UAS Operations Manual

Version 3.0

02 July 2026

Edinburgh Napier University
School of Computing, Engineering and the Built Environment

UAS Operating Safety Case

Version 3.0 (5 January 2026)

This document is a combined Safety and Operations Manual, compliant with Volume 1 – Operations Manual as set out in CAP722A, covering all aspects of Edinburgh Napier University's use of unmanned aircraft (UA) or drones in accordance with the requirements of the UK Civil Aviation Authority's Operational Authorisation UKPDRA-01. It is intended to be used in conjunction with the proprietary Drones app which streamlines mission planning, management, logging and reporting.

Edinburgh Napier University (ENU) is committed to the safe conduct of all its Unmanned Aircraft System (UAS) operations and will ensure that the systems deployed are maintained and prepared in accordance with industry best practice, All operations will be carried out in accordance with the issued Operational Authorisation PDRA-01 and abide by the requirements of Assimilated Regulation (EU) 2019/947, its AMC (Acceptable Means of Compliance) and ANO 2016/765 or ANO 2016 as amended.

It is accepted that the contents of this documentation do not override the necessity of reviewing and complying appropriately with any new or amended regulation published from time to time by the CAA addressed by this documentation.

Accountable Manager:
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5 January 2026
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1.1 Purpose

The purpose of this site is to record the key data associated with the safe operation of UAS by ENU personnel.

1.2 Scope

ENU's core business is education and research. UAS will be used in relation to teaching and research projects that require

- Aerial surveys with visual light cameras and other sensors
- Use of a mobile network node for ad-hoc communications
- Inspection of remote locations and facilities

- Aerial photography and videography as required for research and teaching purposes
- Intelligent control of autonomous vehicles

1.3 Overarching Strategy

ENU's strategy, Driving Distinctiveness, sets out an overall goal of delivering high quality education and research to add value to the social, cultural and economic capital of our communities and shape their development. To achieve this, we will

- Build careers
- Grow our networks
- Advance knowledge
- Grow sustainably

1.4 Safety Statement

Safety is paramount and ENU has put essential safeguards in place to maintain a safe environment for all involved or connected to UAS operations. This Operations Manual describes the organisation, aircraft systems, personnel, flight operations and procedures by which ENU carries out its Unmanned Aircraft System operations.

ENU is committed to the safe conduct of all its UAS operations and will ensure that the systems deployed are maintained and prepared in accordance with industry best practice. All operations will be carried out in accordance with the issued operational authorisation PDRA01 and abide by the requirements of Assimilated Regulation (EU) 2019/947, its AMC (Acceptable Means of Compliance) and ANO 2016/765 or ANO 2016 as amended.

It is accepted that the contents of this document do not override the necessity of reviewing and complying appropriately with any new or amended regulation published from time to time by the CAA addressed by this document.

1.5 Document Control and Amendment Process

All amendments to this Operations Manual are to be made by Brian Davison or other suitably qualified person and will be recorded on the Change Log Page. Each amendment is identified with a new version number, an amendment date, and a list of the major amendments incorporated. All amendments will be signed off by the Accountable Manager, Brian Davison.

The CAA will be informed of all major updates such as new aircraft or pilots.

All personnel working on behalf of ENU will be informed of any changes to this Operations Manual and they must ensure they have access to a current up-to-date version either in electronic or paper format.

Safety Policy

2.1 Policy

Safety is the priority in all ENU activities. The University is committed to implementing, developing, and improving strategies, management systems and processes to ensure that all its aviation-related activities uphold the highest level of safety performance and meet national and where appropriate international standards.

The ENU commitment is to:

1. Comply with and, wherever possible, exceed legislative and regulatory requirements and standards.
2. Develop and embed a safety culture in all aviation-related activities that recognises the importance and value of effective aviation safety management and acknowledges that safety is always paramount.
3. Minimise the risks associated with aircraft operations to a point that is as low as reasonably practicable and achievable.
4. Ensure that externally supplied systems and services that impact upon the safety of operations meet appropriate safety standards.
5. Ensure that sufficient skilled and trained resources are available to implement safety strategy and policy.
6. Establish and measure safety performance against realistic objectives and/or targets.
7. Continually improve its safety performance
8. Conduct safety and management reviews and ensure that relevant corrective action is taken.
9. Clearly define for all relevant personnel their accountabilities and responsibilities for the development and delivery of the company’s aviation safety strategy and performance.
10. Ensure that all personnel are provided with adequate and appropriate aviation safety information and training, are competent in safety matters and only undertake tasks commensurate with their skills.
11. Ensure that enough skilled and trained resources are available to implement safety strategy and policy
12. Actively develop and improve safety processes to conform to world-class standards.

2.2 Safety Management System

ENU has implemented the rudiments of a full safety management system, using CAP1059 as appropriate guidance.

The internal safety objectives are:

- Encouraging an environment whereby safety has top priority and is second nature, and
- Increasing the knowledge on safe operations and practices on the part of all stakeholders.

2.3 Safety Targets

It is ENU's goal to operate aircraft without harm, injury or damage to any persons or property. The remote pilot will comply with all the safety requirements and limitations granted by the UK CAA to Edinburgh Napier University.

The safety target is No Accidents.

Organisation

3.1. Main details

Name: **Edinburgh Napier University**

Country of Registration: **Scotland**

CAA Operator ID: **GBR-OP-5H57G5DHWW9P**

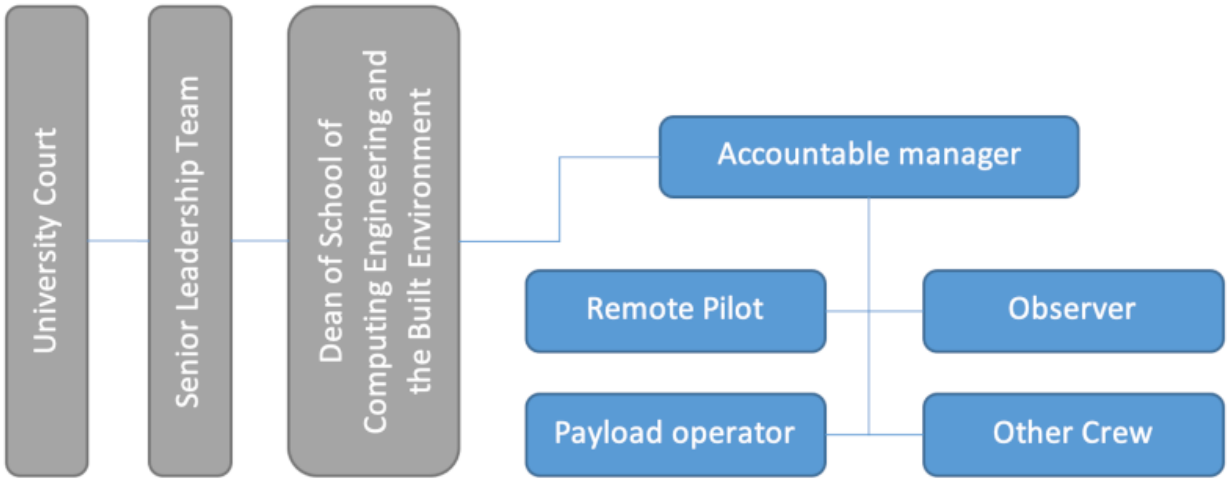
ENU is insured by U.M. Association Limited (Policy number: UM176/17 renewed annually).

ENU operates the UAS described in Section 6.

3.2 Structure of Edinburgh Napier University

ENU is a publicly funded higher education institution providing a full range of degree qualifications and undertaking funded research. The School of Computing, Engineering and the Built Environment (SCEBE) is responsible for UAS operations. SCEBE's physical location is the University's Merchiston Campus.

The chart below shows the relevant structures and lines of responsibility



3.3 Nominated Personnel

Permanent personnel are named in the table below. Other crew are recruited on an ad-hoc basis for specific missions. They are fully briefed on the contents of this operations manual in advance of live operations.

