SLSNSW Guide to Surf Life Saving Club Use of UAVs

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Terminology

A list of common acronyms used in the SLSNSW Guide to SLSC use of UAVs:

AUAVS	Australian UAV Service, a business unit of SLSNSW
CASA	Civil Aviation Safety Authority
CRP	Chief Remote Pilot
NM	Nautical Mile
OIP	Operator Induction Program
Operator	OIP trained member
Pilot	RePL trained member
ReOC	Remotely piloted aircraft Operators Certificate
RePL	Remote Pilot Licence
RPA	Remotely Piloted Aircraft (same as UAV, RPAS)
RPAS	Remotely Piloted Aircraft Systems (same as UAV, RPA)
SAR	Search and Rescue
SLSC	Surf Life Saving Club
SLSNSW	Surf Life Saving New South Wales
SOP	Standard Operating Procedures
UAV	Uncrewed aerial vehicle (same as RPAS, RPA)
VLOS	Visual Line of Sight

Document Control

Date	Version	Summary of Revision	Authorised by
August 2023	001	Initial document	P. Hardy
August 2025	002	Rebranding from AUAVS to SLSNSW Major rework of document including expansion on regulations section 1, expansion of section 3 on Training requirements, expansion of section 5 on Lifesaving and UAVs,	E. Gale

SLSNSW Contact:

For all enquiries: aviation@surflifesaving.com.au

Staff:

Emma Gale,
Chief Remote Pilot and Capability Coordinator
Email: egale@surflifesaving.com.au

Jeremy Innes,
UAV Membership Development Officer
Email: jinnes@surflifesaving.com.au

Overview

Uncrewed Aerial Vehicles (UAV) provide an aerial perspective that allows lifesavers to monitor large areas of the ocean quickly and efficiently. With the help of high-definition cameras and thermal imaging technology, UAVs can detect rip currents, sharks, and other hazards that may be less visible to the human eye. UAVs can also assist in locating missing swimmers and provide a bird's-eye view of the ocean for better search and rescue operations. By incorporating UAVs into their operations, Surf Life Saving Clubs (SLSCs) can improve their response times, reduce the risk to lifesavers, and enhance the safety of the community.

UAVs at SLSCs are not intended to replace other SLS operations but enhance them as another tool for Patrol Captains or Lifeguards to use for situational awareness and decision making.

