remotely Piloted Aircraft (RPA)/Drone Safety Management Procedure |
| Parent Policy | OHS Policy |
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| Procedure Owner | Manager, OH&S |
| Category | Operational |
| Version Number | 3 |
| Content Enquiries | Bernadette.hayman@monash.edu |
| Scope | <p>This procedure applies to all staff, students, visitors and contractors using RPA for Monash University activities, both on and off Monash Campuses.</p> <p>Exclusions:</p> <ul style="list-style-type: none"> This procedure is written to align with the requirements of the Monash University Occupational Health and Safety Management System and is not a comprehensive list of RPA compliance requirements. For additional information, please visit the Civil Aviation Safety Authority webpage. This procedure does not include operations outside of Australia. Where international operations occur, the licensed Pilot must adhere to local Aviation legislation and regulations. If local regulations do not exist, Civil Aviation Safety Regulations (CASR) should be followed by way of best practice. <p>NOTE:</p> <ul style="list-style-type: none"> Additional responsibilities related to RPA usage may be stipulated through CASA communications with the Chief Remote Pilot and communicated to stakeholders or documented in any applicable ReOC utilised by Monash University. Recreational of RPA is not permitted on Monash University campuses. 'Sport' RPAS Operations are not permitted unless authorised by the Chief Remote Pilot. |
| Purpose | To detail the responsibilities and actions required to manage all RRPAS Operations conducted by or on behalf of Monash University. |

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1. Abbreviations

| | |
|--------|---|
| CASA | Civil Aviation Safety Authority |
| GOC | General Operating Conditions |
| AP-OCR | Authorised Remote Pilot – Off Campus Research |
| AP-OC | Authorised Remote Pilot – On Campus and Chief Pilot |
| ARN | Aviation Reference Number |
| RPAS | Remotely Piloted Aircraft System |
| ReOC | Remotely Piloted Aircraft Operators Certificate |
| RePL | Remote Pilot License |
| RP | Remote Pilot |
| RPA | Remotely Piloted Aircraft |
| SOC | Standard Operating Conditions |
| RA | Restricted Airspace |

2. Definitions

A comprehensive list of definitions is provided in the [Definitions tool](#). Definitions specific to this procedure are provided below.

General Operating Conditions: General Operating Conditions (GOC) are a list of flight requirements applicable to all and any RPA flight activity and are stipulated by Monash University.

Remotely Piloted Aircraft System: The Remotely Piloted Aircraft System encompasses the governance, management, documentation, certificates and licenses associated with RPAS Operations conducted by Monash University, as derived from CASA regulatory requirements. This also includes the technology and hardware associated with any RPA.

Remotely Piloted Aircraft: Remotely Piloted Aircraft (RPA) includes Drones, Unmanned Aerial Vehicles (UAV), Unmanned Aerial System (UAS), Remotely Piloted Aircraft Systems (RPAS) or First Person View (FPV) aircraft, regardless of size, ability to carry a payload or type of powertrain. It includes any contrivance invented, used or designed to navigate or fly in the air that is operated without the possibility of direct human intervention from within or on the aircraft.

Standard Operating Conditions: Standard Operating Conditions (SOC) are a list of flight requirements applicable to all and any RPA flight activity and are stipulated by CASA.

Restricted Area: These are temporary or permanent areas of airspace where RPA flights may be permitted at the expressed approval of the controlling authority or CASA. This may include, but is not limited to:

- Aerodromes;
- Non-instrument helicopter landing sites;
- Instrument helicopter landing sites;
- Military areas.

Education and Training: Flight operations that are specifically for aspiring RPA Pilots or existing RePL holders to obtain practical experience using RPA/Drones and related hardware.

3. Licensing

3.1. RePL Licensing

Unless noted, all flights conducted on behalf of Monash University both on and off campus require licensed Pilots to hold a current CASA issued RePL and Aviation Reference Number (ARN). RePL holders may only conduct flights if they are listed on the Monash University approved RePL flight register managed by the Authorised Remote Pilots.