Name	Flyer ID	Role	NQE/RAE Issued Certificates	Acceptable Means of Compliance (if applicable)
Anne-Marie Carey	GBR-RP-B8FH4ZCSWW5C	Remote Pilot	GVC	N/A

3.4 Responsibilities

Where possible, a remote pilot will be accompanied by an observer. If an observer is not assigned to a mission, then the remote pilot will adopt the observer's responsibilities as detailed below.

Remote pilot

- Supervise the UAS operation
- Ensure that the University's Operator ID is displayed on the UAS
- Plan each flight in advance and ensure the right resources are available when required
- Complete the pre-flight risk assessment and mitigate any risks where possible
- Have confidence that the flight can be conducted safely and the competence to perform that flight
- Ensure that the aircraft used is airworthy by completing the pre-flight checklist
- Brief all crew members prior to a flight to ensure they understand their responsibilities
- Communicate with collaborators and other stakeholders as required to understand the required task
- Ensure that the welfare of themselves or others is not compromised by any planned operations
- Operate the aircraft within the stated limitations for that aircraft
- Ensure that he or she is of sound body and mind to operate the aircraft
- Complete all required paperwork such as pilot & aircraft hours, battery log etc. after a flight

Observer

- Act as a link between the remote pilot and other crew members
- Ensure the remote pilot is aware of all relevant developing situations
- Maintain constant look out for ground and air incursions
- Ensure the position of the UA is always known
- Keep the remote pilot updated with battery status
- Be prepared to activate the ‘failsafe’ function on the aircraft when required
- Brief the pilot after a flight using threat and error management techniques to help the pilot improve his or her competency

Payload Operator

- Ensure the camera or sensor is operational (fully charged, empty memory card fitted, lens clean)
- Ensure the camera or sensor is securely mounted (the remote pilot must confirm this also)
- Ensure the camera or sensor is switched on and operating correctly before activation of the aircraft
- Ensure the camera or sensor is switched off and images saved after the aircraft is made safe
- Ensure operational safety: it is every crew member’s responsibility to alert the observer to any changing situation which may cause threat to any aircraft, property, or person present
- Ensure the camera or sensor is rotated to the stored position for take-off and landing procedures

3.5 Areas of Operation

Operations will be carried out in UK airspace, mainly within class G airspace but also potentially including class D airspace.

3.6 Types of Operation

The anticipated types of operation are:

- Aerial surveys with visual light cameras and other sensors
- Implementation of a mobile network node for ad-hoc communications
- Inspection of remote locations and facilities
- Aerial photography and videography as required for research and teaching purposes

- Experimentation in intelligent control of autonomous vehicles

Operations that are conducted during daylight will be within standard VLOS limitations of 400 ft above surface level and at a maximum distance from the remote pilot of 500 metres provided the remote pilot can see the UA in good visual meteorological conditions.

Prior to all night-time operations (where night-time is defined as the time from half an hour after sunset until half an hour before sunrise, sunset and sunrise being determined at surface level), a daylight reconnaissance and site safety assessment including aircraft flight-paths within the surrounding area, shall be undertaken to identify, address and record any hazards, restrictions and obstacles. The launch site shall be provided with adequate illumination and the aircraft shall be equipped with adequate lighting. Flights shall only commence when the weather conditions and visibility of the UA are suitable for continuous VLOS operations.

The minimum separation from uninvolved persons will be 50 metres in flight. Overflight of uninvolved people will never be planned and will happen only if it is unplanned.

3.7 Supervision of UAS Operations

The remote pilot present during each operation will be responsible for the supervision and safe conduct of that operation.

The remote pilot will seek clearance from the accountable manager in advance of a flight where a risk is identified as not being in the low or moderate categories and cannot be easily mitigated.

An observer, if present, will be charged with pointing out to the remote pilot any unobserved threat or risk that manifests itself during a flight using threat and error management techniques.

Any safety issue that arises will be brought to the attention of the accountable manager as soon as practicable after the incident has been recorded.

3.8 Accident Prevention and Flight Safety Programme

ENU will comply with the requirements of CAP382, Mandatory Occurrence Reporting.

In the event of any occurrence, the severity will first be assessed, and reported as shown in the flowchart below.

The definitions in this section are from Regulation (EU) 376/2014 and Regulation (EU) 996/2010.

> **Occurrence**
>
> Any safety-related event which endangers or which, if not corrected or addressed, could endanger an aircraft, its occupants or any other person and includes an accident or serious incident. Accidents and serious incidents are classifications of occurrence

Accident

An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

1. a person is fatally or seriously injured as a result of:
    - being in the aircraft, or
    - direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or,
    - direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or
2. the aircraft sustains damage or structural failure which adversely affects the structural strength, performance or flight characteristics of the aircraft, and would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes) or minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike, (including holes in the radome); or
3. the aircraft is missing or is completely inaccessible.

Serious Incident

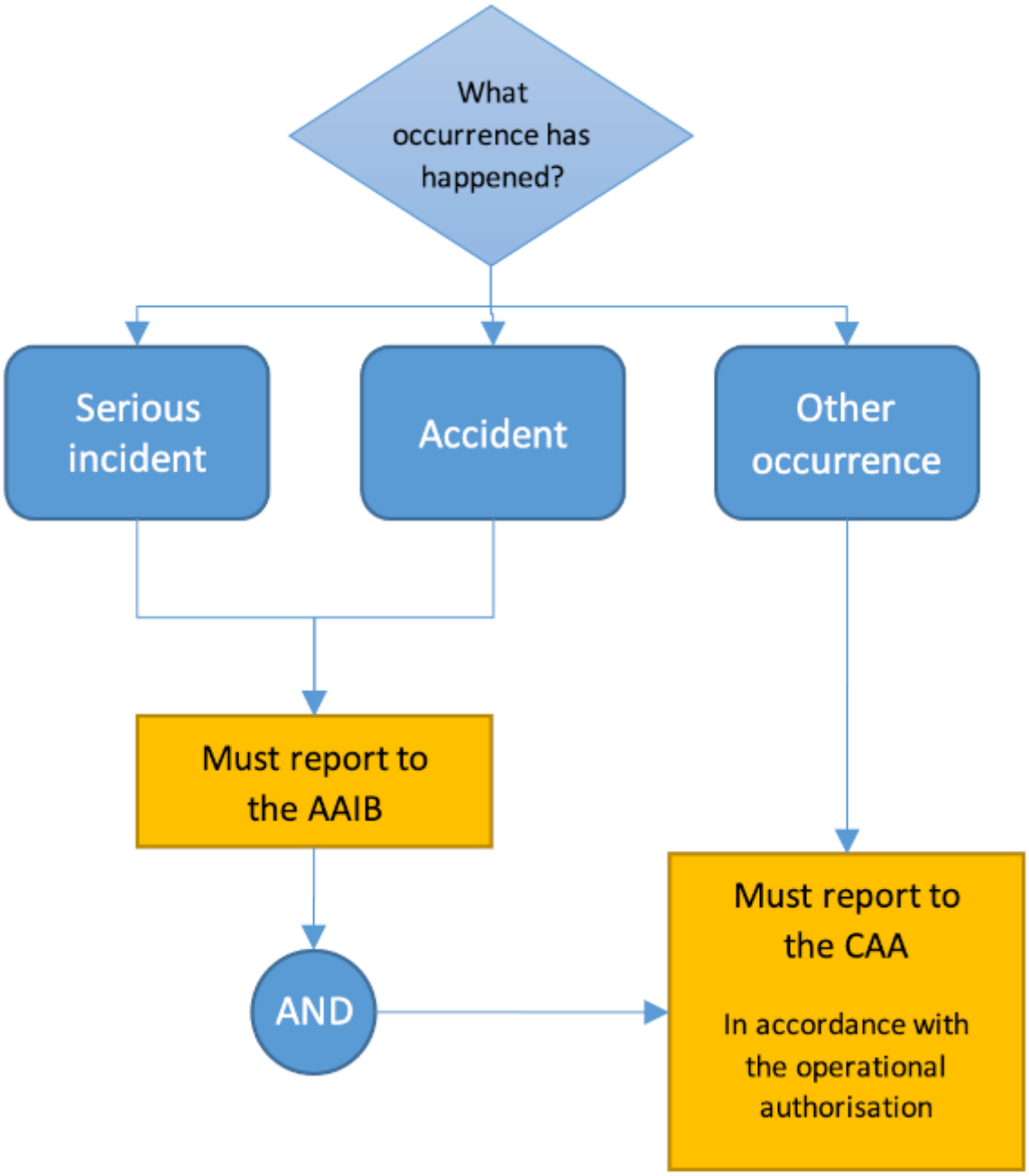
An incident involving circumstances indicating that there was a high probability of an accident and is associated with the operation of an aircraft, which in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time it comes to rest at the end of the flight and the primary propulsion system is shut down.

