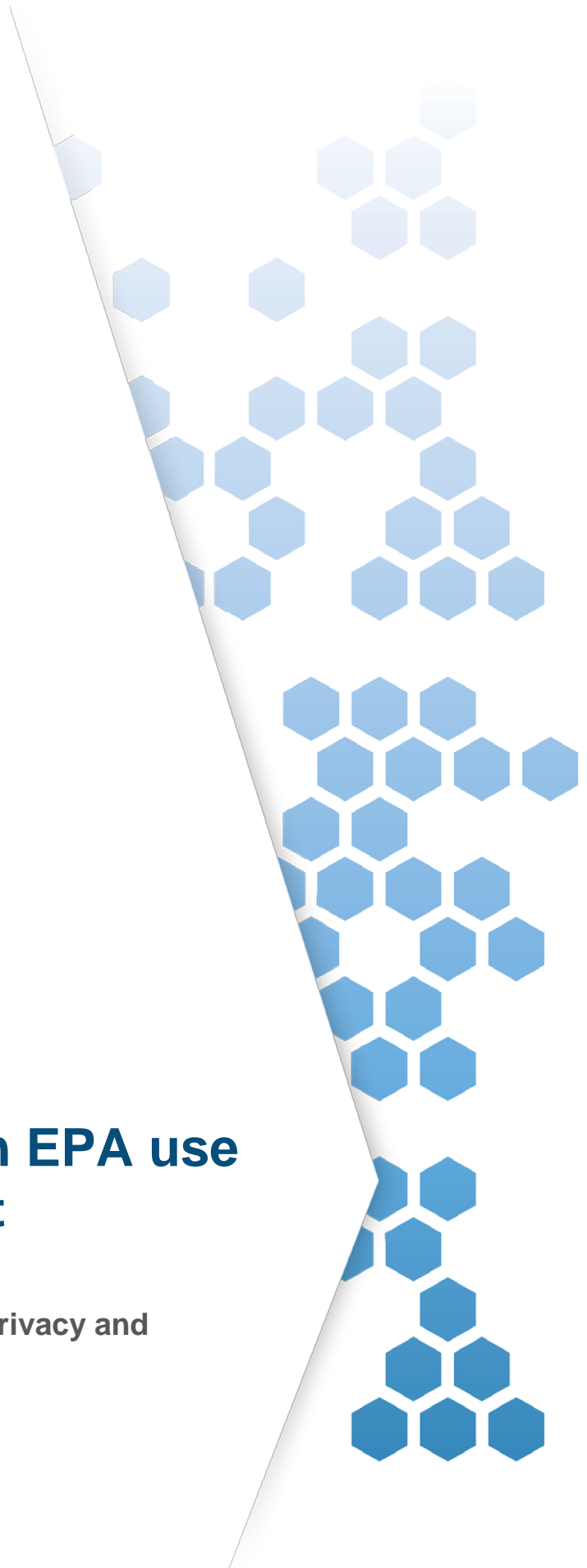


Interim guidelines on EPA use of unmanned aircraft

Striking a balance between safety, privacy and efficiency



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1 Introduction

These *Interim guidelines on EPA use of unmanned aircraft* (interim guidelines) address the NSW Environment Protection Authority's (EPA's) use of unmanned aircraft. The interim guidelines aim to strike the appropriate balance between safety, privacy and efficiency in the EPA's work to protect the community and our environment.

The *Protection of the Environment Operations Act 1997* (POEO Act) specifically states that EPA authorised officers can use an unmanned vehicle, vessel or aircraft to carry out their functions.

'Unmanned aircraft' is a catch-all term that includes remotely piloted aircraft and other unmanned aircraft systems (for example, unmanned balloons or rockets). **Unmanned aircraft are commonly referred to as 'drones'.**

Government agencies, particularly regulators, are increasingly using unmanned aircraft to carry out certain functions because they offer a range of potential benefits. Unmanned aircraft can capture a large amount of information, often for a fraction of the cost of doing so manually. They can access remote areas and can provide a safe and affordable option for gathering important information at the beginning of a difficult investigation.