3.2. Off Campus Research Flights

The AP-OCR may approve off campus RPA research operations to be conducted by Remote Pilots (RP) who are yet to obtain their RePL, subject to the following conditions:

- The unlicensed research RP has a [CASA registered Aviation Reference Number \(ARN\)](#);
- The unlicensed research RP is operating an RPA weighing less than 2kg (including any payloads, cameras, etc.);
- The unlicensed research RP can demonstrate to the AP-OCR documented competence in the safe operation of RPA via knowledge, experience, and associated training;
- The unlicensed research RP has a minimum 5 hours supervised flight training documented in their flight logs;
- Operations are conducted in accordance with the [CASA Standard Operating Conditions](#); and
- Notification of flight is provided to CASA via the AP-OCR at least 5 days prior to flight.

Research flights conducted in accordance with 'Section 6.2 – Flying Indoors' for the purpose of RPA hardware and software testing and validation does not require a licensed RP. Other research flight exemptions may be granted upon request to the AP-OCR and subject to a formal documented approval from CASA.

3.3. Exemptions

Individuals using RPA/Drones for Monash University authorised sporting activities are exempt from the requirement to hold a valid RePL and ARN. This exemption must be sought and obtained through the On-campus Chief Remote Pilot.

4. Recording of Flight Details

4.1. Flight Logs

RP are required to keep a documented record of all their RPAS Operations via individual RP flight logs. Copies of the submitted '[RPA/Drone Flight Proposal eFrom](#)' and associated documents may be collated and used by RP for flight logs purposes.

Flight logs detail:

- Flight location, date, time, purpose of activity and actual hours flown;
- Details of any Supervising RP (name, contact details, etc. if conducting education and training activities);
- RPA and equipment/configuration used for flight;
- The applicable S.A.R.A.H. risk assessment reference number.

If preferred, additional tools have been developed to assist RP record their flight activities, located via the OH&S '[Remotely Piloted Aircraft \(RPA\)/Drones](#)' webpage.

5. Education and Training

Education and training flights conducted by aspiring or licensed RP are subject to the approval of the Authorised Remote Pilots and adherence to the noted requirements:

- RP conducting education and training operations must be directly Supervised by an appropriately licensed RP for the duration of the activity;
- RP may conduct education and training flights for a maximum of 12 months or 50 hours documented flight time prior to obtaining or updating RePL certifications.

Education and training flights may be approved by the AP-OC/AP-OCR to enable RP to:

- Obtain a minimum 5 hours supervised practical RPA/Drone flight experience;
- Conduct operations for skill and competency development using RPA that is not specified in their RePL;
- Participate in training activities for the granting of a RePL or additional license; competencies by a CASA certified training provider and supervising licensed RP; and
- Test new RPA designs or hardware modifications to RPA that may affect RPA operability.

6. Flight Restrictions

6.1. Non-Controlled Aerodromes

All RePL holders must adhere to the requirements noted in the following table while operating on Monash University grounds unless clearance is provided by the Chief Remote Pilot or Authorised Remote Pilots. For reference purposes, the height of the Menzies building on the Clayton campus is 48 meters.

| Campus | Requirements | Reason for Requirements |
|-----------|--------------------------|--|
| Clayton | No flights above 45m | Monash Medical Centre Emergency Services non-instrument helicopter landing site. |
| Parkville | No flights above 45m | City non-instrument helicopter landing site. |
| Peninsula | No flights | Frankston Hospital non-instrument helicopter landing site. |
| Berwick | No flights above 45m | Casey Hospital non-instrument helicopter landing site. |
| Caulfield | No airspace restrictions | Adhere to SOC/License requirements. |

Exemptions to these height restrictions may be sought through correspondence and risk management through the AP-OC. Authorisation is at the discretion of the AP-OC.

6.2. Controlled Aerodromes

Flights are not permitted in the following areas unless approval has been obtained from the Chief Remote Pilot, regardless of contractor CASA exemptions:

- Aerodromes;
- Non-instrument Helicopter Landing Sites;
- Instrument Helicopter Landing Sites;
- Military Sites.

It is the responsibility of the RP to determine if operations will be conducted in proximity to any controlled, restricted or prohibited airspace and plan for CASA clearances via the Chief Remote Pilot or Authorised Remote Pilots. The locations of restricted areas are marked on aeronautical charts with contact details of controlling authorities able to be obtained from the [Airservices Australia En Route Supplement Australia \(ERSA\)](#).