Fatal Injury

An injury which is sustained by a person in an accident and which results in his or her death within 30 days of the date of the accident.

> **Serious Injury**
>
> An injury which is sustained by a person in an accident and which involves one of the following:
>
> 1. hospitalisation for more than 48 hours, commencing within 7 days from the date the injury was received.
> 2. a fracture of any bone (except simple fractures of fingers, toes, or nose);
> 3. lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; d. injury to any internal organ.
> 4. second- or third-degree burns, or any burns affecting more than 5 % of the body surface;
> 5. verified exposure to infectious substances or harmful radiation.

The following workflow will be used to determine reporting requirements in the Specific Category under PDRA-01:



The ECCAIRS Central Hub should be used to report incidents to both the AAIB and CAA.

Incident Logging

All incidents will be logged in the aircraft operating hours log as well as the ENU Incident Log. Upon noting a minor incident, the logbook should be checked for similar occurrences. If a minor incident occurs three times, then an investigation should be initiated to identify the cause and consider implementing steps to reduce the likelihood of this incident occurring again.

All accidents and serious incidents require an investigation as outlined in the investigation procedure section. The incident log should also be updated.

Investigation Procedure and Report

Any investigations undertaken by ENU will follow the procedure shown below to generate an investigation report with the following contents:

> **INTRODUCTION**
>
> The introduction contains the context for the Incident and confirms the major facts as to the companies and people involved, why they were present and the reason for the flights being carried out.
>
> **DESCRIPTION OF EVENTS**
>
> This is a factual account of the events leading up to and immediately after the incident as well as the incident itself. Its aim is to provide an agreed basis upon which the analysis is carried out.
>
> Importantly any assumptions should be clearly stated, and all data provided should have its authenticity and derivation stated. If there are doubts, then these should also be clearly articulated so that future analysis can take this into account.
>
> **ANALYSIS**
>
> The analysis of events sets out to find explanations for what is described in the description of events. Wherever possible the analysis draws upon known concepts, models, and physical understanding to ensure that the events as described have a logical explanation.
>
> The analysis should set the scene for any conclusions and provide traceability from the facts to the conclusions in a logical and auditable way.
>
> **CONCLUSIONS**
>
> The conclusions are derived from the analysis, which themselves are based upon the facts in the description of events or the facts as they pertain to concepts, models and physical understanding exposed within the analysis. A strong conclusion is one where this traceability is good and can stand up to scrutiny.
>
> **RECOMMENDATIONS**
>
> The aim of a recommendation is to provide the organisations or personnel identified for the report with those items and actions that can lead to a safer operation and which address the shortcomings highlighted through the investigation process.

3.9 Flight Team Composition

The flight team will be designed around the requirements of the mission. In simple cases such as the conduct of aerial surveys in rural locations that are well away from buildings,

people and livestock, the remote pilot may operate alone. It should be noted, however, that the inclusion of an observer is preferred where possible.

In more complex situations, such as urban or industrial locations, the crew will include sufficient members to ensure the safety of the crew themselves as well as uninvolved persons nearby. The crew composition will be detailed in the mission plan.

3.10 Operation of Multiple Types of UAS

The remote pilot will ensure they are fully competent with the operating limitations associated with the aircraft class, weight, and manufacturer they intend to operate with – especially when multiple aircraft are used.

The UAS operated by ENU are listed in Section 6.

3.11 Qualification Requirements

ENU will ensure that all its remote pilots hold a UAS pilot competency assessment or qualification recognised by the CAA and compliant with the category they intend to operate within.

All remote pilots intending to operate within the open category must ensure they comply with the relevant qualification requirements. For example, they must have completed the DMARES assessment and hold a valid Flyer ID.

All remote pilots intending to operate within the specific category must ensure they hold the relevant qualification requirements for the intended PDRA, in the case of UKPDRA-01, a GVC is required.

3.12 Crew Health

All remote pilots and other crew members working on behalf of ENU will be introduced to the IMSAFE mnemonic and will be trained to use it as a proactive self-assessment tool.

> **IMSAFE**
>
> The IMSAFE mnemonic helps to remember six factors that could impair a crew member's ability to carry out their responsibilities safely.
>
> **I**: Illness
>
> **M**: Medication
>
> **S**: Stress
>
> **A**: Alcohol
>
> **F**: Fatigue
>
> **E**: Eating

It is the responsibility of the individual to determine if they are in a physically and mentally fit condition to participate in operations on behalf of ENU.

All crew members must be capable of clearly reading a vehicle registration number plate from twenty metres.

Crew members shall not attend a flight operation if they are under the influence of alcohol.

ENU also has a strict no drugs policy. All flight crew members taking prescription drugs should seek professional guidance and advise the remote pilot.

Any crew member who begins to feel unwell and is unable to continue with their assigned responsibilities should advise the remote pilot immediately.

Crew members shall not perform duties when they are unfit to perform tasks due to injury, fatigue, medication, sickness or other causes.

3.13 Logs and Records

ENU will maintain up-to-date information and operational logbooks for:

- Aircraft and Pilot Operating Hours
- Battery Charge
- Aircraft Maintenance
- Incidents / Accidents

ENU maintains a subscription with AirData.com which allows flight data to be uploaded directly and automatically from DJI UAS. AirData provides a compliant logging service for pilots, UAS, flights and batteries.

The Drones app also maintains comprehensive flight logs independently of AirData, providing an additional record-keeping system for all flight operations.

3.14 Operator Training Programmes

All remote pilots working on behalf of ENU will be subject to regular assessment by the accountable manager on a regular basis for competency and currency, with emphasis on emergency procedures and non-GPS assisted flight manoeuvres.

To maintain currency, the remote pilot should have completed a minimum 2 hours flight time in the previous 90 days.

3.15 Operational Authorisation

ENU holds a valid operational authorisation from the CAA, number PDRA01-24523.

Operations

This section provides a descriptive perspective of ENU operations. For a time-oriented perspective, please consult the procedures page.

4.1 Role training and currency

All remote pilots working on behalf of ENU will have to hold a pilot qualification recognised by the CAA for the relevant UAS operations and will be assessed by the Accountable Manager as being knowledgeable and competent to fly ENU’s UA in ENU's potential operating environments.

All pilots will be expected to maintain flying skills currency through hands-on flying with ENU aircraft, aircraft they have access to or appropriately configured simulators. Regular practice will include emergency procedures and flying in all operating modes offered by the aircraft.

To maintain currency, the remote pilot should have completed a minimum 2 hours’ flight time in the previous 90 days.

4.2 Area of operation

The anticipated areas of operation will be determined by the specific requirements of each mission and these in turn will follow from the terms of the related teaching or research project.

It is anticipated that a broad range of locations from remote rural to urban will be used falling into airspace categories G and D.

UAS operations conducted in UK airspace will be assessed in advance using comprehensive site risk assessment and procedures.

4.3 Operating limitations and conditions

ENU operations will be primarily conducted within the limitations stipulated within UKPDRA-01 or as stipulated in the operational authorisation issued by the CAA to the University.

Operations may take place within the Open Category. If so, the remote pilot will ensure that the compliant aircraft and competency requirements are held to operate in the specific subcategory.

All operations will be carried out in accordance with the issued Operational Authorisation PDRA-01 and abide by the requirements of Assimilated Regulation (EU) 2019/947, its AMC (Acceptable Means of Compliance) and ANO 2016/765 or ANO 2016 as amended.

All remote pilots are required to sign up to CAA Skywise portal to ensure they remain up to date with legislation, information notices and temporary airspace restriction or changes.

4.4 Methods to determine the intended tasks and feasibility

For all ENU UAS operations, the designated remote pilot will assess the intended task in stages according to ENU procedures. Preparation is documented in the Drones app.