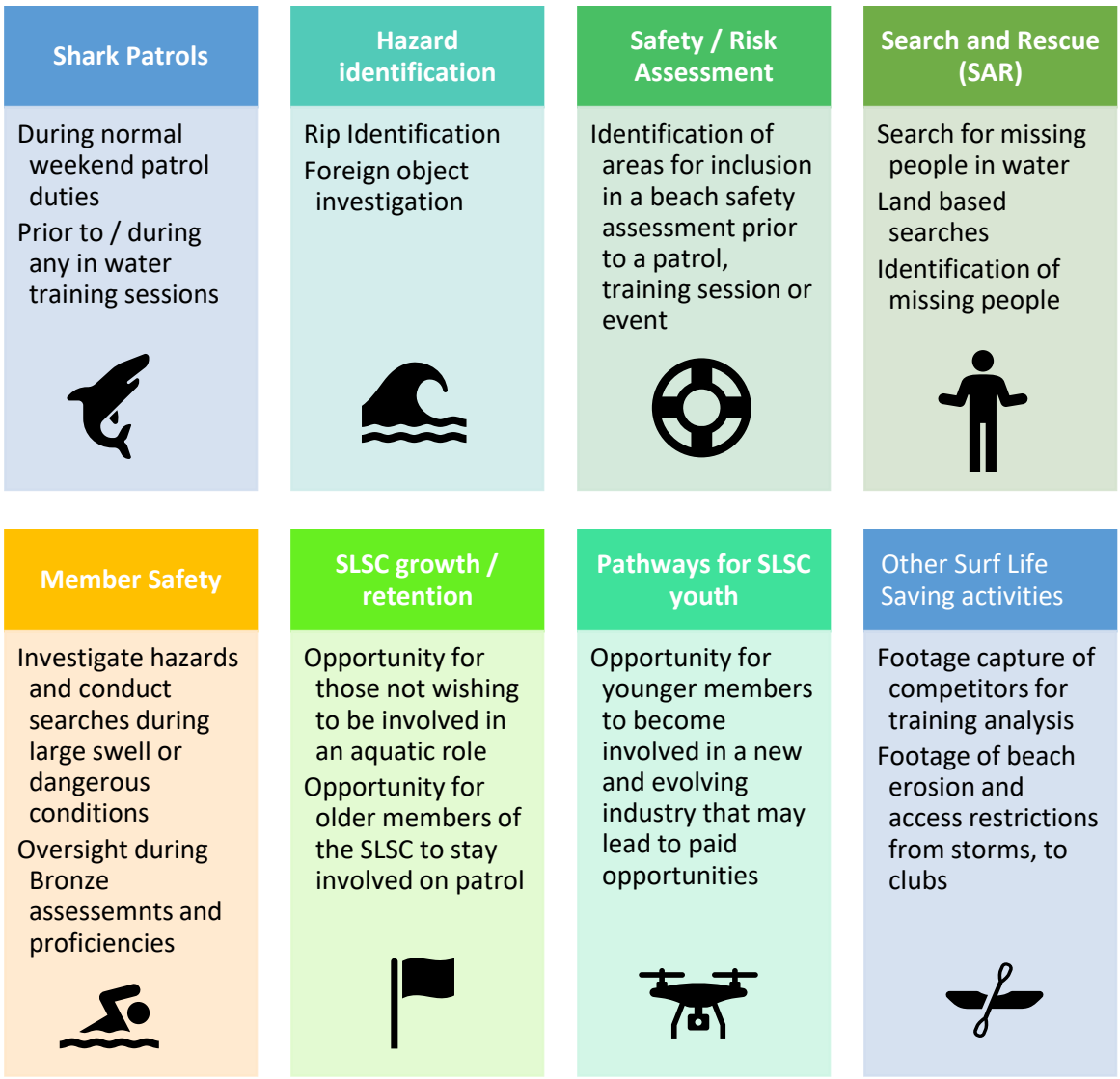

Figure 1 Surf Lifesaving UAV operational examples

1 UAV Operations: What to Know First

1.1 Regulations

All UAV operations in Australia are governed by the Civil Aviation Safety Authority (CASA), which outlines the laws and regulations all operators and pilots must follow. Surf Life Saving NSW (SLSNSW) has incorporated these requirements into its UAV Standard Operating Procedures and Remotely piloted aircraft Operators Certificate (ReOC) Manual.

1.2 Standard Operating Procedures

Members flying any size of UAV will need to abide by:

- SLSNSW UAV Standard Operating Procedures (SOPs), and
- SLSNSW Public Safety SOPs

The UAV SOPs provide guidance for the safe and effective operation of UAVs under SLSNSW and are aligned with Civil Aviation Safety Regulations (CASR) Part 101 – Standard Operating Conditions. The three main CASA standard operating conditions that every person flying a UAV must follow (not just surf lifesavers) include:

- An operational UAV must always be 30m or further away from any person, and never over a person,
- A UAV cannot be flown more than 120m or 400ft high, and
- A UAV must be kept within visual line of sight (VLOS) – a person must be able to always see the UAV with their naked eye (no binoculars)

