



Drones and Surf Life Saving

October 2018

Many clubs would have read about the use of Unmanned Aerial Vehicles (UAVs) or ‘drones’ in lifesaving, and some clubs may be interested in learning how to get more involved.

SLSNSW is rolling out a strategy around the use for drones in Surf Life Saving. We are fortunate to have a partner in the Department of Primary Industries (DPI) and we working on ongoing trials primarily focused on shark surveillance. The benefit of these trials is that we are able to also understand how best to integrate drones into our general life saving activities.

The following information explains many of the aspects of drone operation, from the equipment to the regulatory environment we need to operate in. Just as our IRB drivers need qualifications recognised by the authorities, the same is true for drone operations.

What are the DPI Project locations?

Region 1			
Kingscliff	SPRING PRE-SUMMER INTERIM SUMMER PRE-AUTUMN INTERIM AUTUMN	20/09/18 – 15/10/18	7 Days
Main Beach Byron Bay		16/10/18 – 30/11/18	Weekends
The Pass		1/12/18 – 29/01/19	7 Days
Suffolk Park		30/01/19 – 30/03/19	Weekends
Lennox Head		1/04/19 – 29/04/19	7 Days
Sharpes Beach			
Lighthouse/Shelley			
Beach Ballina			
Evans Head			
Region 2			
Yamba	PRE-SUMMER INTERIM	1/11/18 – 19/12/18	Weekends
	SUMMER	20/12/18 – 29/01/19	7 Days
Coffs Coast	PRE-AUTUMN INTERIM	30/01/19 – 12/04/19	Weekends
	AUTUMN	13/04/19 – 29/04/19	7 Days
Region 3			
Tacking Point	SPRING	29/09/18 – 15/10/18	7 Days
	PRE-SUMMER INTERIM	16/10/18 – 19/12/18	Weekends
	SUMMER	20/12/18 – 29/01/19	7 Days
	PRE-AUTUMN INTERIM	30/01/19 – 12/04/19	Weekends
	AUTUMN	13/04/19 – 29/04/19	7 Days
Region 4			
Birubi	PRE-SUMMER INTERIM	1/11/18 – 19/12/18	Weekends

	SUMMER	20/12/18 – 29/01/19	7 Days
	PRE-AUTUMN INTERIM	30/01/19 – 12/04/19	Weekends
	AUTUMN	13/04/19 – 29/04/19	7 Days
SMP			
Redhead	PRE-SUMMER INTERIM	1/11/18 – 19/12/18	Weekends
	SUMMER	20/12/18 – 29/01/19	7 Days
Avoca	PRE-AUTUMN INTERIM	30/01/19 – 12/04/19	Weekends
	AUTUMN	13/04/19 – 29/04/19	7 Days
Region 5			
Kiama	PRE-SUMMER INTERIM	1/12/18 – 19/12/18	Weekends
Mollymook	SUMMER	20/12/18 – 29/01/19	7 Days
Region 6			
Pambula	PRE-SUMMER INTERIM	1/12/18 – 19/12/18	Weekends
Tathra	SUMMER	20/12/18 – 29/01/19	7 Days

How do I get involved in flying drones if the project is at my beach or one close to me?

We are keen to recruit pilots for the program. Please email drones@surflifesaving.com.au to submit an expression of interest and in the training and/or register as a pilot if you are already qualified.

What is a Drone?

A drone is a remotely piloted aircraft (RPA). RPAs range in size from 1g to 150kg.

It is important that you understand the requirements and rules before engaging in any activities involving drones.

Why are Drones regulated?

The *Civil Aviation Safety Regulations 1998* (CASR) exist under the *Civil Aviation Act 1988* and are administered by the Civil Aviation Safety Authority (CASA).

CASA is responsible for ensuring the safety of all users of airspace as well as people on the ground. The Regulations set controls on the operators and activities of drones to minimise any foreseeable risks to the public and other aircraft.