Remotely piloted aircraft are the type of unmanned aircraft the EPA is most likely to use to carry out its functions.

Unmanned aircraft are a new and dynamic area of technology; their capabilities are constantly changing as the technology develops. Based on current technology, the EPA could use unmanned aircraft for aerial photos, volumetric surveys, measurements, mapping, heat sensing to detect invisible emissions, or air and water sampling.

These interim guidelines outline:

- the circumstances in which the EPA may consider using unmanned aircraft to collect information or assist with its regulatory functions
- the legal frameworks that regulate unmanned aircraft use, which the EPA will abide by
- how the EPA will conduct and manage unmanned aircraft activities
- the systems the EPA has in place to ensure its use of unmanned aircraft is transparent, accountable, and safe, with minimal impact on people's privacy
- the circumstances in which the EPA may use unmanned aircraft to enter premises without owner or occupier knowledge.

There are risks to using unmanned aircraft. These can include risks to public safety, privacy and critical infrastructure. The EPA will identify, assess, and where appropriate, manage risks for any unmanned aircraft activities.

These interim guidelines address the steps the EPA has taken to manage these risks and ensure the EPA's use of unmanned aircraft strikes the appropriate balance between safety, privacy and efficiency.

Whenever the EPA uses unmanned aircraft it will:

- engage suitably-qualified and certified contractors and operators to operate the unmanned aircraft, to ensure the EPA always complies with *Civil Aviation Safety Regulation 1998* requirements
- comply with all relevant legislative requirements relating to unmanned aircraft use, including the *Privacy and Personal Information Protection Act 1998* and the *Surveillance Devices Act 2007* (the most relevant details of which are set out in these interim guidelines)
- ensure an EPA authorised officer accompanies the unmanned aircraft operator where the EPA enters premises using the unmanned aircraft, as required under the *Protection of the Environment Operations Act 1997*
- assess the risks of the operation, to determine whether it is appropriate to use unmanned aircraft for the activity
- implement appropriate risk mitigation before commencing the planned activity
- only enter residential premises with the permission of the occupier or a warrant
- only enter non-residential premises without notifying the owner or occupier where this can be done using EPA authorised officer powers of entry, and where the EPA has good justification (for example, when investigating suspected illegal activity).

2 Why would the EPA use unmanned aircraft?

Government agencies are increasingly using unmanned aircraft, primarily because unmanned aircraft can collect a diverse range of information, often more quickly, cost-effectively, safely and accurately than land-based methods. Unmanned aircraft, used appropriately, are also becoming an important tool for regulatory agencies.

Unmanned aircraft can take aerial photos and videos, complete volumetric surveys, and map areas. They can have remote-sensing capabilities, and can even collect air and water samples.

Specifically, unmanned aircraft can assist the EPA to:

- assess the scope of an incident (for example, a spill of dangerous goods on a motorway, or a water pollution incident that affects a river in a remote area), by taking photos or video footage
- gather information about a licensed operator's performance (for example, compliance with dust minimisation obligations) by taking photos or collecting samples
- gather evidence for an investigation (for example, complete a volumetric survey of a waste stockpile)
- collect environmental monitoring data (for example, air quality samples).

3 Scope and application

The interim guidelines apply to any scenario where the EPA intends to use unmanned aircraft.

Any use of unmanned aircraft for EPA purposes is considered a commercial use.

4 Relevant legislation or other mandating instruments

A range of legislation governs the use of unmanned aircraft. The extent to which these regulations apply to EPA activities depends on the purpose and location of unmanned aircraft use. Specifically:

- Civil aviation legislation regulates the use of unmanned aircraft.
- Environmental legislation gives EPA authorised officers specific powers in specific circumstances.
- A range of legislation protects privacy.

This section outlines key elements of each set of legislation, and their relevance to the EPA's use of unmanned aircraft.