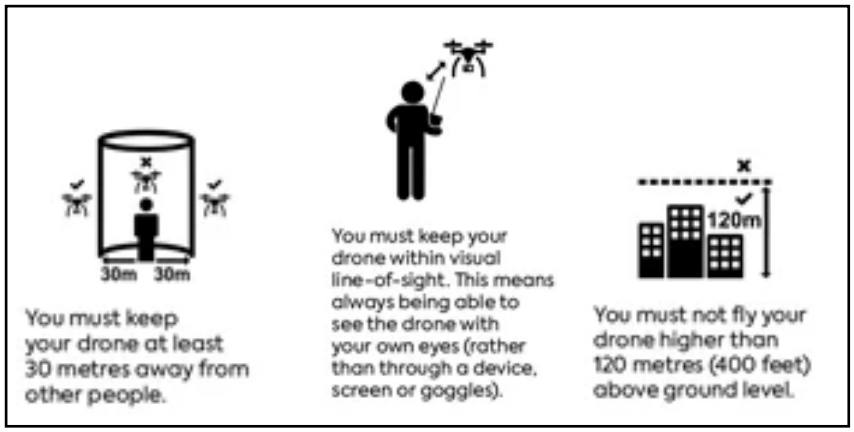

Figure 2 UAV Standard Operating Conditions

Given the high visibility and recognisability of surf lifesaving members and UAVs within the community, **it is essential that these rules are consistently upheld**.
The UAV SOPs are live documents, subject to updates. Once printed, a version should be considered non-current. The most up-to-date SOPs can be accessed via:

- the Document Library within the SLSNSW job planning software portal e.g. AVCRM

The SLSNSW Public Safety SOPs cover all surf lifesaving operations within SLSNSW and can be found online: https://www.surflifesaving.com.au/members/resources/public-safety-standard-operating-procedures/

1.3 UAV Classifications

CASA classifies UAVs based on their weight, with heavier UAVs subject to stricter regulations due to their increased potential to cause damage in the event of a crash. The three categories of UAV that surf lifesaving operates are identified in Table 1.

Type	Example
Micro (< 250g)	**Mini Mavic 4 pro** 
Very Small (250g < UAV < 2kg)	**Mavic 3 Enterprise** 
Small (2kg < UAV < 25kg)	**Matrice 30T** 

Table 1 UAV type classifications

The UAVs used on the beach for patrols are typically either the micro or very small category. The small UAVs are usually reserved for emergency response and deployments.

For operations involving small-category UAVs, additional conditions apply, which are outlined in a separate manual called a ReOC Operations Manual. This manual takes precedence over the general SOPs and will be provided to pilots who require it.

1.4 Airspace

Airspace is classified according to its function and proximity to airports, and not all classifications allow for UAV operations. Most Surf Life Saving Clubs (SLSCs) operate in

uncontrolled (Class G) airspace where UAVs are permitted; however, clubs located near airport runways may face restrictions. For instance, Coogee Beach lies within the runway splay of Sydney Airport, limiting UAV operations in that area. Another example is Sawtell Beach, which is located close to Coffs Harbour airport, and thus requires special area approval from CASA to allow pilots to fly UAVs. In addition, pilots must hold a Remote Pilots License.

It is essential to check airspace restrictions before purchasing a UAV to ensure it can be flown legally in your intended area of operation. To determine the airspace classification of a specific location, SLSCs may:

- Contact aviation@surflifesaving.com.au for an airspace assessment by SLSNSW, or
- Use the online tool OK2Fly for self-assessment.

2 Purchasing UAVs for your club

2.1 Recommended UAVs and ancillary equipment

Three UAVs have been selected by AUAVS following a review of suitable models for the beach environment. The recommended UAVs for club purchase include:

- DJI Mini Mavic 4 pro (< 250g), and
- DJI Mavic 3 Enterprise series (3E – Enterprise or 3T - Thermal) (<2kg)

The following supporting equipment (Table 2.) is also required to support the safe use and maintenance of UAVs.

Safety Equipment	Airband Radio Landing Pad Safety Cones Safety Signage
Cleaning Equipment	Contact Cleaner Cleaning cloth Cleaning Brush

Table 2 UAV ancillary equipment

SLSNSW, in partnership with its commercial arm, the Australian UAV Service (AUAVS), secures substantial discounts on UAVs through bulk purchasing. Each year, AUAVS conducts a competitive Request for Quotation (RFQ) process to secure the most cost-effective supplier for UAV equipment, maintenance, and support services. UAV Routine maintenance

2.1.1 UAV Maintenance

All UAVs require routine maintenance, which SLSNSW coordinates on behalf of Clubs and Branches. This process involves the freight pickup of equipment from a Club, complete maintenance, and equipment freighted back to the Club. This is partly automated through the job planning software, with management provided by SLSNSW in collaboration with Branch UAV Coordinators and Club UAV Officers. Maintenance is carried out by a designated service provider, which can offer discounted rates thanks to the bulk servicing arrangements facilitated by SLSNSW and AUAVS.