Flying in certain airspace requires RP to use Aeronautical Radios to monitor air traffic and be holders of an Aeronautical Radio Operator Certificate. [For additional information on these requirements, please contact CASA.](#)

6.3. **Flying Indoors**

Indoor flights require appropriate risk management and a completed S.A.R.A.H. risk assessment. Any deviation from the noted conditions should be highlighted, risk managed and approved in consultation with the Authorised Remote Pilots prior to any proposed flight.

Indoor RPAS Operations are permitted providing the following criteria are adhered to:

- RPA must not be operated in a manner that creates a unreasonable hazard to another aircraft, person or property;
- 30 meters of separation distance must be maintained between RPA in operation and people;
- Flights are not conducted over any populous areas.

7. **Documentation**

7.1. **Online Notification and Authorisation for Flight**

All flights must be registered via the pre-flight notification online form. Risk assessment, flight plan and (if applicable) CASA exemptions are required when:

- The RPA Aircraft weighs more than 2kg;
- Operations are conducted outside the scope of the Monash University GOCs;
- CASA authorisation is required for RPAS Operations that do not conform to CASA SOC.

All flights must follow the process detailed in Appendix 1 for flight notification and approvals.

7.2. **Risk Management Specifications**

All flights conducted on or off campus must be appropriately risk managed as per the Monash University [OHS Risk Management Procedure](#). All risk management strategies must consider the Information Sheet, 'RPA Risk Management and Control', in their creation.

7.3. **RPA Flight Risk Management Example**

An example risk assessment template for the operation of RPA is available via the Monash University risk management module in S.A.R.A.H., (Ref. number 2177, 'Example Remotely Piloted Aircraft (RPA)/Drone/Unmanned Air Vehicles (UAV) Risk Assessment'). The assessment notes common hazards associated with RPAS Operations and provides examples of suitable risk controls. While the assessment can be used to assist with safety management of RPA flights, any formalised risk assessment should be specific and reference the RPAS Operations being conducted by the RP.

For additional information, please contact [Monash University Occupational Health & Safety](#).

7.4. **Flight Plan**

A flight plan must be completed as part of pre-flight activities. The Authorised Remote Pilot uses flight plans and additional pre-flight information to determine adequacy of flight planning, suitability of safety risk controls and activity compliance with CASA requirements (restricted flying zones, GOC conditions, etc.). The plan must include:

- A satellite photo or map of the area where the RPA flight is to be conducted;
- Proposed RPA flight paths and/or zones, take off, landing and emergency zones;
- Required pedestrian barriers, signs and demarcation zones;
- Flight segregation measurements that adhere to GOC;
- Pilot information and contact details.

Example flight plans and a template is provided via the Monash University OH&S tools, noted in 'Section 11 - Tools' of this procedure.

7.5. Pre-Flight Checklist & Post Flight Summary

A pre-flight checklist and post flight summary must be completed by the RP conducting RPAS Operations. The checklist is used by the RP to confirm the airworthiness of the RPA immediately prior to flight. An example pre-flight checklist with a post flight summary is provided in 'Section 11 – Tools' of this procedure. The checklist may be modified to list technical checks to be conducted on RPA specific to the type, configuration and any specific information available from the RPA manufacturer related to pre-flight checking and validation.

A post flight summary completed by the RP should detail any issues experienced during flight, (breach of pedestrian segregation, technical malfunction of RPA, flight crew communication issues, etc.), potential operational improvements to be considered for future flights or any additional information. An example post flight summary is included in the previously noted pre-flight checklist. Any issues identified during post flight activities should be reported to the Authorised Remote Pilot.

8. Contractor Engagement

All contracted RP must hold a CASA issued RePL and must operate under an approved ReOC. The following items and information must be obtained and verified by the Monash University staff member who has organised the contractor and is supervising the flight. Contractors must provide copies of:

- CASA RePL and ReOC certificates;
- Confirmation of Insurance for RP and RPAS Operations;
- Flight Specific Job Safety Assessment and a completed Flight Plan;
- Any CASA flight approval or RA clearance documentation relative to the proposed flight.

