

Name: Redlands Aero Modellers (RAMS) Flying Field Address: Henry Ziegenfusz Park, 143-195 Fitzroy Street, Cleveland, Qld 4163 Date: 28/09/2022

Facilitator: Michael Hyde.

Purpose: To provide a tool that documents hazards and risks associated with the operations of Redlands Aero Modellers (RAMS), at Henry Ziegenfusz Park (the Flying Field), so that the consequences and likelihood of a risk event occurring can be analysed and control measures put in place to mitigate that risk to a level that is as low as reasonably practicable. (ALARP)

This Risk Assessment is to be available to all members and shall be used in conjunction with all matters associated with safety, hazards and risks already identified and any that are yet to be identified.

Maintenance, Monitor and Review:

The Risk Assessment may be modified/updated at any time should an incident/accident occurs, or matter arises that may require review of the Club's risk control measures to ensure those risk control measures remain fit for purpose and maintain at level of risk that is ALARP.

When a safety concern is brought to the attention of the committee it will be risk assessed by members and the Risk Assessment will be updated to include that assessment and any actions that are required to maintain a level of risk that is ALARP.

The Risk Assessment shall be reviewed at least once every twelve months by members to identify any deficiencies resulting from change and updated to as required to maintain a level of risk that is ALARP.

Overview of the Outcomes:

The Risk Assessment process has recognised a number of hazards and associated risks which have been systematically analysed and control measures identified and implemented. It is considered that the RAMS Risk Assessment is robust enough to ensure that all risks identified are mitigated to a level that is ALARP. It should be noted that when considering the consequences of a risk event we have taken the approach of a worse case scenario, which in turn means that not all risk can be controlled or mitigated to a low level requiring ongoing mitigation controls, vigilance and review. We believe that this is the appropriate approach and the club's safety record supports that view.

Definitions:

- Club Redlands Aero Modellers (RAMS)
- Flying Field All of the land, structures, vehicles and airspace within the boundaries of Henry Ziegenfusz Park defined by the Redland City Council licence and the CASA Approved Flying Area. See appendix A.
- Flying Days All of the land, structures, vehicles and airspace within the boundaries of Henry Ziegenfusz Park defined by the Redland City Council licence and the CASA Approved Flying Area. See appendix A.
- Other Flying Sites Designated flying sites that may be visited by club members from time to time on condition that the owners of the property have provided permission to fly and with due regard to access, facilities, site rules and conditions, public and member safety and potential property damage.



- Flying days Designated dates and times when Club flying is permitted at the Flying Field. The Club has permission from Redland City Council in conjunction with the Cleveland/Thornlands Cricket Club and Redlands Hockey Club to use Henry Ziegenfusz Park for flying activities on designated dates and times. Other dates and times may be negotiated between the Management Committee and Redland City Council. Redland City Council may change the status of the park from "open" to "use at your own risk" or "closed" due to weather or maintenance issues. The Management Committee will notify members of changes to flying days and the park status. Members of the public have full access to the Flying Field at all times.
- Aircraft For flying activities associated with the Club at the Flying Field, an aircraft is an unmanned radio-controlled model aircraft that is powered by an electric motor.
- **AGL** Above ground level.
- Buddy System A system using 2 aircraft radio control transmitters that are linked together so that the instructor has the master transmitter and the visitor or trainee pilot has the slave transmitter. Either transmitter can be used to control the aircraft at the discretion of the instructor who may take full control of the aircraft at any time.
- Automatic self-leveling A system built into an aircraft that when active will only allow the pilot to control pitch and roll within set limits and will automatically self-level the aircraft if the transmitter controls are let go.
- Club aircraft An aircraft that is owned by the Club specifically to facilitate trial flights and training flights. Club aircraft will only be operated by the Chief Instructor, Instructor or Assistant Instructor using a buddy system. Club aircraft may be flown without the buddy system to commission, evaluate, test, adjust aircraft performance, trim and calibrate as required to set up and maintain the aircraft in an airworthy condition ready for use.
- Member of the Public A Person who is not a club member, associate member or visitor and has no association with the club.
- Visitor A person who is not a club member attending a flying day club meeting who has correctly provided details and signed the visitor book. A visitor may sign in and attend club meetings on 4 occasions only and may receive introductory trial flights if available. Further attendance and training flights are conditional on becoming a club member.
- Prospective Club Member/Associate Member A person who is not a club member but has paid the membership fee and provided an application form to become a club member/associate member, but has not yet been accepted by the Management Committee or recorded in the MAAA member register.
- Club Member A person who is a paid-up member, recorded in the MAAA member register.
- Associate Member A person who is a paid-up associate member, recorded in the MAAA member register.
- Visiting Pilot A person who is not a club member, attending a club meeting who has correctly provided details and signed the visitor book, and provided evidence to the Duty Officer that they are a full member of a MAAA associate club and have achieved at minimum a MAAA Bronze rating. A visiting pilot may operate their own aircraft



solo provided the aircraft are within the scope of their MAAA rating and must comply with Duty Officer directions and all rules governing the Club operations. A visiting pilot may sign in and attend flying day meetings on 4 occasions only. Further attendance is conditional on payment of the associate membership fee, application to become an associate member, acceptance by the Management Committee and their details recorded in the MAAA member register.