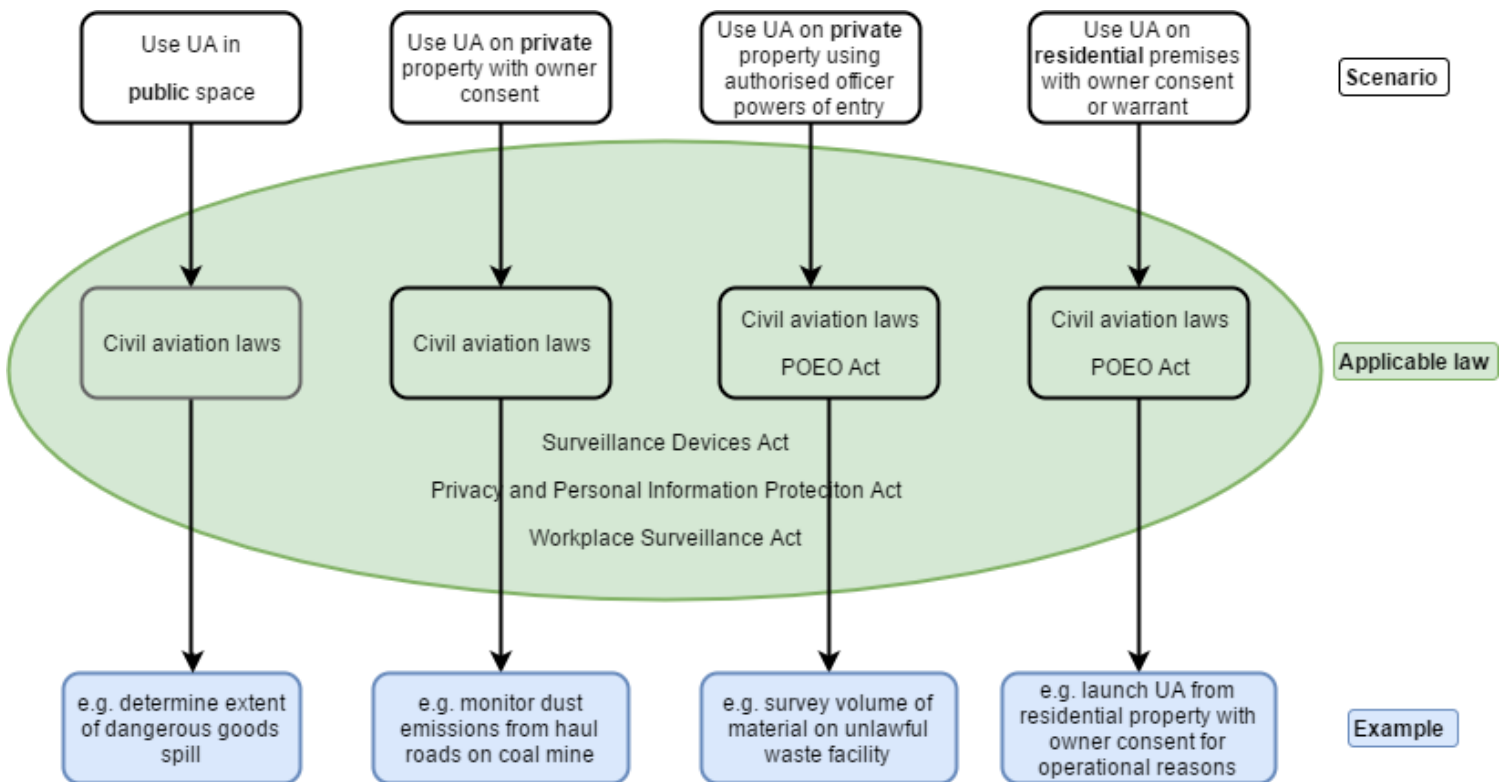


Figure 1: Flow diagram illustrating the type of legislation that applies under different unmanned aircraft (UA) scenarios, with examples

4.1 Civil aviation legislation

The Civil Aviation Safety Authority (CASA) regulates the use of unmanned aircraft. Part 101 of the *Civil Aviation Safety Regulation 1998* (CAS Regulation) sets out the rules governing the use of all types of unmanned aircraft in Australia. These rules cover where unmanned aircraft can and cannot be operated, licence requirements, certification requirements for operators, and the different approaches to their use depending on different unmanned aircraft size. Remotely piloted aircraft do not include balloons or kites (see the CAS Regulation dictionary).