Because of the potential risks from inappropriate use of drones, fines apply to people and organisations that do not comply with the CASR.

How are Drones regulated?

The CASR define what types of flight activities can be conducted, who can conduct them and where and how

they can occur.

Part 101 of the CASR governs the use of RPAs. The regulations are complex and technical and vary according to specific circumstances. CASA has produced *Advisory Circular 101-10* to assist users to interpret the regulatory requirements. A Manual of Standards will also be published.

Any Surf Life Saving NSW related operation is subject to a specific approval issued by CASA. Details about the SLSNSW approved operating conditions can be found in the Operations Manual and support documents.

It's important to understand that any members flying drones during patrols or as part of any SLS activity must fly under the SLSNSW SOPs or they will not be covered by SLS insurances.

Do you need a Remote Pilot Licence (RePL)?

Not for all operations - most locations will allow commercial RPAS operations to be conducted in the 'excluded category'.

What training will be conducted?

Everyone who wants to fly a drone for SLSNSW will be required to do an operationally specific course. This will be a two day course including a full day of practical drone flying with an instructor on a beach in your branch area. Members with a current RePL may be granted recognition of prior learning and only be required for the operationally specific aspect of the course (which includes identification of marine life and other hazards such as rip currents).

Surf Life Saving NSW has a ReOC

SLSNSW has a RPA Operator's Certificate (ReOC). Our ReOC represents CASA's permission to conduct *agreed* types of activities using *approved* RPAs. CASA only issues ReOCs to organisations that have systems that meet the highest technical and safety standards.

SLSNSW has developed an in-house compliance system to approve, monitor and record all drone operations.

The ReOC and SLS compliance system also means that our insurance program will cover approved activities and pilots, should an injury or damage to property occur.

SLS NSW RPA Operator's Certificate (ReOC):

- Approves SLSNSW staff member appointed to the position of Chief Remote Pilot.
- Stipulates the types of RPA operations that can be performed and any particular limitations considered necessary.
- Lists the approved models of RPAs for approved SLS RPAS activities.

SLS is licensed to conduct aerial surveying, aerial spotting and aerial photography.

If your club is looking at purchasing a drone, contact – drones@surflifesaving.com.au and talk with the Chief Remote Pilot early in your planning phase. Clubs that operate UAVs without SLSNSW approval are not covered by any insurance and will be in breach of SLSNSW regulations.

Why does SLS need a ReOC?

Following amendments to CASR in September 2016, not all commercial operations need a ReOC. Exclusions apply to:

- Commercial operations using very small RPAs (under 2kg)
- Some farm-owner managed agricultural operations
- When conducted within restricted operating conditions and 5 days after online notification to CASA has been given

Standard Operating Conditions

Licensed RePLs operating under a ReOC are approved to operate under Standard Operating Conditions (SOCs).

Generally, a RPA **can only** be operated:

- In visual line of sight (without binoculars or telescope)
- Below 400 feet above ground level
- In visual meteorological conditions
- During the day

Generally a RPA **cannot** be operated:

- Over populous areas
- Within 3 nautical miles – about 5km – of an aerodrome
- In controlled airspace or prohibited areas
- Within 30 metres of a person not directly associated with the RPAS operating team

As SLSNSW has a ReOC, variation to these conditions can be negotiated with CASA where it can be demonstrated that public safety can be properly managed.

Check with the SLSNSW Chief Remote Pilot for details.

Approved Operating Systems

The ReOC is issued on the basis that we maintain appropriate systems to ensure the safe operation of all RPA activity.

This includes systems to ensure:

- All pilots are appropriately trained
- Effective management of all operations
- Suitably trained personnel are appointed to the positions of Chief Remote Pilot and Maintenance

Controller

- Maintenance of all equipment is regularly conducted – RPAs, ground systems and payloads
- Flight activity is conducted according to an operations manual approved by CASA
- Records are maintained in a form approved by CASA and are available for review or audit

Our ReOC provides assurance to the SLSNSW community, to our research partners and to the public that our activity is conducted with the safety of the general public, and other users of airspace, in mind. Our insurance coverage also means we need to meet requirements under the regulations and adopt safety management measures.