All contractors must complete the Monash University contractor induction through BPD prior to conducting operations if unaccompanied during RPAS Operations.

All contractor flights must follow Appendix 1. Submissions for flight notification or authorisation must be submitted by the Monash University representative engaging the contractor.

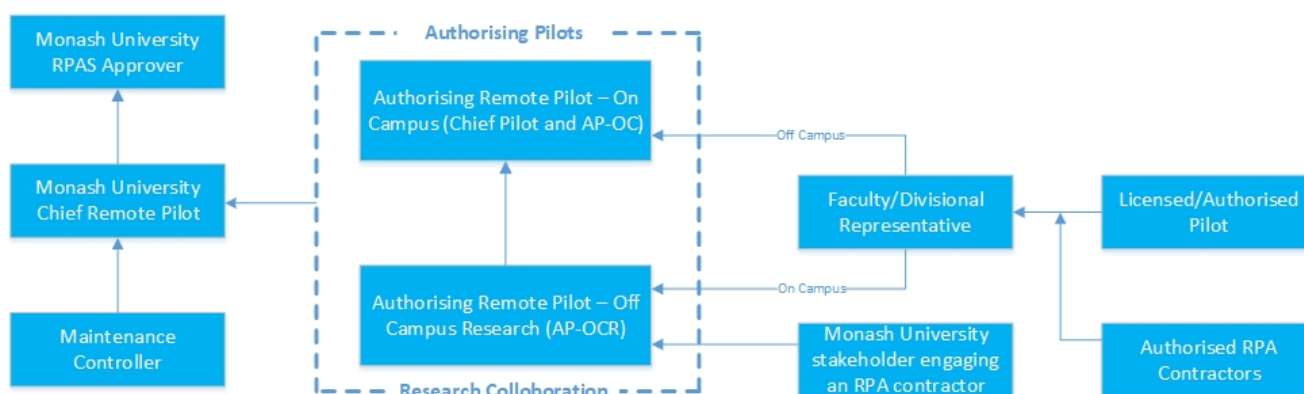
9. Privacy

All RPAS Operations must consider privacy concerns as part of pre-flight planning activities. Any issues must be managed and included in compiled flight documentation. Additional information can be obtained from the [Monash University Privacy Office](#).

10. Responsibility for Implementation

A comprehensive list of OHS responsibilities is provided in the document [OHS Roles, Committees and Responsibilities Procedure](#). The specific responsibilities with respect to RPA Safety Management are provided below:

Organisational Structure: All RPAS Operations must adhere to the organisational structure noted in the below figure, in addition to the roles and responsibilities listed in this procedure.



Monash University RPAS Approver: The Monash University RPAS Approver is responsible for engaging and consulting with Monash University RPA stakeholders during appointment of the following roles:

- Monash University Chief Remote Pilot
- Authorised Remote Pilot – Off Campus Research (AP-OCR);
- Authorised Remote Pilot – On Campus (AP-OC);
- RPAS Maintenance Controller.

In consultation, the Monash University RPAS Approver must notify CASA of any variance to the appointment of the Chief Remote Pilot and ensure mechanisms are available for the transfer of duties to an alternative RP, if the individual in the Chief Remote Pilot position becomes unavailable or is unable to fulfil their duties.

In consultation with the Chief Remote Pilot, AP-OCR and AP-OC, the Monash University RPAS Approver ensures the following Monash University RPAS elements are established and maintained:

- CASA approved Monash University ReOC, comprising of -
- RPAS Operations Manual;
- RPAS Maintenance Manuals;
- RPAS Flight Manuals.

Monash University Chief Remote Pilot: The Monash University Chief Remote Pilot is the representative and central conduit for all inquiries, information and communications with CASA. The Chief Remote Pilot must:

- Have an overview of all RPAS activities within Monash University and ensure all operations are conducted in accordance with CASA regulations or exemptions arranged in consultation with CASA;
- Develop and maintain the Monash University ReOC, including:
 - RPAS Operations Manual;
 - RPAS Maintenance Manuals;
 - RPAS Flight Manuals.
- Provide supervision, assistance and support to the AP-OCR, AP-OC and the RPAS Maintenance Controller;
- Ensure the Monash University ReOC operational status is maintained through the provision of safe systems of work, CASA RPA documentation and any legislation compliance requirements.