Where it operates unmanned aircraft, the EPA has the same entitlements and obligations under the CAS Regulation as any other member of the public.

The requirements for operating remotely piloted aircraft are set out in Subparts A, B, C and F under Part 101 of the CAS Regulations.

In most circumstances, remotely piloted aircraft are likely to be the type of unmanned aircraft the EPA uses for its activities.

The CAS Regulation separates remotely piloted aircraft into the following categories:

- micro (100 grams or less)
- very small (100 grams to less than 2 kilograms [kg])
- small (2 kg to less than 25 kg)
- medium (25 to less than 150 kg)
- large (greater than 150 kg).

Use of remotely piloted aircraft, excluding those in the micro category, is subject to a range of requirements, summarised below.

These interim guidelines do not attempt to set out the CASA requirements in detail, as these requirements are likely to change over time.

The EPA will use appropriately-qualified and experienced contractors, who have a professional responsibility and contractual obligation to the EPA to hold current knowledge of applicable laws.

Certification requirements for contractors

In general, to operate remotely piloted aircraft for 'hire or reward' a contractor must hold a remotely piloted aircraft operator's certificate, which is issued by CASA. Exceptions apply for micro remotely piloted aircraft or very small or small remotely piloted aircraft operated under Standard Operating Conditions ([see below](#)).

Additional certification requirements apply where large unmanned aircraft are operated.

Before engaging any remotely piloted aircraft contractor, the EPA will ensure that contractor provides evidence of their certification. This risk-minimisation approach ensures the EPA engages highly-qualified operators, even though this is not strictly required by CAS Regulations.

Pilot licence requirements

For the type of unmanned aircraft the EPA generally expects to use, the remotely piloted aircraft operator must be licensed under CAS Regulations.

The CAS Regulations provide a detailed matrix outlining when a remotely piloted aircraft operator must hold a licence.¹ The remotely piloted aircraft operator must be licensed for any operation outside the Standard Operating Conditions for remotely piloted aircraft.

Before engaging any remotely piloted aircraft operator, the EPA will ensure that operator provides evidence of an appropriate licence. This ensures the EPA engages highly-qualified operators, even though this is not strictly required by CAS Regulations.

Standard Operating Conditions for remotely piloted aircraft

CASA's Standard Operating Conditions for remotely piloted aircraft are outlined below. These are basic minimum operating conditions that must be complied with, unless a contractor holds a remotely piloted aircraft operator's certificate and the operator holds a

¹ CASA 2016, *Advisory Circular: AC 101-10 Remotely piloted aircraft systems – operation of excluded RPA (other than model aircraft)* Civil Aviation Safety Authority, Canberra www.casa.gov.au/files/ac10110pdf

remote pilot licence. Some additional obligations may apply to the operator, depending on the activity's circumstances.

An operator can only fly one unmanned aircraft at a time.

The Standard Operating Conditions state that the remotely piloted aircraft must:

- be operated within visual line of sight
- not be flown higher than 120 metres (400 feet) above ground level
- be operated during daytime only, not after sunset
- not be operated within 30 metres of a person not directly associated with the operation of the remotely piloted aircraft
- not be operated in a prohibited area or restricted area. These are areas where an activity or obstacle makes flying unsafe, or require close monitoring of air activity; they include military areas and, currently, large sections of Sydney Harbour
- not be operated over a populous area
- not be operated within 5.5 kilometres (3 nautical miles) of a controlled aerodrome
- not be operated in the area of a public safety operation without approval of a person in charge of that operation.