- Trainee Pilot A club member who has not yet achieved at minimum a MAAA Bronze rating. A trainee pilot may only operate aircraft using a Buddy System under instruction of the Chief Flying Instructor, Instructor or Assistant Instructor. A trainee pilot is required to maintain a log book up to and including their bronze rating test and record dates and details of training provided, which must be signed off by the Chief Flying Instructor, Instructor providing that training.
- Trainee Pilot (Solo) A club member who has not yet achieved at minimum a MAAA Bronze rating, who has been assessed by the Chief Flying Instructor or Instructor to be suitably advanced in their training that they are capable of operating their own aircraft solo without a Buddy system with the intention of practice and training for the rating test, and provided they are accompanied in the Pilot Box by either the Chief Flying Instructor, Instructor or Assistant Instructor. The Chief Flying Instructor or Instructor or Instructor or Instructor or Assistant Instructor. The Chief Flying Instructor or Instructor or a solo rating, they will be encouraged to use their own aircraft except where the Chief Flying Instructor, Instructor considers that further instruction using a Club aircraft with a buddy system is absolutely necessary. Other conditions may apply.
- Pilot A club member who has achieved at minimum a MAAA Bronze rating who may operate their own aircraft solo provided the aircraft are within the scope of their MAAA rating.
- **Restricted Pilot** A club member who has not yet achieved a MAAA Bronze rating and has little prospect of obtaining such a rating due to a disability, health or age-related issue, who has been tested by the Chief Flying Instructor or Instructor and demonstrated that they are capable of meeting the minimum bronze rating test requirements operating their own aircraft in automatic self-leveling mode only; or, it is a pilot who is considered by themselves or the Chief Flying Instructor, or Instructor or the Management Committee to be no longer capable of meeting the minimum bronze rating standard unless they operate their own aircraft in automatic self-leveling mode only. A Restricted Pilot may operate their own aircraft solo provided the aircraft is of light weight foam construction with a maximum take-off weight not to exceeding 2 kg, operated in automatic self-leveling mode only, and the fail-safe condition is automatic self-leveling mode with the motor off. Operation in any other mode is not permitted unless the Restricted Pilot is accompanied in the pilot box by the Chief Flying Instructor. Instructor A Restricted Pilot classification is subject to Management Committee approval and is a Club classification that is only recognised at the Club Flying Field, and is not recognised by the MAAA or any other club. The Restricted Pilot may request assistance in the Pilot Box from any other Pilot. Other conditions may apply. It is considered that the Restricted Pilot classification is similar to a Restricted Vehicle Driver's License, permitting a limited number of members the opportunity to enjoy or continue to enjoy club flying with imposed safety limitations, whilst maintaining risk to a level that is ALARP.
- Chief Flying Instructor A club member who has achieved a MAAA Instructor rating and has been appointed to the position of Chief Flying Instructor by the Management Committee to oversee all aspects of pilot training, and to instruct, assess and test Trainee Pilots for Bronze rating, and Pilots for Silver and Gold ratings. The Chief Flying Instructor will review Trainee Pilot's Log Books and sign off training provided. The Chief Flying Instructor will notify the Management Committee when a Pilot passes a Bronze, Silver or Gold ratings test. The Chief Flying Instructor will notify the Management Committee when a pilot is considered qualified to be an Assistant Instructor along with any special conditions to be applied.