2.1.2 UAV Repairs and defects

If a UAV is damaged during operations, SLSNSW will, where possible, seek replacement under warranty or DJI Enterprise Care via the maintenance provider. However, crashes or damage attributed to Pilot/Operator error may result in additional costs being passed on to the SLSC.

2.1.3 UAV Incidents

All accidents or incidents must be reported immediately to the Chief Remote Pilot, and an incident report must be completed. The incident form is available in the job planning software, AVCRM, under the Safety Management System (SMS) section on the side menu.

2.2 Purchasing Process for Clubs

SLSNSW's UAV purchasing process is designed to deliver significant cost savings and make acquiring and maintaining UAVs as simple as possible for clubs. By leveraging bulk-buying power, the process provides access to discounted pricing while ensuring standardised equipment, maintenance, insurance, safety, and compliance across all clubs. Developed and refined over several years, this streamlined approach removes administrative burden from clubs and ensures they receive fully compliant, well-supported UAVs ready for patrol operations. The UAV purchasing process for clubs is documented in Figure 3.

Figure 3 Purchasing process for Clubs

It is not recommended to purchase UAVs externally. The recommended supplier includes all associated costs within the UAV purchase price. If requesting purchases externally the Club should be aware of several processes and additional costs and that should be accounted for.

- UAVs must be purchased from a DJI-authorised store or authorised dealer,
- SLSNSW branded stickering for the UAV kit is required, which may incur additional costs,
- CASA registration will be required to be undertaken by SLSNSW and will only occur if original purchase details from a DJI authorised store / dealer are provided,
- Repairs and routine maintenance need to be undertaken by a DJI authorised repair center,
- UAVs must receive minor maintenance at 50 flight hours and major maintenance at 200 flight hours, as per SLSNSW UAV SOPs
- Additional ancillary equipment is required to be purchased, and branded with stickering e.g. airband radio in particular

3 Training Requirements for UAV Operations

3.1 How to become a UAV Operator or Pilot

A member must be 16 years or older and a current financial member of a SLSC to be allowed to express their interest in undertaking UAV training. Current members can put in an Expression Of Interest (EOI) at the following location: Volunteer UAV Operator - Application

The EOIs are collected at SLSNSW and provided to the relevant Branch UAV Coordinator who will then organise training dates, usually on an as needs basis. Priority is given to members from clubs that have a UAV, or are about to purchase a UAV, as access to the asset will greatly improve the retention of those skills.

On occasion, a Branch may also seek EOIs from members to undertake UAV training.

There are two qualifications that will allow a member to start flying UAVs for surf lifesaving. These include:

- UAV Operator (non-RePL) award (delivered internally), and
- UAV Pilot (RePL) award (delivered externally)

3.1.1 UAV Operator

The UAV Operator (non-RePL) award is achieved by completing a 1–2 day internally delivered training program known as the Operator Induction Program (OIP), facilitated by SLSNSW. This course is specific to Surf Life Saving and does not include nationally recognised units of competency.

Training involves a knowledge component and practical activities to run attendees through SLSNSW operations and beach flying specifics. The entire program is a fantastic way to develop member knowledge of UAV theory/Air Law, types and components of UAVs and SLSNSW standard operating procedures.

The course requires some online work (approximately 4 hours) and 1-2 days' face-to-face delivery. This course is delivered by UAV Instructors at a maximum ratio of 6 students per instructor.

If Clubs would like to know more about Branch training, they should contact their Branch UAV Coordinator about upcoming courses.