Flight documentation will be retained for at least one year for future reference if required.

The designated remote pilot will be responsible for determining the method of operation for the intended task, identifying resources and assessing the task's feasibility. If he or she has any reservations he will discuss the reservations with accountable manager before proceeding with the task.

4.5 Operating site planning and assessment

As part of the research into task feasibility, the remote pilot will use whatever tools and facilities deemed necessary and available to them such as those listed on the references page.

The task will only go ahead if the remote pilot is satisfied the necessary controls and safeguards can be put in place for a safe operation within the operational area of flight.

As part of the planning process, the remote pilot will develop a site checklist in the Drones app specifically tailored for the location and the task. This checklist will be completed on arrival at the site.

4.6 Communications

Contact telephone numbers for the following will be recorded in the Drones app site evaluation as required before departure to the site and included in the exported flight brief PDF:

- Landowner(s)
- Observer and Crew
- Client Contact
- Local Police Station
- Local Hospital
- Local Air Traffic Control (ATC)
- Local Air User Clubs

Where possible, contact will be made with the landowner(s) and the ATC before any physical site survey in conducted.

ATC Phone numbers can be found according to the type of the ATZ:

- Civil > AD2 > Aerodrome Name
- Military > IAP > AD > AD2 > Aerodrome Name > Textual Data

4.7 Pre-notification

Permission is required if a planned flight operation is to take place within the flight restriction zone or runway protection zone of a protected aerodrome. The remote pilot will contact the ATC at least twenty-four hours before the planned flight. If operating in controlled airspace the remote pilot will make the decision on whether to contact ATC and notify them of the planned flight in the interests of safety. Contact details for the tower will be recorded on the relevant site survey form.

If there is a local air user club nearby the remote pilot will endeavour to contact the club and enquire about any likely activity on the day of the proposed flight operation.

If the planned flight operation is to take place in areas where there is likely to be members of the public, the remote pilot will inform the local police. The contact and telephone number will be recorded on the site evaluation form.

If the flight operation is to take place in a highly populated area, such as a housing estate, a leaflet drop, and/or a door-to-door advisory campaign will be considered at least seven days in advance to advise members of the public of proposed flight operations.

All relevant crew members will be sent a call sheet for the planned flight operation at least twenty-four hours in advance.

Some ATCs will require a non-standard flight (NSF) approval via the NATS portal.

Applications for NSFs should be made with a minimum of 21 days' notice. Applications submitted less than 7 days in advance of the flight may not be processed.

4.8 Site permissions

The designated remote pilot will obtain permission from all relevant landowners or land occupiers where flight operations are to be conducted. Where possible, permission will be sought in writing. Where it is available in writing a copy of the permission will be carried on site. No flight operations will commence without permission, either written or verbal, from the relevant landowners or occupiers for the main take-off and landing site.

4.9 Weather

In the week leading up to any flight operation the designated remote pilot will obtain long, medium and short-range weather forecasts. Twenty-four hours before the proposed flight operations the remote pilot will determine whether the planned flight operations will go ahead.

Weather and other forecasts, such as solar activity, will be obtained using readily available resources such as those in the references section.

4.10 On-site procedures

Printed flight brief PDF exported from the Drones app will be used on site in case an internet connection is not available.

Before setting up on-site in accordance with the site checklist the remote pilot or a designated crew member will carry out the following observations:

- Windspeed at surface level, using a handheld anemometer
- Immediate weather conditions
- Presence of uninvolved persons
- Unexpected factors that could affect mission safety

If the remote pilot feels confident that the proposed flight operations can be safely carried out, then the operation can progress, and the remote pilot can complete the on-site arrival checklist.

The remote pilot will then complete the site checklist to familiarise him or herself with the local geography of the site. This will be completed by physically walking around the site to identify any previously unidentified hazards that will be manually added to the environment diagram in section 2.4 of the site evaluation in the printed flight brief. Where an observer is present, the observer will accompany the remote pilot.

The remote pilot must be satisfied that all risks identified are acceptable and will sign off the site checklist before proceeding to the next stage.

4.11 Assembly and functional checks

The UAS will be assembled and checked in accordance with the relevant UAS assembly checklist.

The remote pilot will check the day prior to the flight operation that all necessary software and firmware updates have been completed on the UA to be flown and if necessary a test flight has been conducted.

4.12 Pre-flight checks

The UAS will be prepared for flight by the remote pilot following the pre-flight checklist.

4.13 Flight Procedures

When the remote pilot is satisfied the UA is ready for launch, they will follow the take-off protocol.

During flight, the remote pilot will conduct situational awareness updates with the observer if present. Situational awareness updates will include:

- UA position and responsiveness
- UA battery status
- Horizon scans and airspace assessments
- Landing site incursions
- Alternate landing site incursions
- Air incursions (air users / birds)
- Potential adverse weather changes
- Ground incursions, dangers to the remote pilot

Prior to landing, the remote pilot will follow the landing protocol.

4.14 Post-flight and between-flight checks

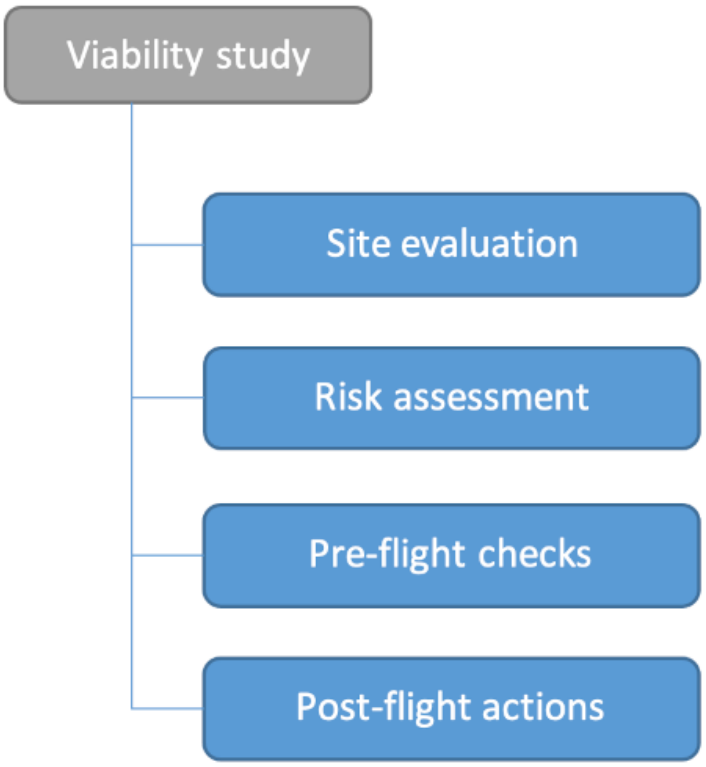
The UA will be shut down, made safe and checked in accordance with the post-flight actions checklist from the printed flight brief. This includes uploading flight logs to the Drones app.

4.15 Emergency Procedures

ENU emergency procedures are set out on the emergency procedures page.

5. Procedures

Flight documentation is managed through the Drones app. This section documents the procedures to be followed at each stage of a project. In overview, the sequence of events is shown in the diagram below. These main stages are broken down further in the timeline.



Important

Multiple sources should be used to check key information e.g. airspace, NOTAMs, weather etc. This is to avoid incorrect/missing information affecting the legality/safety of a flight. The references page provides links to resources categorised according to how they may be used; however, this information is not exhaustive. Please use all relevant sources as appropriate and inform the accountable manager is the list of references needs to be updated.

Mission references

Each operation requires a unique mission reference. A new mission reference is automatically generated when creating a new mission in the Drones app.

General procedure

The general procedure for planning an executing an operation is captured in the timeline. Details of specific stages of the process along with relevant template documents are provided on the relevant pages.

Special operations

As well as the generic procedures described in the timeline, templates are provided for certain types of operation:

- Outdoor operations on University premises
- Indoor operations on University premises
- Training sessions at Craiglockhart campus
- Practice sessions at Craiglockhart campus

5.1 Timeline

Depending on the nature of the flight and its location, certain checks will need to be carried out and permissions obtained. The timeline below summarises the preparations required in advance of a flight and immediately afterwards. Flight planning and documentation are managed through the Drones app.