Certified contractors can operate outside these conditions, sometimes routinely, and at other times with special approval from CASA.

The EPA's contract terms will require remotely piloted aircraft contractors and operators to comply with all applicable CASA laws.

4.2 The POEO Act and other relevant EPA legislation

Chapter 7 of the POEO Act sets out the circumstances in which an EPA authorised officer can 'enter' premises, and what that officer can do once they lawfully enter. These powers equally apply when an EPA officer lawfully enters premises 'by means of' unmanned aircraft.

The POEO Act powers for authorised officers also apply under several other acts administered by the EPA.

The POEO Act

Under section 184 of the POEO Act, an authorised officer can only use their powers to:

- determine if there is compliance or a breach of any provision of the Act
- obtain information or records for purposes connected with administration of the Act
- generally administer the Act and protect the environment.

Section 196(1) establishes an authorised officer's power to enter premises. It states an authorised office may enter:

- any premises at which the officer reasonably suspects industrial, agricultural or commercial activities are being carried out – at any time those activities are being carried out
- any premises at or from which the officer reasonably suspects pollution has been or is likely to be caused – at any time
- any other premises – at any reasonable time.

Section 196(2) means this power of entry extends to entering by means of unmanned aircraft.

Section 196(2A) then states that if entry is by means of unmanned aircraft, the aircraft must be operated by or under the authority of an authorised officer. This means that the unmanned aircraft operator must be accompanied by, and follow the reasonable directions of, the authorised officer at all times they operate the unmanned aircraft.

Section 199A states that an authorised officer can request assistance of a person, (for example, an unmanned aircraft operator) in order to exercise their authorised officer functions.

Section 197 limits EPA authorised officers' power to enter residential premises to cases where they have permission of the occupier or a warrant. This limitation equally applies to the EPA's use of unmanned aircraft.

Once they lawfully enter premises, an authorised officer is permitted to carry out a range of actions, as set out in section 198:

- examine and inspect any works, plant, vehicle, aircraft or other article
- take and remove samples
- make such examinations, inquiries and tests as the authorised officer considers necessary
- take photos and audio, video and other recordings

Once the EPA has lawfully entered premises using unmanned aircraft, it can do any of the things the Act permits an authorised officer to do on the premises (for example, take photos, samples or measurements).

In addition to the specific sections of the POEO Act set out above, section 199A of the Act generally provides that an authorised officer can be accompanied and assisted by a person who helps that authorised officer carry out their functions.

Other relevant EPA legislation

The above POEO Act powers for authorised officers also apply under other acts administered by the EPA, including the following:

- *Contaminated Land Management Act 1997*
- *Dangerous Goods (Road and Rail Transport) Act 2008*
- *Ozone Protection Act 1989*
- *Pesticides Act 1999*
- *Radiation Control Act 1990*
- *Snowy Mountains Cloud Seeding Act 2004*
- *Waste Avoidance and Resource Recovery Act 2001.*

Under these acts, an authorised officer has the same powers, and the same limits to these powers, as those outlined in the above [POEO Act section](#).

4.3 Surveillance legislation

The *Surveillance Devices Act 2007* (SD Act) implements national legislation. The SD Act covers devices used for listening, tracking, and optical and data surveillance.

The SD Act does not affect the use of authorised officers' powers under Chapter 7 of the POEO Act, provided these powers are exercised lawfully.

The most relevant provisions of the SD Act for EPA use of unmanned aircraft relate to optical surveillance devices.

4.4 Privacy legislation

The *Privacy and Personal Information Protection Act 1998* (PIIP Act) protects personal information. For the purposes of the PIIP Act, personal information means information about an individual that makes their identity apparent (for example, a photo of their face) or allows them to be identified (for example, car registration plates).