3.1.2 UAV Pilot

The UAV Pilot (RePL) award is a more advanced qualification, obtained by completing a 5-day Remote Pilot License (RePL) training course delivered by an accredited training provider. This qualification is recognised by CASA. Members can undertake this training independently to surf lifesaving, or they can apply for one of the limited numbers of available training spots which are advertised each year to the membership. SLSNSW funded training will preference those members who have obtained their UAV Operator award.

3.1.3 UAV Proficiency

All UAV operators / pilots must maintain annual proficiency in their award to remain eligible to fly a UAV for surf lifesaving. This consists of a theory quiz and a practical flight, which must be completed prior to 31st December of that year.

3.2 Advanced UAV Pilot training

To be eligible for advanced flying training, eligible pilots must hold their UAV Pilot award (RePL) and demonstrate competency and attention to detail, as evident through their AVCRM jobs and flight records. Once inducted in different types of advanced flying, pilots will be added to Branch Call Out Teams and may be deployed as part of an emergency response. All advanced UAV flying must be conducted under the organisation's ReOC, with each job requiring approval from the Chief Remote Pilot.

3.2.1 Small Type UAVs

To conduct flying with small type UAVs (>2kg and < 25kg) e.g. Matrice 30T, pilots must complete a ReOC Induction. The induction, which is delivered internally, involves a theory component, UAV type induction and a practical flight supervised by the Chief Remote Pilot or Endorsed Delegate – UAV. Due to the limited number of small UAVs available this type of induction is limited and on an as needs basis.

3.2.2 Night flying

To conduct UAV operations at night, pilots must first complete a Night Flying Induction. The induction, which may be delivered internally by qualified members or through an

external provider and is an 8-hour program comprising both theory and practical night-flying components.

3.3 How to become a UAV Instructor

UAV Instructors are specifically qualified to deliver UAV training courses to members. Their responsibilities include delivering the Operator Induction Program (OIP) which allows members to become UAV Operators. Instructors may also conduct annual proficiency checks.

The primary pathway to becoming a UAV Instructor is through the completion of a 2-day Train the Trainer course. These courses are advertised to the membership annually. An additional pathway, currently in development (due late 2025), will recognise existing training qualifications and require completion of a UAV-specific instructional module.

Following either pathway, probationary UAV Instructors must then co-deliver a UAV training course with an endorsed UAV Instructor, to receive formal endorsement. Note that this qualification does not include nationally recognised units of competency and is designed specifically for internal SLSNSW training purposes.

To remain proficient as a UAV Instructor, the Instructor must deliver at least one course annually and maintain currency in a UAV award.

4 Roles and Responsibilities

4.1 UAV Operator/Pilot

The UAV Operator or Pilot is responsible for ensuring the safe and compliant operation of the UAV. Key responsibilities include:

- Completing pre- and post-flight checks using the assigned job planning software system, AVCRM.
- Conducting all flights in accordance with UAV SOPs.
- Always maintaining the safe operation of the UAV.
- Adhering to the Standard Operating Conditions as outlined in CASA legislation.
- Performing post-flight cleaning of the aircraft and ensuring any battery with less than 30% charge is placed on charge.

4.2 Club UAV Officer

Each Surf Life Saving Club (SLSC) is required to appoint a Club UAV Officer to act as the primary point of contact for all UAV-related communications and to oversee UAV operations at the club level.

The Club UAV Officer is responsible for:

- Assisting the SLSNSW UAV Maintenance Officer with the maintenance and servicing of the UAV and all associated equipment at the club.
- Providing support and guidance to local UAV Operators and Pilots.
- Conducting beach inductions for new UAV Operators and Pilots.

Candidates for the Club UAV Officer role should meet one or more of the following essential criteria:

- Hold a UAV Operator (non-RePL) or UAV Pilot (RePL) award, or
- Possess external UAV experience, and
- Have a background or operational understanding of Surf Life Saving.

The Branch UAV Coordinator and SLSNSW team can assist in identifying any members in a SLSC who may already meet these requirements.

4.3 Club Captain / Club Director of Lifesaving

The Club Captain or Club Director of Lifesaving should actively support the Club UAV Officer in the successful integration and operation of UAV activities. This support includes:

- Facilitating the integration of UAV operations into existing lifesaving patrols and procedures.
- Ensuring adequate storage and charging facilities are available for UAV equipment, located in a safe and secure area.