Authorised Remote Pilot – Off Campus Research (AP-OCR):

- Oversee all off campus research RPAS operations in accordance with this procedure;
- Ensure all licensed RP conducting research RPAS Operations follow requirements in accordance with this procedure;
- Consult with the AP-OC on operations for on campus research RPA activities;
- Consult with, and obtain approval from the Chief Remote Pilot for all operations conducted outside the scope of the CASA SOCs and the Monash University ReOC;
- Investigate all research RPA incidents and instances of RPAS non-compliance, reporting to the Monash University Chief Remote Pilot and utilising the Monash

- University Safety And Risk Analysis Hub (S.A.R.A.H.) for incident and hazard reporting;
- Ensure all RPAS Operations are risk managed and provide advice and support to RP conducting RPA activities.

Authorised Remote Pilot – On Campus (AP-OC):

- Oversee all on campus non-research RPAS operations in accordance with this procedure.
- Ensure all licensed RP conducting on campus RPAS Operations follow requirements in accordance with this procedure;
- Consult with the AP-OCR for off campus non research RPAS Operations;
- Consult with, and obtain approval from the Chief Remote Pilot for all operations conducted outside the scope of the CASA SOCs and the Monash University ReOC;
- Investigate all non-research RPA incidents and instances of RPAS non-compliance, reporting to the Monash University Chief Remote Pilot and utilising the Monash University S.A.R.A.H. for incident and hazard reporting;
- Authorise only safe RPAS Operations and provide technical advice and support to RP conducting Monash University activities.

Faculty/Divisional RPAS Representative:

- Have oversight over their specific areas RPAS Operations and conduct activities in accordance with the Monash University RPAS procedures;
- Ensure all area RP follow the requirements outlined in this Procedure;
- Ensure all area flights incorporate OHS risk management to ensure safe RPAS Operations;
- Report all non-compliance and incidents relating to RPAS operations to the applicable Authorised Remote Pilot;
- Participate in RPA investigations related to RPAS non-compliance and incidents at the request of the Authorised Remote Pilots.

RPAS Maintenance Controller:

- Devise, implement and record maintenance plans and schedules for RPA (including peripherals and batteries) that adhere to the requirements noted in the Monash University ReOC, Operations, Flight and Maintenance manuals;
- Provide advice and support to RP and Faculty/Divisional RPAS Representatives to ensure RPA are maintained and fit for purpose;
- Adhere to any additional position requirements stipulated by CASA and/or the Monash University ReOC.

Remote Pilot:

All Pilots conducting RPAS Operations must:

- Hold and maintain an RePL certificate;
- Conduct all RPAS Operations in accordance with CASA and license specifications;
- Adhere to any advice, information or instruction stipulated by the Authorised Remote Pilot associated with RPA flights and the RPAS, including items identified during pre-flight planning activities;
- Submit all required notifications and documentation to the applicable Authorised Remote Pilot before commencing a flight;
- Report all RPA incidents to the applicable Authorised Remote Pilot and (if applicable) the Faculty/Division RPAS Representative.
- Document flight incident reports via S.A.R.A.H.;
- At the request of the Authorised Remote Pilots, participate in RPA incident investigations.

Supervisors:

All Supervisors coordinating RPA activities must:

- Ensure pre-flight planning and risk management of RPAS Operations is consistent with the level of risk associated with the activity;
- Ensure the completion and approval of a flight specific risk assessment using the Monash University S.A.R.A.H. and standardized templates.

Support Crew and Spotters:

Support Crew and Spotters associated with RPAS Operations must:

- Adhere to the instructions of the licensed RP conducting flights;
- Assist the RP to ensure RPAS Operations do not impact on people near or within the flight area;
- Not operate a RPA/drone.

OH&S:

Monash OH&S must:

- Ensure the RPA/Drone Safety Management Procedure and associated tools and guidance is maintained and available via the OH&S intranet site;
- Provide advice and guidance on OHS associated issues related to RPAS Operations;
- Audit selected RPAS Operations in accordance with Monash University OHS procedures.