- Instructor A club member who has achieved a MAAA Instructor rating who is not the Chief Flying Instructor but may from time to time at the request of the Management Committee, agree to temporarily fill the role of the Chief Flying Instructor. The Instructor may conduct all aspects of pilot training, instruct, assess and test trainee pilots for Bronze rating, and Pilots for Silver and Gold ratings. The Instructor will review Trainee Pilot's Log Books and sign off training provided. The Instructor will notify the Management Committee when a Pilot passes a Bronze, Silver or Gold ratings test.
- Assistant Instructor A club member who has achieved at minimum a MAAA Bronze rating who has demonstrated to the Chief Flying Instructor that they are suitably experienced, knowledgeable and skilled to undertake some aspects of training for the Bronze rating test. At a minimum the Assistant Instructor must attend the Chief Flying Instructor's Basic Safety and Theory Course and pass a multiple-choice written test to demonstrate they have adequate knowledge of Part 101 CASR, MAAA MOP, Policy and Recommendations and the Club By-Laws and Code of Conduct. Assistant Instructors are required to comply with the Chief Flying Instructor's guidelines. All Assistant Instructors must at a minimum be capable of delivering the following training, Introduction to learning to fly RC aircraft, Safety procedures, Transmitter and aircraft controls, Aircraft air worthiness and safety checks/procedures as detailed in the MAAA Instructors Handbook. Assistant Instructor may stand next to a Trainee Pilot Solo in the Pilot Box and provide instruction and advice whilst the Trainee operates their own aircraft with or without a Buddy system to practice for their bronze test rating. Additionally, Assistant Instructors may be considered by the Chief Flying Instructor as being suitably experienced, knowledgeable and skilled to conduct introductory trial flights and flight training using Club aircraft with a Buddy System. The Assistant Instructor will review Trainee Pilot's Log Books and sign off training provided. Assistant Instructors will not conduct MAAA rating tests. Other conditions may apply. The Chief Instructor will notify the Management Committee when a Pilot is considered qualified to be an Assistant Instructor and the Management Committee reserves the right to accept or reject that nomination. Upon acceptance the appointment will be confirmed and recorded.
- Duty Officer A Club member who has achieved at a minimum a MAAA Bronze rating who on flying days is responsible for ensuring that members and visitors follow safety, field layout and aircraft movement procedures outlined in in the RAMS By Laws and accompanying documentation on the RAMS Website and Flight Operations signage board. The Duty officer will ensure that the flying field is correctly set up and visitors and visiting pilots are correctly signed in and briefed. Flying may not commence unless a Duty Officer is present and their name card is displayed on the Duty Officer Board. A Duty Officer leaving the Flying Field must notify pilots of their intention and remove their name card from the Duty Officer Board. The remaining pilots must select a new Duty Officer and ensure that person's name card is displayed on the Duty Officer. Members must follow the rulings of the duty officer without argument.
- Heavy Model Aircraft Aircraft with a weight greater than 7 kgs and less than 25 kgs as defined by MAAA MOP014.
- Operations All tasks and activities associated with the operation of RC model aircraft by members of RAMS, visitor flyers and visitors.
- MOP Manual of Procedures.
- RCC Redland City Council.
- CASA Civil Aviation Safety Authority.
- MAAA Model Aeronautical Association of Australia.



- MAAQ Model Aeronautical Association of Queensland.
- Hazard Something that has the potential to do harm to people, property, operations, the environment, finances and reputation associated with the operation of RAMS.
- **Consequence** An undesirable risk event associated with a hazard.
- **Risk** The likelihood that an undesirable risk event will occur.
- ALARP A level of risk reduced to as low as reasonably practicable.



Table 1: Regulation, Policy, Guidelines and Recommendations

Is RAMS familiar with and does it comply with Part 101 CASR	Yes
Is RAMS familiar with and comply with MAAA Policy as defined in the MAAA MOP	Yes
Is RAMS familiar with and comply with relevant Federal, State and Local Government requirements	Yes
Is RAMS familiar with MAAA recommendations as defined in the MAAA MOP and has it documented decisions on how to apply relevant recommendations	Yes

By complying with regulations, policy, guidelines, and recommendations detailed in Table 1, it is generally accepted that risk is reduced to ALARP.

Principal Hazard: 1. The operation of unmanned radio-controlled model aircraft and associated systems at Henry Ziegenfusz Park, the flying field.

Other Hazards: 2. Electricity, 3. Gas, 4. Water, 5. Sun, 6. Wind, 7. Noise, 8. Break in/Vandalism, 9. Fire, 10. Hot tools, 11. Trips falls and spills, 12. Drugs and Alcohol, 13. Adverse health event or injury, 14. Golf Cart, 15. Fraud/Theft, 16. Non-compliance and/or Prosecution, 17. Insolvency, 18. Loss of members, 19. Loss of Club continuity.

Other Third Parties to Consider: 1. Members, 2. Visitors, 3. The public, 4. Residents and neighbours, 3. Environment, 4. Redland City Council, 5. CASA, MAAA, MAAQ.

Table 2: Date of next review - Around 12 months - Plus the date when that review was completed

Due	Comp	Due	Comp	Due	Comp	Due	Comp
30/06/2023	09/08/2023	30/06/24	02/05/2024	30/06/2025			
Due	Comp	Due	Comp	Due	Comp	Due	Comp

Table 3: Participants

Date	Name	Title	Date	Name	Title	Date	Name	Title
28/09/2022	Michael Hyde	Vice President						
28/09/2022	Dave Rogers	Instructor						
28/09/2022	John Tranter	Member						
28/09/2022	Sharne Andrews	President						
28/09/2022	Peter Moore	Member						
09/08/2023	Michael Hyde	Secretary						
02/05/2024	John Jujnovich	Vice President						
02/05/2024	Michael Hyde	Secretary						