The remote pilot is responsible for ensuring that all relevant actions are completed. For the items to be done in advance of the flight day, the times shown should be treated as the minimum. Some adjustments may be required - for example, if the flight requires an NSF application, other relevant planning actions should be brought forward to allow the application to be submitted in good time.

Flight documentation should be exported as a PDF from the Drones app and printed the day before the flight. This is to ensure that the relevant information is available on site even when an internet connection is not available.

> **28 days in advance**
>
> - Apply for non-standard flight permission if required :material-launch:

7 days in advance

- Complete operational assessment in the Drones app
- Complete site evaluation in the Drones app
- Complete risk assessment in the Drones app
- Submit NOTAM if appropriate :material-launch:
- Carry out a leaflet drop and/or a door-to-door advisory campaign if the flight operation is to take place in a highly populated area, such as a housing estate
- Inform the local police if the planned flight operation is to take place in areas where there is likely to be members of the public
- If there is a local air user club nearby, contact the club and enquire about any likely activity on the day of the proposed flight operation
- Obtain written permission from the relevant landowners or occupiers for the take-off and landing zones
- Monitor the weather at the site
- Customise the loading list in the Drones app

24 hours in advance

- Check that relevant contact numbers are recorded in the Drones app
- Contact ATC if the flight operation is to take place within the flight restriction zone or runway protection zone of a protected aerodrome
- Make go/no-go decision for the flight based on available weather information
- Review the loading list
- Prepare and send crew call sheets in the Drones app
- Configure UAS if required (e.g. add expansion bays, prepare custom payloads, etc.)
- Check UAS firmware is up to date
- Conduct a test flight if necessary
- Check that the operator id is clearly displayed on the UA
- Charge flight batteries, controller(s) and mobile device(s)
- Customise the site checklist in the Drones app
- Export and print the comprehensive flight brief PDF from the Drones app, which includes:
  - Permissions and contacts
  - Emergency procedures
  - Customised loading list
  - Customised site checklist
  - UAS assembly instructions
  - Crew briefing notes
  - Pre-flight checklist
  - Post-flight actions checklist

Day of flight

- Ensure relevant account is logged in (e.g. DJI operator)
- Ensure that the University's Operator ID is displayed on the UAS
- Pack equipment using the loading list from the printed flight brief
- Check for NOTAMs :material-launch:
- Conduct a physical site survey — walk the area, check the TOLZ and surroundings, record any unexpected hazards in the site survey section of the Drones app
- Make go/no-go decision for the flight based on windspeed, weather, presence of uninvolved persons and any unexpected factors
- Assemble the UAS using model-specific checklist
- Brief the crew using the crew briefing notes prepared during flight planning
- Carry out all pre-flight UAS checks — airworthiness, battery levels, propellers, controller link, payload operation
- After landing: carry out post-flight checks — secure and power down the UA, check for damage, record flight details
- Disassemble the UAS using model-specific checklist and pack equipment

Incidents and emergencies

- Report an incident through ECCAIRS :material-launch:
- Report an AIRPROX :material-launch:

5.2 Operational Assessment

In order to assess if a mission is viable, the remote pilot must make a high-level assessment to identify any serious barriers before going into further detail.

The Drones app mission creation workflow automatically queries external APIs for airspace, NOTAMs, weather, and protected area information. A Go or No-Go decision is made during the mission creation process based on this automated assessment.

The remote pilot should also consult the links provided on the reference page to evaluate:

- Airspace
- Ground hazards
- Weather

5.3 Site Evaluation

If the initial operational assessment concludes that there are no serious barriers to prevent the flight going ahead, and that any required permissions can be feasibly obtained, the next step is to conduct a more detailed evaluation of the site using information from the sources listed on the references page.

This is followed by a site visit to confirm the desk research and to identify any unexpected factors that could impact the safety of the flight. If a site visit is not possible in advance of the day of the flight, all physical checks will be performed as part of the site checklist.

The site evaluation in the Drones app is divided into two sections embedded on the project page alongside the flight area map, airspace classification, and weather information:

- **Site Evaluation** — desk research: location description, environmental sensitivities, terrain, permissions required, PPE, identified hazards, public footpaths, vehicle access, and mobile coverage.
- **Site Survey** — records the outcome of the physical site visit: pre-visit date, on-site verification of desk research findings, and any additional factors identified during the visit.

If a site visit is not possible before the flight day, the site survey section is completed as part of the on-site checks on the day.

Both sections are included in the exported flight brief PDF.

5.4 Risk Assessment

Using the information gathered in the site evaluation and from any other sources, identify each risk associated with the flight and estimate its likelihood and severity. Bear in mind that some risks will always be present and some will be site-specific.

Severity and likelihood are both evaluated on a scale of 1 to 5:

Value	Severity	Likelihood
1	No Injury, Property damage	Extremely Unlikely
2	Minor Injury	Remotely Possible
3	Reportable Injury	Will Possibly Occur
4	Major Injury / Single Fatality	Will Probably Occur
5	Multiple Fatalities	Almost Certain

Risk score is calculated as **likelihood × severity**:

Score	Level	Guidance
1–4	Low	May be accepted; review to confirm no further mitigation is practical
5–12	Medium	Flight should only proceed with specific additional measures in place
13–25	High	Flight must not proceed unless the risk can be sufficiently mitigated

After controls are applied, residual likelihood and severity are recorded to produce a **residual risk score** that should be lower than the initial score.

Risk assessment in the Drones app

The risk assessment is completed in the Drones app. Open a mission and scroll to the **Risk Assessment** accordion section.

Views

The section has two tabs:

- **Matrix** — a 5×5 grid showing all risks plotted by likelihood and severity. Cells are colour-coded green / amber / red according to the score bands above. Click any risk badge in the matrix to jump to its row in the table.
- **Table** — a full list of risks with all fields visible. Cells can be edited inline; changes are saved automatically without reloading the page.

Pre-populated risks

When a mission's risk assessment is opened for the first time, the system automatically adds:

- **Standard risks** — hazards that apply to every operation (e.g. competence, weather, emergency procedures, UAS collision).
- **Context-triggered risks** — additional hazards added based on the mission's operational parameters:

Trigger	Hazard added
Urban area	Pedestrians and traffic; crash into building/people
Rural area	Wildlife, livestock and domestic pets
BVLOS	Loss of visual contact
Controlled airspace	Airspace incursion
Protected nature area	Nature area disturbance
Flying over water	Ditching risk

If the mission's operational parameters change after initial creation, the system adds any newly-applicable triggered risks the next time the risk assessment section is opened.

Adding and editing risks

Use the **Add Risk** button to add a risk:

- **Blank Risk** — creates an empty row for a fully custom hazard.
- **From Library** — select a standard hazard from the organisation's risk library to pre-fill the hazard name, suggested controls, and people at risk. Library entries already present in the mission are hidden from this menu.

Click any cell in the table to edit it directly. Likelihood and severity dropdowns recalculate the risk score immediately. The matrix is updated when you switch to the Matrix tab.

Dismissing and deleting risks

Each risk row has an action menu at the right:

- **Dismiss** — hides the risk from the table but keeps a record that it was considered. Use this for auto-triggered risks that are not relevant to a particular operation. Dismissed risks can be restored via the Show dismissed toggle.
- **Delete** — permanently removes the risk. Use this for risks added in error.

Templates

If the same set of risks applies across multiple missions, the current assessment can be saved as a named template using the **Save as Template** button. Templates can be applied to other missions via the **Apply Template** menu, either merging with existing risks or replacing them. Organisation administrators can promote a personal template to organisation-wide so that all users can apply it.

Risk library (administrators)

The organisation's risk library is managed by administrators under **Admin → Risk Library**. Each entry can be marked as standard (automatically added to every new mission) or given context triggers so it is only added when relevant operational parameters are set. Entries can be enabled or disabled without deleting them.

5.5 Flight Procedures

Crew briefing

The remote pilot is responsible for ensuring that the crew are fully briefed so that they can carry out their roles competently and safely. The crew briefing will follow the structure set out in the crew briefing section of the flight brief. This section is tailored for the site and the nature of the flight during the flight planning process in the Drones app.