4.4 Branch UAV Coordinator

The Branch UAV Coordinator is responsible for overseeing and supporting all Surf Life Saving UAV membership operations within their designated Branch. This role plays a key part in ensuring consistency, safety, and coordination across volunteer UAV activities.

Key Responsibilities:

- Maintain regular communication with Surf Life Saving Clubs across the Branch.
- Engage with volunteer UAV Operators / Pilots to support the effective delivery of UAV operations.
- Assist with maintenance logistics and asset storage as required.
- Support the scheduling of training programs and annual proficiency checks.
- Ensure data collection and reporting requirements are completed and maintained as per guidelines.
- Provide ongoing operational support and guidance to Clubs and volunteer UAV members.
- Promote and monitor compliance with relevant SLSNSW policies, Standard Operating Procedures (SOPs), and regulatory requirements.

4.5 Organisational Structure

UAV Operators/Pilots report to the Club UAV Officer, who in turn reports to the Branch UAV coordinator. The Club UAV officer works with the Branch UAV Coordinator and the SLSNSW UAV Team. Please see the following reporting structure in Diagram 2.

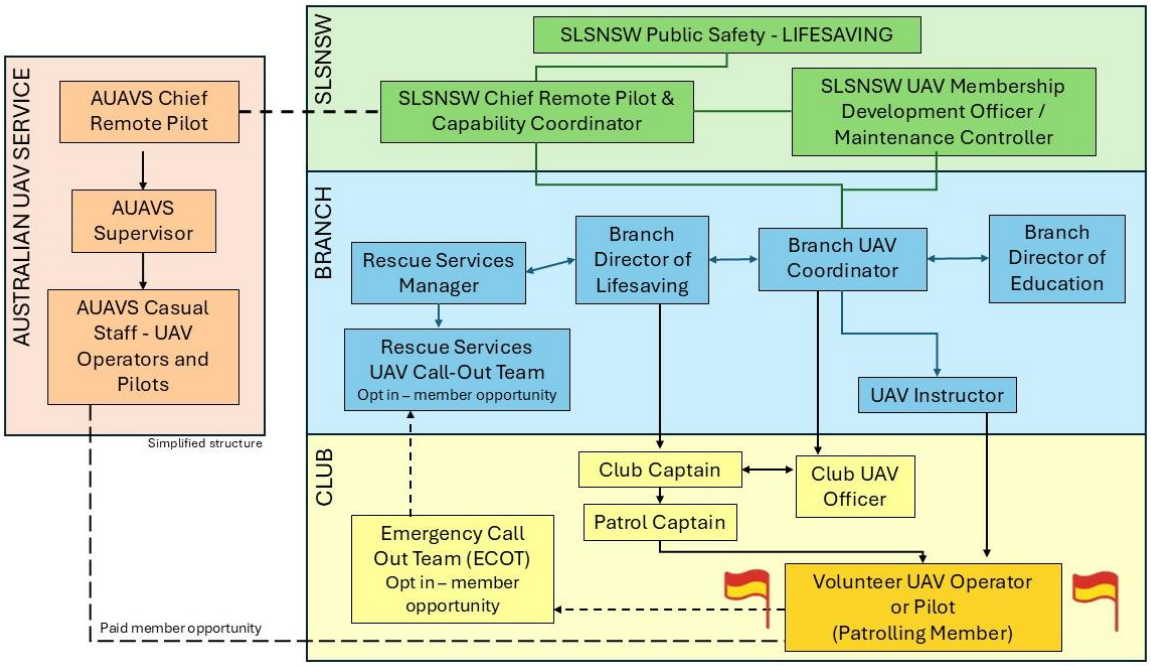

Figure 4 Organisational structure for UAV operations

5 Integrating UAVs into Lifesaving Operations

5.1 Between the Flags on Patrol

UAVs are an asset that can enhance the effectiveness and situational awareness of surf lifesaving patrols. Existing patrol members are encouraged to obtain their UAV qualifications, enabling them to operate UAVs as part of their regular patrol duties. By integrating UAV capabilities into standard patrol operations, clubs can improve surveillance, support proactive risk identification, and enhance overall beach safety.