Table 4: Risk Assessment Table

Hazard Number	Risk Event. What Could	Consequences for RAMS	Inhere Uncor	ent htrolled	d Risk	Risk Reduction Control Measures Implemented by RAMS	Resid Contr	ual Risl ols	k with	Comments, Further Actions and
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
1 Model aircraft operations	Aircraft strikes a person. Possible outcomes range from no injury to major injury, disability or death. Worse case consequences considered.	Inquiry, prosecution and regulatory constraints. Ban on flying. Liability and financial damages. Loss of RCC permit. Loss of reputation. Loss of members. Club closes.	5	3	8	All Club members operating aircraft must comply with: Part 101 CASR. CASA Approval of an Area for the operation of unmanned aircraft. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. Pilot Box Rules. Duty Officer Instructions. Specifically: Public have right of way. Flying is subject to favourable weather conditions. Flying field to be set up as per RAMS Pilot and Aircraft Movement Procedure with safety barriers, warning signs, aircraft arming area and aircraft disarming area. Aircraft must only be armed at the arming area. Armed aircraft must be disarmed at the disarming area. Armed aircraft to face away from people and or towards safety barriers. All aircraft must have fail-safe condition set and be checked for airworthiness prior to take off. 30 m exclusion zone around all persons except club flyers in pilot box may be 10 m behind an aircraft preparing to taking off. Flying only permitted within the flying field boundary. No flying over people, the pilot box, viewing area, hangar, private property, roads or parked cars. Maximum flying height is 400 ft AGL or 1000 ft AGL with a safety spotter. Pilots are required to keep clear of manned aircraft, reduce altitude to below 400 ft AGL and or land if a manned aircraft is operating in the area.	5	0	5	Medium Risk – Actions required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.



Hazard Number	Risk Event. What Could	Consequences for RAMS	Inhero Uncor	ent ntrolled	Risk	Risk Reduction Control Measures Implemented by RAMS	Residi Contr	ual Risk ols	k with	Comments, Further Actions and
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
1 Model aircraft operations	An aircraft propellor strikes a person resulting in possible injury requiring hospital treatment.	Prosecution and or regulatory constraint. Financial damages. Loss of RCC permit. Loss of reputation.	3	3	6	All Club members operating aircraft must comply with: Part 101 CASR. CASA Approval of an Area for the operation of unmanned aircraft. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. Pilot Box Rules. Duty Officer Instructions. Specifically: Public have right of way. Flying is subject to favourable weather conditions. Flying field to be set up as per RAMS Pilot and Aircraft Movement Procedure with safety barriers, warning signs, aircraft arming area and aircraft disarming area. Aircraft must only be armed at the arming area. Armed aircraft must be disarmed at the disarming area. Armed aircraft to face away from people and or towards safety barriers. All aircraft must have fail-safe condition set and be checked for airworthiness prior to take off. 30 m exclusion zone around all persons except club flyers in pilot box may be 10 m behind an aircraft preparing to taking off. Flying only permitted within the flying field boundary. No flying over people, the pilot box, viewing area, hangar, private property, roads or parked cars. Maximum flying height is 400 ft AGL or 1000 ft AGL with a safety spotter. Pilots are required to keep clear of manned aircraft, reduce altitude to below 400 ft AGL and or land if a manned aircraft is operating in the area.	3	1	4	Medium Risk – Actions required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.



Hazard Number	Risk Event. What Could	Consequences for RAMS	Inher Unco	ent ntrolled	l Risk	Risk Reduction Control Measures Implemented by RAMS	Resid Contr	lual Risl rols	k with	Comments, Further Actions and
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
1 Model aircraft operations	2 or more model aircraft collide with the possibility that damaged aircraft may be out of control and crash resulting in injury or property damage.	Prosecution and or regulatory constraint. Financial damages. Loss of RCC permit. Loss of reputation. Club closes.	4	4	8	All Club members operating aircraft must comply with: Part 101 CASR. CASA Approval of an Area for the operation of unmanned aircraft. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. Pilot Box Rules. Duty Officer Instructions. Specifically: Public have right of way. Flying is subject to favourable weather conditions. Flying field to be set up as per RAMS Pilot and Aircraft Movement Procedure with safety barriers, warning signs, aircraft arming area and aircraft disarming area. Aircraft must only be armed at the arming area. Armed aircraft must be disarmed at the disarming area. Armed aircraft to face away from people and or towards safety barriers. All aircraft must have fail-safe condition set and be checked for airworthiness prior to take off. 30 m exclusion zone around all persons except club flyers in pilot box may be 10 m behind an aircraft preparing to taking off. Flying only permitted within the flying field boundary. No flying over people, the pilot box, viewing area, hangar, private property, roads or parked cars. Maximum flying height is 400 ft AGL or 1000 ft AGL with a safety spotter. Pilots are required to keep clear of manned aircraft, reduce altitude to below 400 ft AGL and or land if a manned aircraft is operating in the area.	4	1	5	Medium Risk – Actions required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.