The main situation where the PIIP Act would govern EPA use of unmanned aircraft would be when unmanned aircraft operate with an attached camera (still or video). The PIIP Act would not affect tasks like air sampling or site surveys using Global Positioning Systems equipment.

Exemptions under the PIIP Act allow personal information to be obtained for the purposes of law enforcement, investigations or research. However, the EPA still has responsibilities in relation to appropriately retaining and securing that information.

When using unmanned aircraft, the EPA will implement measures to satisfy the objects of PIIP Act requirements. For example, the EPA will minimise inadvertent capture of personal information by requiring service providers to turn off unmanned aircraft video (and any audio) recording until the unmanned aircraft reaches the subject premises.

4.5 Government Information (Public Access) Act 2009

The *Government Information (Public Access) Act 2009* (GIPA Act) operates to enhance government transparency. Under the GIPA Act, people can request access to government records and information.

Information collected by unmanned aircraft could be the subject of a GIPA Act application. Disclosure is presumed, unless overriding public interest is against disclosure (for example, if the information collected is evidence for a criminal investigation still underway).

5 EPA procedures

5.1 EPA's approach to using unmanned aircraft

The EPA will engage appropriately-qualified and experienced professionals for all unmanned aircraft activities. This approach will:

- minimise the risks of unmanned aircraft use to public safety, worker safety and critical infrastructure
- ensure the operator understands and complies with all applicable CASA laws, including all operational, maintenance and licensing obligations related to unmanned aircraft use
- enable the EPA to cost-effectively use the most current form of a rapidly-evolving technology. (Owning and operating its own fleet of unmanned aircraft would not be cost effective, especially since the EPA expects to use unmanned aircraft services only intermittently.)

The EPA will also ensure unmanned aircraft contractors hold an appropriate level of public liability and professional indemnity insurances.

Should circumstances arise where the EPA deems it appropriate to deviate from this general approach, the Chief Environmental Regulator must approve any significant deviation from these interim guidelines.

5.2 Risk assessments for unmanned aircraft activities

The EPA will complete a risk assessment before employing unmanned aircraft to determine whether:

1. the activity is appropriate for unmanned aircraft use
2. any practical measures must be put in place to manage or mitigate risks.

Risks posed by unmanned aircraft use

The risks of using unmanned aircraft may include:

- risks to livestock; unmanned aircraft's unique noise profile means they may be too quiet for humans to detect, but can startle livestock or other animals
- distraction risk to people, including those near hazards (for example, people on roadways); people performing dangerous activities; or operating equipment, vehicles, plant or machinery
- the potential to damage property or harm people in the event of an unmanned aircraft failure or accident
- potential interference with the operation or security of critical infrastructure
- privacy concerns
- risks to other aircraft if the unmanned aircraft is flown contrary to CAS Regulations
- risks to the unmanned aircraft from on-the ground conditions (for example, when operating in proximity to mine blasting or during a bush fire, which can impair visibility)
- risks posed by unmanned aircraft operating in certain environments (for example, ignition risk from unmanned aircraft being present at a hazardous incident)
- risks of inaccurate data capture and processing.

Measures to manage or mitigate risks

To implement measures to minimise these risks, the EPA will:

- consider alternative ways to collect the required information
- ensure all unmanned aircraft operators are appropriately-qualified and experienced (operators will hold an appropriate remote pilot licence; contractors will hold an appropriate remotely piloted aircraft operator's certificate)
- where potential risk to livestock exists, inform owners of neighbouring properties, so they can secure livestock or halt other activities during unmanned aircraft operation
- where unmanned aircraft activity may risk distracting drivers on road or rail networks, consider whether traffic control measures are required, or if road or rail networks can be avoided
- contact owners or operators of critical infrastructure (for example, power plants) before conducting the activity, to ensure appropriate precautions are in place, including necessary security precautions
- complete Job Safety Analysis and Job Safety Briefing, in close consultation with unmanned aircraft contractors
- ensure information is collected only for the purposes specified in section 184 of the POEO Act

- ensure residential premises are only entered with occupier permission or a search warrant
- ensure staff consider how certain on-the-ground activities at premises could affect the unmanned aircraft activity
- minimise collection of personal data or unnecessary data (for example, instructing unmanned aircraft operators to turn on any camera only once the destination is reached, to avoid capturing unnecessary data on approach)
- ensure unmanned aircraft operators, contractors or other service providers have the necessary qualifications for the activity (for example, use only suitably-qualified spatial experts to capture and process spatial data).