11. Tools

All tools are available via the [Monash University OH&S Website](#).

1. Example Remotely Piloted Aircraft (RPA)/Drone/Unmanned Air Vehicles (UAV) Risk Assessment – available via Monash University S.A.R.A.H. database, Ref. number 2177.
2. Monash University RPA/Drone General Operating Conditions (GOCs)
3. Example Pre Flight Checklist and Post Flight Summary
4. Flight Plan Template (PDF format) and examples, including:
 - On-campus - Non populous area;
 - On-campus – Populous area;
 - Off-campus – Remote area;
 - Off-campus – Urban area;
 - Information Sheet - RPA Risk Management and Control.

12. Records

Records of RPAS Operations must be retained for the specified timeframe noted below. Additional items may be required to be documented at the request of the Chief Remote Pilot.

| Record Holder | Records | To be kept for |
|---------------------|--|----------------|
| Faculties/Divisions | Information related to RPAS Operations, including: <ul style="list-style-type: none"> • Flight risk assessments; • Approved flight plans; • Flight logs; | 3 years |
| | <ul style="list-style-type: none"> • Copies of Faculty/Division Remote Pilot RePL certificates; • Remote Pilot training records; • Copies of CASA exemptions; • RPA maintenance records. | Indefinite |

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| Authorised Remote Pilots | The Authorised Remote Pilots must collect and maintain the following records: <ul style="list-style-type: none"> • Approved Remote Pilot details and copies of RePL certificates; • Copies of contractor ReOC certificates and insurance details; • Flight approvals and information related to Monash University RPAS Operations when communicating with CASA, including operational exemptions. | Indefinite |
| Remote Pilots | Remote Pilots must maintain: <ul style="list-style-type: none"> • Accurate and updated individual flight logs | Indefinite |

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| Status | Revised |
| Approval Body | Monash University OHS Committee |
| Legislation Mandating Compliance | Civil Aviation Act (1988); Civil Aviation Safety Regulations (1998); Occupational Health and Safety Act (2004); Occupational Health and Safety Regulations (2017); Privacy and Data Protection Act (2014); Surveillance Devices (Workplace Privacy) Act (2006). |
| Related Policies | OHS Policy |
| Related Documents | <p>General RPA/Drone Information Updated list of CASA certified RRA operators. Remotely piloted aircraft system resources and links. Remotely Piloted Aircraft (RPA) eLearning module: What do you use RPA for?</p> <p>Information for Pilots Not sure about where you can fly? Check the CASA 'Can I Fly There' information. Flying drones/remotely piloted aircraft in Australia. Dirty Dozen: 12 ways your drone can land you in trouble. CASA requirements and information related to the Aeronautical Radio Operator Certificate. 'RPAS Operations between 30m and 15m - non-company personnel' information and guidance. Advisory Circular AC 101-01 v2 - Remotely piloted aircraft systems - licensing and operations.</p> <p>General Information of RPA Systems and Management: Example of RPAS Operational Procedures (Maintenance logs, pre-flight checklists, etc.) Examples of RPAS Operational Manuals (examples to assist with the management of RPAS Operations).</p> |

13. Document History

| Version | Date of Issue | Changes made to document |
|---------|----------------|--|
| 1 | September 2017 | RPA/Drone Safety Management Procedure, v1 |
| 2 | November 2017 | <p>Added the following procedure elements:</p> <ul style="list-style-type: none"> • 'Education and Training' details in 'Section 2 – Definitions'; • 'Section 3 – Licensing' requirements related to Flight Logs, Education and Training and Research Flights. • Updated 'Section 10 – Records' to include Pilot logs. |
| 3 | March 2018 | <ul style="list-style-type: none"> - Added exemption for individuals using RPA/Drones for Monash University authorised sporting activities to section 3 – Licensing. - Separated 'Recording of Flight Details' and 'Education & Training' from 'Licensing' section. - Moved 'Off Campus Research Flights' from 'Education and Training' to Section 3 – Licensing. - RPA related terminology modified throughout document. - Controlled and Non-controlled Aerodromes separated. |

14. Appendices

Appendix 1 – Flight requirements and Authorisation flowchart