Hazard Number	Risk Event. What Could Happen	Consequences for RAMS	Inhere Uncor	ent ntrolled	l Risk	Risk Reduction Control Measures Implemented by RAMS	Resid Contr	ual Risk ols	: with	Comments, Further Actions and Responsibilities
	парреп		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
1 Model aircraft operations	In Club competition Flying where pilots may attempt to chop streamers, fly below a barrier or land closest to a marker. Aircraft flying in close proximity to other aircraft and obstacles have an increased risk of collision and or crash possibly resulting in injury or property damage	Prosecution and or regulatory constraint. Financial damages. Loss of RCC permit. Loss of reputation. Club closes.	4	4	8	All Club members operating aircraft must comply with: Part 101 CASR. CASA Approval of an Area for the operation of unmanned aircraft. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. Pilot Box Rules. Duty Officer Instructions. Specifically: Public have right of way. Flying is subject to favourable weather conditions. Flying field to be set up as per RAMS Pilot and Aircraft Movement Procedure with safety barriers, warning signs, aircraft arming area and aircraft disarming area. Aircraft must only be armed at the arming area. Armed aircraft must be disarmed at the disarming area. Armed aircraft to face away from people and or towards safety barriers. No armed aircraft behind the safety barriers. No armed aircraft behind the safety barriers. All aircraft must have fail-safe condition set and be checked for airworthiness prior to take off. 30 m exclusion zone around all persons except club flyers in pilot box may be 10 m behind an aircraft preparing to taking off. Flying only permitted within the flying field boundary. No flying over people, the pilot box, viewing area, hangar, private property, roads or parked cars. Maximum flying height is 400 ft AGL or 1000 ft AGL with a safety spotter. Pilots are required to keep clear of manned aircraft, reduce altitude to below 400 ft AGL and or land if a manned aircraft is operating in the area. Competition flying is an in-club rare activity occurring on average 2 or 3 times a year and lasting less than 2 hours. Competition flying is only permitted within the competition flying area away from the perimeter of the flying field so that a disabled aircraft will crash onto the flying field. Pilots may not engage in competition outside the competition rea. The competition event will be controlled by a Duty Officer dedicated to that event only.	4	1	5	Medium Risk – Actions required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP. Competition flying rules to be defined and Duty Officer appointed before an event.



Hazard Number	Risk Event. What Could	Consequences for RAMS	Inhere Uncor	ent ntrollea	Risk	Risk Reduction Control Measures Implemented by RAMS	Resid Contr	idual Risk with trols		Comments, Further Actions and
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
1 Model aircraft operations	Aircraft comes in contact with a manned aircraft possibly resulting in the manned aircraft crashing. Aircraft exceeds 1000 FT AGL and or leaves the approved flying area or a manned aircraft enters the approved flying area.	Inquiry, prosecution and regulatory constraints. Ban on flying. Liability and financial damages. Loss of RCC permit. Loss of reputation. Loss of members. Club closes.	5	1	6	All Club members operating aircraft must comply with: Part 101 CASR. CASA Approval of an Area for the operation of unmanned aircraft. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. Pilot Box Rules. Duty Officer Instructions. Specifically: Public have right of way. Flying is subject to favourable weather conditions. Flying field to be set up as per RAMS Pilot and Aircraft Movement Procedure with safety barriers, warning signs, aircraft arming area and aircraft disarming area. Aircraft must only be armed at the arming area. Armed aircraft must be disarmed at the disarming area. Armed aircraft to face away from people and or towards safety barriers. No armed aircraft behind the safety barriers. All aircraft must have fail-safe condition set and be checked for airworthiness prior to take off. 30 m exclusion zone around all persons except club flyers in pilot box may be 10 m behind an aircraft preparing to taking off. Flying only permitted within the flying field boundary. No flying over people, the pilot box, viewing area, hangar, private property, roads or parked cars. Maximum flying height is 400 ft AGL or 1000 ft AGL with a safety spotter. Pilots are required to keep clear of manned aircraft, reduce altitude to below 400 ft AGL and or land if a manned aircraft is operating in the area. Many aircraft are now fitted with a variometer and telemetry providing the pilot with altitude information reducing the risk of infringement. Some aircraft are fitted with Return to Home features that return the aircraft if for any reason line of sight is lost.	5	0	5	Medium Risk – Actions required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.