Note that in some scenarios, neighbour or owner notification will not be appropriate ([section 5.4](#)).

5.3 Unmanned aircraft operators to be accompanied by an EPA authorised officer

An EPA authorised officer must always accompany and direct the unmanned aircraft operator for any EPA activity. This is a minimum requirement of the POEO Act. This arrangement also ensures any information collected can be used by the EPA as evidence for regulatory action.

5.4 Scenarios where the EPA will not notify owners or occupiers in advance

In certain situations, it will be appropriate for the EPA to enter premises with an unmanned aircraft without notifying the occupier or neighbours of the premises, or only notifying them once the activity is underway.

These situations include the following:

- The EPA uses unmanned aircraft to capture evidence of illegal activity. Alerting the occupier or neighbours about this exercise might prompt the occupier to hide or temporarily cease the illegal activity, or to destroy the evidence.
- The EPA's use of unmanned aircraft makes it possible to avoid exposing its authorised officers to significant safety risks that would be present if they entered the premises in person.
- Where the EPA must act quickly to protect human health or the environment, but an occupier or neighbour cannot be located (for example, to capture information that helps the EPA and emergency response agencies to assess an incident).

If the EPA deems unmanned aircraft use necessary to enter premises with critical infrastructure (for example, a power plant) without notifying the occupier in advance, the EPA will advise the occupant just prior to commencing unmanned aircraft activity. This approach ensures any potential security issues can be managed. This approach is similar to an unannounced inspection.

5.5 EPA systems to manage its use of unmanned aircraft

It is important to balance protection of people's privacy with the EPA's responsibility to efficiently and effectively carry out its statutory functions. To help achieve this balance and provide transparency and accountability, the EPA will maintain a log of its use of unmanned aircraft. The log will document how often, and for what purpose, the EPA uses unmanned aircraft.

Stakeholders and the public will be able to request access to the log by submitting a request in writing.

The EPA will use this log to monitor the extent and nature of its unmanned aircraft use, and to inform any future reviews of these interim guidelines.

All unmanned aircraft activities will be recorded on the log, and available for EPA internal uses. For external release, however, the log will be modified to ensure covert operations relating to active investigations are not released until the appropriate time (that is, details are only released when they can no longer prejudice an investigation).

6 Related policies, documents and websites

The following resources provide further information on unmanned aircraft and their regulation.

- **CASA** (September 2016) *Advisory Circular: AC 101-10 Remotely piloted aircraft systems – operation of excluded RPA (other than model aircraft)*
www.casa.gov.au/files/ac10110pdf
- **CASA website**
www.casa.gov.au/aircraft/landing-page/flying-drones-australia
- **Australian Association for Unmanned Systems**
aaus.org.au/
- **Australian Certified UAV Operators Inc.**
www.acuo.org.au/

7 Accountabilities

To obtain further information on these interim guidelines, report concerns or raise any matter about the EPA's use of unmanned aircraft, contact the EPA's Environment Line:

- phone: 131 555
- email: info@epa.nsw.gov.au

8 Glossary

The following definitions and abbreviations apply in this document.

CASA	Civil Aviation Safety Authority
CAS Regulation	<i>Civil Aviation Safety Regulation 1998 (Cth)</i>
EPA	NSW Environment Protection Authority
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
PPIP Act	<i>Privacy and Personal Information Protection Act 1998</i>
SDA Act	<i>Surveillance Devices Act 2007</i>