If there are uninvolved persons present, one option is to recruit them to the team by giving them a role. This brings them under the control of the remote pilot. In that case, they should be included in the crew briefing.

Situational awareness

The remote pilot and the crew will maintain a high level of situational awareness at all times. This primarily means monitoring the ground area and airspace for potential hazards.

The remote pilot is further responsible for the safe operation of the UAS and will use the scan technique to

- monitor ground/airspace
- monitor battery levels
- monitor changes in weather
- check blind spot

If the safety of the operation appears to be compromised at any time, the remote pilot will land the UA and make it safe. If possible, this will be done by following the normal procedure and landing at the primary TOLZ. If the primary TOLZ is not available, the secondary TOLZ will be used, and if the situation requires it, emergency procedures will be invoked.

The primary responsibilities of the crew are to

- monitor ground/airspace
- provide situational updates to the remote pilot
- control situations that might distract the remote pilot such as incursions by uninvolved persons
- be familiar with emergency procedures

Take-off protocol

Immediately before take-off, the remote pilot will

- ensure that the crew is in position
- ensure that any uninvolved persons are at safe distance
- ensure that the ground area and airspace are clear
- ask the crew to retreat 5m to the rear of the UA

At the point of take-off, the remote pilot will call Clear. A designated crew member will reply with Clear. This exchange provides a double check on the safety of the operational area, and also tells the remote pilot that the crew are fully engaged with the operation.

The remote pilot then calls Aircraft taking off

Following take-off, the remote pilot will perform basic flight checks at 5m ASL including

- Pitch
- Yaw

- Roll
- LED operation
- Payload operation

Landing protocol

Immediately before initiating the landing, the remote pilot will

- ensure minimum safe distance for uninvolved people
- ensure that the landing zone is free from foreign objects
- ask the crew to retreat 5m from the landing point

As with the take-off, the remote pilot calls Clear before landing, to which a designated crew member replies with Clear. This exchange provides the same benefits as during take-off.

The remote pilot then lands the UA and disarms it using the facilities provided by the specific model of UA being used. After disarming, the remote pilot will approach the UA and power down the batteries, after which they call Aircraft safe.

5.6 Emergency Procedures

This section describes the emergency situations that may arise and how they should be dealt with. The procedures set out actions for both the remote pilot and the crew. These measures will be recapped during the crew briefing before a flight and all crew members will have access to full instructions during an operation.

Pilot incapacitation

Pilot action

Activate RTH (Return to Home) or BL (Back Landing) if possible.

Crew action

- Pick up controller.
- Confirm launch area clear.
- Monitor video display (if still functioning).
- Initiate Return to Home procedure OR land the UA if trained to do so.
- Administer First Aid to pilot as appropriate
- Call Emergency Services if required

Notes

Administer first aid to pilot.

When Return to Home is initiated: If below 20m the UA will climb to 20m (if already above 20m the UA will stay at the same height)

The UA will return directly to the launch position, hover for 15 seconds then gradually descend until it lands, and the motors will automatically disarm.

Report to appropriate bodies as identified in section 3.8

Airspace incursion

Pilot action

- Climb or descend as appropriate.
- Alert crew to issue.
- When location of other air user has been identified move directly away, land if safe to do so.

Crew action

- Prioritise the identification of the location of the other air user.
- Keep pilot informed.
- Ensure landing location is clear.

Notes

Record any relevant information relating to the airspace incursion for UK AirProx Board.

Report to appropriate bodies as identified in section 3.8

Ground incursion

Pilot action

- Climb and move UA as appropriate and achieve suitable separation.
- Alert crew to issue.
- When location of people has been identified move away, land if safe to do so.

Crew action

- Prioritise identification of the location of the person.
- Keep pilot informed.
- Confirm launch/landing area clear

Loss of control data link

Pilot action

- Alert crew to issue.
- Attempt to regain control of the UA by changing flight mode from its current mode to an alternate and back.

Crew action

- Ensure landing location is clear.
- Monitor video display (if still functioning).
- Provide pilot with appropriate updates on status.

Notes

UA will enter a ‘failsafe’ mode in this situation after 3 seconds.

When failsafe is initiated: If below 20m the UA will climb to 20m (if already above 20m the UA will stay at the same height)

The UA will return directly to the launch position, hover for 15 seconds then gradually descend until it lands, and the motors will automatically disarm.

If UA re-acquires link at any time the pilot can change the flight mode to regain control of the UA by cycling the flight mode switch.

Pilot must land the UA as soon as it is safe to do so to investigate the issues.

Report to appropriate bodies as identified in section 3.8

Rogue UA

UA flying without response from remote pilot and uncontrollable

Pilot action

- Alert crew to issue.
- Attempt to regain control of the UA by changing flight mode switch.
- Attempt to initiate Return to Home using switch.
- Turn off Pilot Controller to attempt to force a failsafe. If this does not work turn controller back on again and try to regain control.
- If control regained, bring UA home and land.
- If control not regained, prepare for crash landing.
- Call “CLEAR”
- Proceed to crash site if possible
- Inform local ATC if required
- Inform emergency services if required

Crew action

- Identify a landmark on the horizon to assist with identifying direction of flight, from launch area or mark location.
- Monitor video display (if still functioning). Provide pilot with appropriate updates on status.
- Take a bearing of the direction of flight.
- Inform local ATC if required
- Inform emergency services if required

Notes

Dependent on outcome possibly inform the relevant agencies and personnel.

Report to appropriate bodies as identified in section 3.8

Loss of power (UA)

Pilot action

- Alert crew to impending crash.
- Attempt to regain control by changing flight mode switch.
- If control regained, bring UA home and land.
- If control not regained, prepare for crash landing.
- Call “CLEAR”
- Proceed to crash site if possible
- Inform local ATC if required
- Inform emergency services if required

Crew action

- Identify a landmark on the horizon to assist with location of UA.
- Monitor video display (if still functioning).
- Provide pilot with appropriate updates on status.
- Proceed to crash site if possible
- Inform local ATC if required
- Inform emergency services if required

Notes

Carry out post-crash management procedure.

Report to appropriate bodies as identified in section 3.8

Loss of power (ground control equipment)

Symptoms

- Tablet screen extinguished.
- Green connection light and / or white power lights on RC extinguish.
- UA shows fast flashing amber lights.

Pilot action:

- Alert crew to the loss of control.
- Ensure landing site is cleared.
- Watch behavior of UA to ensure failsafe is operating correctly. If not initiate Rogue UA procedure.

Crew action

- Monitor video display (if still functioning).
- Provide pilot with appropriate updates on status.

Notes

If UA experiences control data loss for more than 3 seconds it will enter failsafe mode.

When failsafe is initiated: If below 20m the UA will climb to 20m (if already above 20m the UA will stay at the same height)

The UA will return directly to the launch position, hover for 15 seconds then gradually descend until it lands, and the motors will automatically disarm.

If UA re-acquires link at any time the pilot can change the flight mode to regain control of the UA.

Pilot must land the UA as soon as it is safe to do so to investigate the issues.

Report to appropriate bodies as identified in section 3.8

Unexpected behaviour in flight

Pilot action

- Alert crew to the loss of control.
- Ensure landing site is cleared.
- Pilot must land the UA as soon as it is safe to do so to investigate the issues.

Crew action

- Monitor video display (if still functioning).
- Provide pilot with appropriate updates on status.

Notes

Report to appropriate bodies as identified in section 3.8

Lithium polymer battery fault

Symptoms

- Swelling of battery or overheating, for example from impact damage following aircraft crash, dropping of battery, or charging malfunction

Pilot action

- Alert crew to the fault.
- Call “CLEAR”
- If UA is in flight and still under control land immediately in a safe area away from public.
- Inform emergency services as required.
- Cordon off area 30m radius from battery/UA.
- If necessary and safe to do so use extinguisher.

Crew action

- Keep location of fire clear.
- Inform emergency services as required.
- Cordon off area 30m radius from battery/UA.
- If necessary and safe to do so use extinguisher.