Hazard Number	Risk Event. What Could	Consequences for RAMS	Inhere Uncor	ent ntrolled	Risk	Risk Reduction Control Measures Implemented by RAMS	Resid Contr	ual Risk ols	k with	Comments, Further Actions and
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
1 Model aircraft operations	RC model aircraft strikes property possibly resulting in significant damage.	Prosecution and or regulatory constraint. Financial damages. Loss of RCC permit. Loss of reputation. Club closes.	3	3	6	All Club members operating aircraft must comply with: Part 101 CASR. CASA Approval of an Area for the operation of unmanned aircraft. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. Pilot Box Rules. Duty Officer Instructions. Specifically: Public have right of way. Flying is subject to favourable weather conditions. Flying field to be set up as per RAMS Pilot and Aircraft Movement Procedure with safety barriers, warning signs, aircraft arming area and aircraft disarming area. Aircraft must only be armed at the arming area. Armed aircraft must be disarmed at the disarming area. Armed aircraft to face away from people and or towards safety barriers. No armed aircraft behind the safety barriers. All aircraft must have fail-safe condition set and be checked for airworthiness prior to take off. 30 m exclusion zone around all persons except club flyers in pilot box may be 10 m behind an aircraft preparing to taking off. Flying only permitted within the flying field boundary. No flying over people, the pilot box, viewing area, hangar, private property, roads or parked cars. Maximum flying height is 400 ft AGL or 1000 ft AGL with a safety spotter. Pilots are required to keep clear of manned aircraft, reduce altitude to below 400 ft AGL and or land if a manned aircraft is operating in the area. The majority of aircraft are light weight foam construction with take-off weights not exceeding 2 kg with low kinetic energy and unlikely to cause much damage.	3	2	5	Medium Risk – Actions required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.



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	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
1 Model aircraft operations	Visitor or Trainee pilot loses control. RC model aircraft strikes a person or property resulting in injury or property damage.	Prosecution and or regulatory constraint. Financial damages. Loss of RCC permit. Loss of reputation. Club closes	5	4	9	Visitors are permitted up to 4 introductory trial flights using a Club aircraft with Buddy System under the control of the Chief Flying Instructor, Instructor or Assistant Instructor. The instructor may take control of the aircraft at any time. Trainee pilots receive flight training using a Club aircraft with Buddy System under the control of the Chief Flying Instructor, Instructor or Assistant Instructor. The instructor may take control of the aircraft at any time. Trainee pilots (Solo) have been assessed by the Chief Flying Instructor or Instructor as being capable of safely operating their own aircraft solo for practice and training toward the ratings test provided, they are accompanied in the Pilot Box by the Chief Instructor, Instructor or Assistant Instructor to provide assistance and training. Should the trainee pilot experience a problem the instructor may take control. Trainee pilots are required to maintain a log book to record and evidence training provided is within the scope of Part 101 CASR. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. The MAAA Instructor's Handbook.	5	0	5	Medium Risk – Actions required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.
2 Electricity	A person comes in contact with 240VAC in the hangar with the possibility of injury or death.	Prosecution and or regulatory constraint. Financial damages. Loss of RCC permit. Loss of reputation. Club closes.	5	2	7	All electrical work on 240 VAC systems is performed by a licensed electrician. A sub isolation board is installed for the hangar with isolation switch circuit breakers and RCD protection on all circuits except the refrigerator. A fire extinguisher is available and recorded in the asset register so that a reminder is generated to re-test. A licenced electrician tests the RCD protection every 12 months as required by the RCC licence.	5	0	5	Medium Risk - Monitor and review. No immediate action required.



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	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
3 Gas	Gas bottle or bar-b-que leaks gas resulting in a possible explosion or fire.	Financial damages. Loss of RCC permit. Loss of reputation. Damage to Club property. Club closes.	3	3	6	A 9 kg LPG gas cylinder is connected to the bar-b-que. The gas supplier is "Swap N Go". The supplier maintains cylinders in test. The cylinder is stored connected to the appliance and left turned off at the cylinder valve when not in use. Bar-b-que is certified. Gas is odourised to warn of a leak. Appliances are used outside in a well-ventilated area and stored in the hangar when not in use. A fire extinguisher is available and maintained in test as above.	3	0	3	Low Risk - Monitor and review. No immediate action required.
4 Water	Flood or inundation possibly results in property damage.	Loss of training aircraft and associated systems damaged or destroyed. Golf cart damaged or destroyed. Other damage to equipment and building. Financial loss.	4	0	4	Hangar is on an elevated slab approximately 1 m above surrounding ground level. The flying field is at ground level and rain water drains directly into the sea. There is no water supply in the hangar. Redland City Council 2070 Storm Tide Hazard Map indicates that the flying field may be subject to inundation due to a storm tide event once every 50 years.	4	0	0	Low Risk - Monitor and review. No immediate action required.
4 Water	Electric kettle is knocked over. Boiling water spills with the possibility of personal injury.	Duty of care only.	2	2	4	The electric kettle is used on a reasonably large stable bench top away from the edge and the lead does not trail over the edge. If the kettle was knocked over there is adequate room to dodge the spill.	2	1	3	Low Risk – Monitor and review. No immediate action required.
5 Sun	Sun damage to members and visitors.	Duty of care only.	1	3	4	Sunscreen and insect repellent are available in the hangar.	1	1	2	Low Risk – Monitor and review. Action required. Hangar Crew to ensure sunscreen and insect repellent are available in the hangar.