Role of the Chief Remote Pilot

The Chief Remote Pilot has the necessary experience and qualifications to oversee all RPA operations.

The Chief Remote Pilot has autonomy to perform the role as required by CASA and is directly answerable to CASA for the SLSNSW management of its drone fleet (this includes drones owned by clubs, but flown under SLSNSW auspices).

The Chief Remote Pilot has full authority and can and will refuse permission to any operation that does not meet CASA requirements, industry best practice or risk and insurance requirements of SLSNSW.

The Chief Remote Pilot is responsible for:

- Ensuring the SLSNSW RPA operations comply with legislation and regulations
- Maintaining records of the qualifications of all RPA pilots, drones and operations
- Monitoring operational standards and training
- Ensuring access to a reference library supporting approved operations

CASA must be advised and approve any changes to the appointment of the Chief Remote Pilot and the Maintenance Controller.

What type of drone can I use?

DJI Phantom 4 pro (Sub 2kg and able to be retro fitted with floatation drop and siren). SLSNSW will advise if this condition changes and either this model is replaced, or SLSNSW extends the approved drone type under its ReOC.

Remotely Piloted Aircraft Systems

The operation of all RPAs must be supported by an effective RPAS (Remotely Piloted Aircraft System).

This System will comprise both airborne and ground-based equipment.

The purpose of the RPAS is to support continued safe flights and recovery of RPAs by ensuring that pilots have full control and real time awareness of the flight status of their aircraft.

A well-integrated RPAS will minimise the potential for human error and help prevent any possible failure of an

operation by incorporating fail-safe design features.

A more complex RPAS should be put in place as risk to the safety of others, or technical difficulty of the operation, increases.

Getting Approvals

When operational requirements differ from those listed on the ReOC, an approval from CASA can be sought through SLSNSW Chief Remote Pilot.

Approvals may be needed for:

- Special types of activities - one-off or a regular activity in a particular location
- Permission to work in special conditions – such as night-flying and close to airports
- Use of a particular or specialist type of aircraft

Do not purchase or use your drone until you have discussed this with the Chief Remote Pilot and arranged for the drone type to be listed on the ReOC (this may take time if the drone is more technically complex or larger than existing drones as additional testing of all personnel by CASA may be required).

Privacy Matters

Anyone using a drone should consider privacy issues.

The same features that makes drones potentially useful in conducting a range of activities also makes them potentially intrusive when they are used without consideration of other people.

SLSNSW has a **Photography Policy** which requires that activities involving the collection of any photographic or video data should not be intrusive of people's privacy.

Health Safety and Wellbeing

Like other equipment that is used by SLSNSW, drones are useful tools for improving water safety.

Possible risks to safety during drone operations should be assessed as required under the SLSNSW Health Safety and Wellbeing Policy.

The safety of personnel should always be considered in the use and storage of all equipment.

Potential hazards related to drone batteries (Lithium-ion Polymer) should be considered during storage and transport.

Standard procedures related to the assessment of off-site activities and general field work should also to be adhered to.

SLSNSW provides insurance cover for approved activities.

This means drones which are operated in any Australian jurisdiction and in accordance with CASA requirements and SLSNSW Policies and procedures.

For full details about insurance coverage you should refer to the Drones Insurance Guide or contact the Legal and Risk Branch.

Managing Risk

The regulations governing the use of drones are intended to support the safe operations of all aircraft being used in airspace. The regulations provide a framework where the rules are well understood and information about known risks is shared.

The objective is similar to the systems developed to regulate road traffic.

The success of the framework relies on the operators of drones understanding the rules that apply to airspace, anticipating and reducing any potential risks and having the skills and awareness to determine the best response to a range of possible incidents.

The regulations are complex because the potential risks are complex.

More information about risk assessments can be obtained from the Chief Remote Pilot.