Notes

LiPo batteries are highly dangerous and can explode

Keep distance until safe to approach

First on scene of UA: approach battery with extreme caution, wearing PPE (goggles, fire resistant gloves), LiPo bag and with fire extinguisher to hand.

Dispose of battery in accordance to safety guidelines OR safely discharge battery.

Report to appropriate bodies

UA fire

Pilot action

- Alert crew to the fire.
- Call “CLEAR”
- If UA is in flight and still under control land immediately in a safe area away from public.
- Inform emergency services as required.
- Cordon off area 30m radius from battery/UA/crash site.
- If safe to do so use extinguisher.

Crew action

- Keep location of fire clear.
- Inform emergency services as required.
- Cordon off area 30m radius from battery/UA.
- If necessary and safe to do so use extinguisher.

Notes

LiPo batteries are highly dangerous and can explode

Keep distance until safe to approach

First on scene of UA: approach battery with extreme caution, wearing PPE (goggles, fire resistant gloves), LiPo bag and with fire extinguisher to hand.

Dispose of battery in accordance to safety guidelines.

Report to appropriate bodies as identified in section 3.8

Loss of GNSS signal

NB: Return to Home function will not operate if GNSS signal is lost

Symptoms

- Loss of GPS mode in-flight
- Aircraft fails to hold position lock
- Visual warning on controller device
- Aircraft may switch to a non-GPS assisted mode (i.e. ATTI / OPTI)
- Aircraft status light may change

Pilot action

- Immediately switch to non-GPS assisted mode.
- Land at the nearest suitable TOLZ.
- In the event that pilot is unable to regain control, follow procedure for Rogue UA

Crew action

- Clear operational area of all personnel
- Identify clear TOLZ
- Provide pilot with appropriate updates on status.

Notes

Operation should be aborted until GPS can be established UNLESS it is safe to continue the flight without the use of GPS and the functionality it provides (e.g. GPS RTH)

Report to appropriate bodies as identified in section 3.8

Compass error

NB: Return to Home function will not operate in case of a compass error

Symptoms

- Loss of GPS mode in-flight
- Aircraft fails to hold heading
- Visual warning on controller device
- Aircraft may switch to a non-GPS assisted mode (i.e. ATTI / OPTI)
- Aircraft status light may change
- Aircraft may fail to keep commanded heading

Pilot action

- Land at the nearest suitable TOLZ.
- Consider changing to ATTI mode if available
- If aircraft begins to yaw uncontrollably, consider landing underneath flight path provided safe to do so
- In the event that pilot is unable to regain control, follow procedure for Rogue UA

Crew action

- Clear operational area of all personnel
- Identify clear TOLZ
- Provide pilot with appropriate updates on status.

Notes

Operation should be aborted until compass error is rectified.

Refer to pre-flight documents to reassess any electromagnetic interference or distortion risks.

Report to appropriate bodies as identified in section 3.8

Consider servicing aircraft for further investigation

Abnormal environmental conditions

Symptoms

- Abnormal environmental conditions and C2 link loss/loss of control of the aircraft
- UAS losing control in mid air due to bad weather (high winds/precipitation)
- Magnetic interference (fly with caution) warning

Pilot action

- Alert crew to issue
- Attempt to land if RP still has relative control over the aircraft
- If pilot loses complete control, thus resulting in the UAS falling to the ground, shout CLEAR to ensure people exit the area of potential incursion
- Check KP index before operation and calibrate compass before operation if needed

Crew action

- Ensure landing location is clear
- If UAS is falling out of the air, also shout CLEAR to alert anyone nearby

Notes

Before the pilot loses complete control, they should have noticed the UAS becoming less stable and attempt to land the UAS at their primary launch site, or secondary if this is not available

If the above option is not available, the pilot and the crew must shout CLEAR if the UAS starts to fall to the ground after loss of control.

Special Operations

Craiglockhart Training

Craiglockhart campus has a convenient area of grass suitable for training and practice sessions. The main requirements are:

- The session must be led by a member of staff holding a GVC qualification.
- Forms must be completed in the Drones app at least one week in advance of the event.
- The leader must review all forms to ensure that all requirements are met.
- An incident number must be obtained from Police Scotland in advance of the session

When completing the risk assessment in the app, the leader must double-check the risk items before confirming them.

Procedure

1. Create a new mission in the Drones app (mission reference will be generated automatically)
2. Complete the operational assessment in the app
3. Complete the site evaluation in the app
4. Complete the risk assessment in the app
5. Complete and circulate the unusual events form

> **Important**
>
> The steps above are designed to speed up the process but it is still the operation leader's responsibility to ensure that the operation complies with all legal and safety requirements. Check the timeline for guidance.

Craiglockhart Practice

Craiglockhart campus has a convenient area of grass suitable for training and practice sessions. The main requirements are:

- The session must be led by a member of staff holding a GVC qualification.
- Forms must be completed in the Drones app at least one week in advance of the event.
- The leader must review all forms to ensure that all requirements are met.
- An incident number must be obtained from Police Scotland in advance of the session

When completing the risk assessment in the app, the leader must double-check the risk items before confirming them.

Procedure

1. Create a new mission in the Drones app (mission reference will be generated automatically)
2. Complete the operational assessment in the app
3. Complete the site evaluation in the app
4. Complete the risk assessment in the app
5. Complete and circulate the unusual events form

> **Important**
>
> The steps above are designed to speed up the process but it is still the operation leader's responsibility to ensure that the operation complies with all legal and safety requirements. Check the timeline for guidance.

University Indoor Operations

Flying a drone inside a building has obvious additional risks. On the other hand, certain considerations when flying outdoors do not apply. The final authority with respect to indoor operations is the University's Health and Safety Office.

> **Important**
>
> Only drones below a take-off mass of 250g will be allowed to fly indoors. They must also be equipped with appropriate safety features such as rotor guards.

The main requirements for indoor operations are:

- The operation must be carried out or supervised by a member of staff holding a GVC qualification.
- Forms must be completed in the Drones app at least two weeks in advance of the event.
- The leader must review all forms to ensure that all requirements are met.

When completing the risk assessment in the app, the leader must double-check the risk items before confirming them. Sufficient attention must be given to the nature of the space, the potential hazards and possible interactions with people. For example, access to the area designated for the flight must be restricted by appropriate means.

Procedure

1. Create a new mission in the Drones app (mission reference will be generated automatically)
2. Complete the operational assessment in the app
3. Visit the room
4. Complete the site evaluation in the app
5. Complete the risk assessment in the app
6. Complete and circulate the unusual events form

> **Important**
>
> The steps above are designed to speed up the process but it is still the operation leader's responsibility to ensure that the operation complies with all legal and safety requirements. Check the timeline for guidance.

University Outdoor Operations

The three main University campuses are outside the flight restriction zone for the airport. However, they are all in built-up areas that may require special measures and permissions. Careful attention must be given to the planning of any operations on University premises.

The final authority with respect to operations on University premises is the University's Health and Safety Office.

The main requirements are:

- The session must be led by a member of staff holding a GVC qualification.
- Forms must be completed in the Drones app at least two weeks in advance of the event.
- The leader must review all forms to ensure that all requirements are met.
- An incident number must be obtained from Police Scotland in advance of the session

When completing the risk assessment in the app, the leader must double-check the risk items before confirming them.

Procedure

1. Create a new mission in the Drones app (mission reference will be generated automatically)
2. Complete the operational assessment in the app
3. Visit the site
4. Complete the site evaluation in the app
5. Complete the risk assessment in the app
6. Complete and circulate the unusual events form

> **Important**
>
> The steps above are designed to speed up the process but it is still the operation leader's responsibility to ensure that the operation complies with all legal and safety requirements. Check the timeline for guidance.

6. UAS in Use

ENU operates the following UAS:

Maintenance

When: * Firmware updates will be checked and applied before each flight * Calibrations and propellers are checked before each flight * Batteries will be charge cycled after three months if the UAS has not been used * Visual inspection is carried out after each flight * Serviced annually following activation

Who:

- University technician or manufacturer approved organisation as appropriate

What:

- Checks to be completed as per the standard maintenance checklist in the Drones app.