Hazard Number	Risk Event. What Could	Consequences for RAMS	Inhere Uncor	ent ntrollea	l Risk	Risk Reduction Control Measures Implemented by RAMS		Residual Risk with Controls		Comments, Further Actions and
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
6 Wind	Excessive wind may contribute to an RC model aircraft crash possibly resulting in personal injury and or property damage.	Inquiry, prosecution and regulatory constraints. Ban on flying. Liability and financial damages. Loss of RCC permit. Loss of reputation. Loss of members. Club closes.	4	3	7	All Club members operating aircraft must comply with: Part 101 CASR. CASA Approval of an Area for the operation of unmanned aircraft. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. Pilot Box Rules. Duty Officer Instructions. Specifically: Public have right of way. Flying is subject to favourable weather conditions. Flying field to be set up as per RAMS Pilot and Aircraft Movement Procedure with safety barriers, warning signs, aircraft arming area and aircraft disarming area. Aircraft must only be armed at the arming area. Armed aircraft must be disarmed at the disarming area. Armed aircraft to face away from people and or towards safety barriers. No armed aircraft behind the safety barriers. All aircraft must have fail-safe condition set and be checked for airworthiness prior to take off. 30 m exclusion zone around all persons except club flyers in pilot box may be 10 m behind an aircraft preparing to taking off. Flying only permitted within the flying field boundary. No flying over people, the pilot box, viewing area, hangar, private property, roads or parked cars. Maximum flying height is 400 ft AGL or 1000 ft AGL with a safety spotter. Pilots are required to keep clear of manned aircraft, reduce altitude to below 400 ft AGL and or land if a manned aircraft is operating in the area. Pilots are to consider weather conditions prior to flying.	4	1	5	Medium Risk – Monitor and review. No immediate action required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.



Hazard Number	Risk Event. What Could	Consequences for RAMS	Inhere Uncor	ent ntrollea	l Risk	Risk Reduction Control Measures Implemented by RAMS	Resid Contr	ual Risk ols	k with	Comments, Further Actions and Responsibilities
Happen			Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
6 Wind	High winds may cause trees or tree branches to fall on the hangar resulting in property damage.	Loss of training aircraft and associated systems damaged or destroyed. Golf cart damaged or destroyed. Other damage to equipment and building. Financial loss.	3	2	5	There are no large trees or overhanging branches that currently pose a threat to the hangar. The power supply to the hangar is underground.	3	0	3	Low Risk – Monitor and review. No immediate action required. Trees to be checked as part of the RA annual review.
7 Noise	Excessive noise may possibly lead to a complaint from residents adjacent the flying field. Damage to hearing.	Action by RCC. Possible loss of permit if noise complaints persist. Members may suffer hearing damage.	2	2	4	MAAA MOP062 Noise Policy and Guidelines. The Club is restricted to battery powered electric model aircraft that do not produce excessive noise. Flying times are restricted to Mondays, Wednesdays, Fridays and Sundays 7.30 a.m. until 12 a.m. Aircraft that are considered noisy must not be flown before 8 am weekdays and 9 am Sundays. Hearing protection is not required as noise exposure levels are well below 85 dBA. No noise complaints have been received.	2	0	2	Low Risk- Monitor and review. No immediate action required.
8 Break in and vandalism	Break in to the hangar. Equipment stolen from inside the hangar or vandalism.	Loss of training aircraft and associated systems stolen or damaged. Golf cart stolen or damaged. Other damage to equipment and building. Financial loss.	4	3	7	Entry door is fitted with a lock. Roller door is fitted with internal latches and metal bar that stops the door being lifted. A metal storage locker with lock is provided to store radios. Keys for the golf cart and locker are hidden in a secure location inside the hangar. The MAAA insurance policy covers some losses.	4	1	5	Medium Risk- Monitor and review. Action required. On leaving DO to ensure equipment is securely stored. Roller door is secured. Keys for golf cart and locker are secured. Entry door is locked. Risk is reduced to ALARP.