5.1.1 UAV Landing and Take-off Location

CASA regulations state that the UAV must remain 30m away from any people, this also means you cannot fly over people. Below are some suggested locations where a take-off and landing area may be positioned, on patrol, depending on the population of your beach (Image 2.).

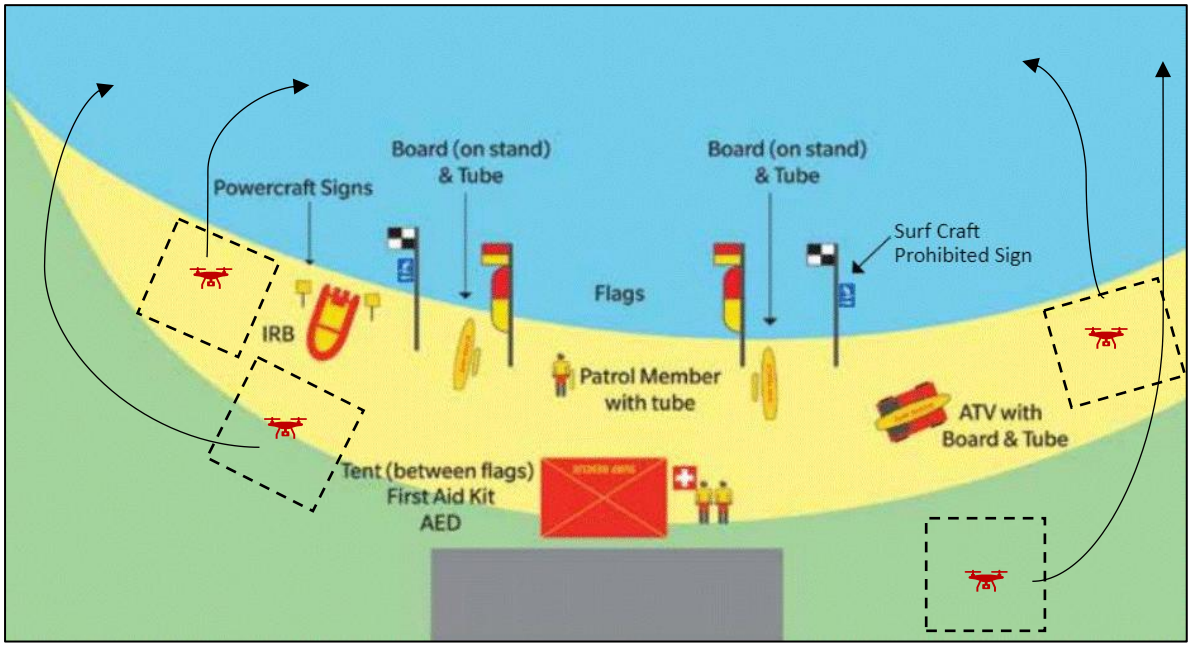

Figure 5 Examples of UAV take-off locations when on patrol

Tips:

- The take-off area does not need to remain free of people when the UAV is not in the area, only when taking off and landing,
- Utilise existing areas already cordoned off e.g. IRB exclusion area (image 3.)
- Vegetated sand dunes are great to use as corridors for flying to the ocean as they typically have no people in them.
- The pilot needs to be able to always see the UAV but does not need to be on the beach to do this (image 4.).
- Headlands may also provide a suitable location from which to fly and reduce proximity to people.

Photo 1 Take off location near IRB exclusion area
Photo 2 Take off location on grassed area near club

5.1.2 Common questions

What do UAV Operators and Pilots wear?
UAV Operators and Pilots form part of the patrol and therefore wear a patrol uniform.

Are there any set requirements to fly a UAV on a patrol?
No, members can fly the UAV as needed.
Casual pilots employed with the Australian UAV Service must fly 2 x 20-minute flights every hour, but this is not the same for volunteer patrol members.