UAS in use

DJI Matrice 350 RTK

Type: Quadcopter

MTOM: —

Control Frequency: None

Serial No: 1581F6GKB23960040077

Homepage: https://enterprise.dji.com/matrice-350-rtk

User Guide: https://dl.djicdn.com/downloads/matrice_350_rtk/20250806UM/Matrice_350_RTK_User_Manual_v1.2_en4.pdf

DJI Mavic 3E

Type: Quadcopter

MTOM: —

Control Frequency: None

Serial No: 2022AP11055

Homepage: https://enterprise.dji.com/mavic-3-enterprise

User Guide: https://dl.djicdn.com/downloads/DJI_Mavic_3_Enterprise/DJI_Mavic_3E_3T_User_Manual_EN.pdf

DJI Mini 3 Pro

Type: Quadcopter

MTOM: —

Control Frequency: None

Serial No: 1581F4XFC233L007X6WX

Homepage: https://store.dji.com/uk/product/dji-mini-3-pro

User Guide: https://dl.djicdn.com/downloads/DJI_Mini_3_Pro/UM/20240105/2/DJI_Mini_3_Pro_User_Manual_v1.6_EN.pdf

Appendix A: Change Log

Version 3.0

5 Jan 2026

Updated to refer to the new Drones app for mission planning and management. All flight planning forms (viability study, site evaluation, risk assessment, checklists, etc.) are now completed in the app. The app exports all flight information as a single comprehensive flight brief PDF for on-site use. This replaces the previous workflow of downloading and completing individual Microsoft Word and Excel templates.

Flight codes are now generated automatically when creating a new project in the Drones app.

Added note in §3.13 that the Drones app maintains comprehensive flight logs independently of AirData.

Updated procedural sections to reflect app-based workflow:

- Timeline page - replaced form download links with references to completing forms in the app
- Procedures overview - updated to reference app-based project management
- Operations section - updated references to form completion and PDF export
- Removed redundant appendix listing downloadable forms

Update nominated personnel to include newly qualified pilots.

Replaced all references to RPA (Remotely Piloted Aircraft) with UA (Unmanned Aircraft) per CAA conventions.

Version 2.2

14 Jun 2024

Update nominated personnel section

Update UAS details section

Added procedures for operations on University property and for onsite and offsite practice and training

Version 2.1

9 Jan 2024

Replace references to "Regulation (EU) 2019/947 as retained (and amended in UK domestic law)" with “Assimilated Regulation (EU) 2019/947” according to the advisory notes from the CAA.

Version 2.0

14 Dec 2023

Updated §1.4 to include AMC statement.

Updated §3.2 to remove historical reference to the Computational Sustainability Lab

Updated §3.6 to include statement on overflight of uninvolved persons.

Updated §3.12 to include statement on remote pilot unfitness due to injury, fatigue, medication, sickness or other causes.

Updated §4.3 to include AMC statement.

Updated emergency procedures section to include abnormal environmental conditions procedure

Updated operations timeline to show 28 days as the lead time for non-standard flight permissions rather than 21

Updated operations timeline to include logging into relevant operator account

Updated UAS details to remove M100 and include additional devices

Version 1.1 FINAL

20 Dec 2022

Updated text to refer to the whole university and not just the Computational Sustainability Lab.

Updated the use of abbreviations for consistency

Updated organisation details to include new operator id

Updated referenced document versions

Version 1.0 FINAL

18 Aug 2022

Final confirmation of content from Coptrz

Version 0.2

28 Jul 2022

Minor updates based on initial feedback comments from Coptrz

Version 0.1

18 Jul 2022

Original version

Appendix B: Acronyms and Abbreviations

Term	Interpretation
AAIB	Air Accidents Investigation Branch
AIRPROX	A situation in which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft, as well as their relative positions and speed, have been such that the safety of the aircraft involved may have been compromised.
ATC	Air Traffic Controller
ATTI mode	Attitude mode: UAS operational mode where GPS positioning is not used/ available
ATZ	Aerodrome Traffic Zone
CAA	UK Civil Aviation Authority
CAP722	Civil Aviation Publication 722
CTR	Controlled Traffic Region
DMARES	Drone and Model Aircraft Registration and Education Scheme
ECCAIRS	European Co-ordination Centre for Accident and Incident Reporting Systems
FRZ	Flight restriction zone (around a protected aerodrome)
MOR	Mandatory Occurrence Reporting
MTOM	Maximum take-off mass
METAR	METeorological Aerodrome Report
NSF	Non-standard flight: An aerial task that is wholly contained within Controlled Airspace and does not follow published routes or notified procedures
OP-AUTH	Operational Authorisation
PDRA	Pre-Determined Risk Assessment
RPZ	Runway protection zone
Remote Pilot	An individual responsible for safely conducting the flight of an unmanned aircraft by operating its flight controls, either manually or, when the unmanned aircraft flies automatically, by monitoring its course and remaining able to intervene and change the course at any time
RPA	Remotely piloted aircraft (replaced with UA per CAA conventions)

Term	Interpretation
STS	Standard Scenario
TAF	Terminal Area Forecast
TOLZ	Take-off and landing zone
UA	Unmanned Aircraft
UAS	Unmanned Aircraft System
Unmanned Aircraft Delegated Regulation	Commission Delegated Regulation (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft systems
Unmanned Aircraft Implementing Regulation	Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft
VLOS	Visual Line of Sight

Appendix C: References

Documents referred to in this manual are listed on this page. It also provides links to useful sources of information and reporting services. Sources of information may be listed more than once if they are relevant to more than one category.

Legislation

Reference	Full Title	Issue Number	Date of Issue
Air Navigation Order 2016/765	Air Navigation Order 2016 SI 2016 No 765	N/A	13 April 2022
CAP 382	Mandatory Occurrence Reporting Scheme	N/A	July 2021
CAP 722	Unmanned Aircraft System Operations – Guidance	Version 9	7 December 2022
CAP 722A	Unmanned Aircraft System Operations in UK Airspace – Operating Safety Cases	Version 2	7 December 2022
CAP2013	Air Navigation Order 2020 Amendment – Guidance for unmanned aircraft system users	Version 1	17 December 2020
CAP1059	Safety Management Systems: Guidance for small, non-complex organisations	Version 1	June 2013
CAP1789A	The UAS Implementing Regulation; UK consolidated text	Version 7	2 December 2022
UAS IR	Commission Implementing Regulation (EU) 2019/947	N/A	24 May 2019

UAS

Reference	Full Title	Issue Number	Date of Issue
M100 User Guide	DJI Matrice 100 User Guide	Version 1.6	March 2016
Mini 3 Pro User Guide	DJI Mini 3 Pro User Guide	Version 1.6	April 2023
P3 User Guide	DJI Phantom 3 User Guide	Version 1.4	July 2017
Mavic3E User Guide	DJI Mavic 3E User Guide	Version 1.6	September 2023

Airspace, aeronautical information and reporting

- CAA: Integrated Aeronautical Information Package – United Kingdom
- CAA: Open Category: Chart to determine subcategory
- IAIP: NATS Aeronautical Information Publication
- NOTAMinfo.com to confirm NOTAMs
- CAA Skywise
- ECCAIRS Incident reporting
- Airspace Notification of UAS Submission of NOTAM
- NOTAM Info
- UK AIRPROX Board

Maps

- SkyDemonLight
- Altitude Angel
- NoFlyDrones
- Google Maps Flight Restriction Zones
- UK Grid Reference Finder
- DEFRA Magic Map Government information for checking sensitivities
- What3Words
- NOTAM Info
- Topography

Contact information

- Civil aerodromes > AD2 > Aerodrome Name
- Military aerodromes > IAP > AD > AD2 > Aerodrome Name > Textual Data

Ground hazards

- Google Maps
- Bing Maps OS overlay
- Drone Safety Map
- Google Earth Pro

Weather

- XC Weather
- UAV Forecast
- The Met Office
- MetCheck
- Windy
- METAR & TAF Decoder
- NetWeather

Tools

- Altitude Angel mobile apps
- DroneDesk
- DroneLogBook
- AirData
- PhotoEphemeris - natural light visualisation
- Google MapDevelopers - map tools such as circle drawing, elevation calculator, etc.