Can someone patrol with only their UAV award?
Yes, if they also hold their SLS radio operator certificate as well. These members can patrol as award members, much like members who may only hold a first aid certificate can also patrol as an award member.

5.2 Beyond the Flags operations

5.2.1 Emergency Call Out Teams (ECOT)

UAVs are a valuable asset during emergency call outs, and clubs with UAV-qualified members should ensure some are included on their ECOT. As call outs may require flying at the member's home beach outside of patrol hours or at nearby locations, participating members must be capable and confident UAV Operators or Pilots.

5.2.2 Rescue Services

Within each Branch, the Branch UAV Coordinator will identify a group of UAV award holders suitable for deployment to larger-scale emergencies. These members must be 18 years or older, competent UAV Pilots or Operators, and capable of working independently in dynamic environments. UAV award members can also request to become part of Rescue Services in their Branch through the following form:
https://forms.office.com/pages/responsepage.aspx?id=crSTxq-TyUSPLmDyslwW-SquAL_oAmxEgO0Z2gWzGlFURUo3VzJOUFVHS0RWVFVHSDk3TDNETVhZRC4u

5.2.3 Search And Rescue Exercises (SAREXs)

Each year there are multi agency SAREXs held across the state. These include opportunities for members to practice their emergency response skills in a safe training environment. Prior to these events an email will be sent to suitably qualified members to provide an Expression of Interest to participate in these events.

Appendix 1. UAV Purchasing Options

The table below outlines the types of UAVs available to clubs through various funding options.

	Mini Mavic 4 Pro	Mavic 3 Enterprise	Mavic 3 Thermal
Type	Micro RPA (<250g)	Very Small RPA (<2kg)	Very Small RPA (<2kg)
			
Battery flight time	34 mins	45 mins (no wind)	45 mins (no wind)
Wind Resistance	10.7 m/s	12 m/s	12 m/s
Weight	249g	915g	920g
Pixels per image	48 Mp	20 Mp Mechanical Shutter	48 Mp
Zoom	1-3 x	56 x hybrid zoom	56 x hybrid zoom
Options		Speaker	Speaker
Thermal Range	-	-	-20° to 150° C
Benefits	Small, cheaper, not hindered by airspace restrictions.	Zoom, longer flight time, stronger wind resistance	Same as Mavic 3E. Addition of thermal capability.
Drawbacks	No Speaker	Higher price	Higher price
Use	Patrols, Emergency Callouts	Patrols, Emergency Callouts	Patrols, Emergency Callouts, Night callouts
SLS Awards	UAV Operator or UAV Pilot		Day Flying – UAV Operator / Pilot Night Flying – requires UAV Pilot and Night Induction
Funding Options	• Club Lifesaving Equipment Grant (CLEG), • Beach Safety and Equipment Fund (BSEF), • Sponsorship, • Clubs Funds	• Beach Safety and Equipment Fund (BSEF), • Sponsorship, • Club Funds	• Beach Safety and Equipment Fund (BSEF), • Sponsorship, • Club Funds

Appendix 2. Other funding streams to purchase UAVs

Sponsorship

For many SLSCs, sponsorship is an avenue that can be followed to purchase UAVs. SLSNSW supports this and can provide options that might make the purchase of UAVs more appealing to sponsors. Please note that all sponsorship agreements must be made between the SLSC and sponsor, SLSNSW must not be named in the agreement.

Sponsorship options:

- Custom A-Frame warning sign with sponsors logo and name on it
- Custom skinning on the UAV
    - Logo of the Sponsors on the UAV in addition to SLS Colours
- Custom High-Vis Vests with sponsors logo on it
- Custom Landing pads with sponsors logo
- Custom UAV Tents with Sponsors Logo

Please note all custom designs come at an additional cost which will be quoted on an individual basis.

Contact us at aviation@surflifesaving.com.au, and we can supply further information

Image 5. Swansea Belmont SLSC with their UAV sponsored by the Lions Club