Number What Could RAM		Consequences for RAMS	Inherent Uncontrolled Risk			Risk Reduction Control Measures Implemented by RAMS	Residual Risk with Controls			Comments, Further Actions and Responsibilities	
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	nesponsionnes	
9 Fire	Fire in or associated with the hangar. Soldering iron left switched on. Electrical fire. Bush fire.	Loss of training aircraft and associated systems damaged or destroyed. Golf cart damaged or destroyed. Other damage to equipment and building. Financial loss.	4	3	7	Club flight batteries are stored is a fire-resistant battery safe. Radio transmitters with internal batteries not in use are stored in the metal storage locker which is kept locked. The golf cart is left on charge using the manufacturer's 240 VAC charger with auto charge control and power supply protected by an RCD. The golf cart batteries are lead acid posing little fire risk. Soldering irons are placed in fire-proof metal holders. The hangar is in a maintained park with mown grass. The work bench is fitted with fire-proof soldering iron holders. A fire extinguisher is available, maintained in test should a member be present when fire is detected.	4	0	4	Low Risk – Monitor and review. Action required. On leaving the DO to ensure that all flight batteries are placed in the battery safe. Radio transmitters are locked in the metal storage locker. Soldering irons are switched off and placed in their holders.	
10 Hot Tools	A number of tools, soldering iron, hot glue gun, heat gun, are all capable of inflicting burns	Duty of care.	2	3	5	Soldering irons must be placed in their holders between jobs and when not in use. Hot glue guns must be placed on their stands between jobs and when not in use. Heat guns must be left on the bench top until they have cooled down. All electrical tools must be unplugged when not in use. A first aid kit is available for treating minor injuries.	2	1	3	Low Risk – Monitor and review. Actions required.	
11 Trips Falls & Spills	A person at a Club meeting, trips or falls possibly resulting in an injury. A member falls from the ladder.	Duty of care. Financial damages.	3	3	6	The flying field, roads, carpark, pathways etc., are the responsibility of RCC and maintained in good condition. RAMS acknowledges a duty of care to report trip hazards to RCC. Currently RAMS are not aware of any such hazards. RCC advises when the park/flying field is considered unsafe to use and RAMS comply with that advice. The hangar floor is kept clean and clear of obstructions, any spills are cleaned up immediately. The club owns a ladder that is used to recover aircraft stuck in shrubs and trees. The ladder is built to Australian Standards and is used in accordance with the Ladder Safety Guide. A guide sticker is attached to the ladder and Ladder Safety Brochure is available in the hangar.	3	1	4	Medium Risk - Monitor and review. No immediate action required. Hangar Crew to ensure the hangar is kept tidy and report any trip hazards.	



Hazard Number	Risk Event. What Could	Consequences for RAMS	Inher Unco	ent ntrolled	l Risk	Risk Reduction Control Measures Implemented by RAMS	Resid Contr	ual Risl ols	k with	Comments, Further Actions and Responsibilities
	Happen		Consequence	Consequence Likelihood Risk Rating			Consequence	Likelihood Risk Rating		Responsibilities
12 Drugs, alcohol, medicines and medical conditions	Operating an aircraft under the influence of alcohol, illegal drugs, medicines or a medical impairment may possibly cause a crash resulting in personal injury and or property damage.	Inquiry, prosecution and regulatory constraints. Ban on flying. Liability and financial damages. Loss of RCC permit. Loss of reputation. Loss of members. Club closes.	4	3	7	All Pilots operating an aircraft and the Duty Officer must not be under the influence of alcohol, illegal drugs or medicines that may impair judgement. A Club member with a medical condition that may impair their ability to fly must not operate an aircraft. MAAA MOP055 Alcohol, drugs & medical condition policy.	4	1	5	Medium Risk – Monitor and review. Action required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.
13 Adverse health event or injury	A member or visitor may suffer an injury or heart attack.	Duty of care only	2	1	3	The hangar is equipped with a first aid kit and a defibrillator kit which requires no training to operate. If an ambulance is required, access to the Club and flying field is good.	2	1	3	Low Risk - Monitor and review. No immediate action required.
14 Golf Cart	Golf Cart crash possibly resulting in injury and property damage. Person struck by the vehicle.	Prosecution. Financial damages. Loss of Golf Cart. Loss of reputation.	3	1	4	Golf Cart is reasonably slow with good visibility. A reversing horn provides a continuous warning when reverse is engaged. The Golf Cart is driven on the flying field which is open with good visibility and few obstructions. The Golf Cart is not driven on public roads. The Golf Cart may only be driven by an adult member.	3	0	3	Low Risk – Monitor and review. No immediate action required.



Hazard Number	Risk Event. What Could	Consequences for RAMS				Risk Reduction Control Measures Implemented by RAMS	Residual Risk with Controls			Comments, Further Actions and Responsibilities
	Happen		Consequence	Likelihood	Risk Rating			Likelihood	Risk Rating	
15 Fraud & Theft	Committee member steals funds. Member steals cash from the honesty box.	Loss of funds from the bank account. Loss of funds from the honesty box. Club has insufficient funds to meet commitments. Club closes.	3	1	4	All 3 committee members review all invoices and approve all reimbursements. The honesty box is emptied every 3 months. The accounts are audited prior to the AGM. Committee meeting minutes and financial reports are available on the Web site.	3	0	3	Low Risk - Monitor and review. Actions require.



Hazard Number	Number What Could RAMS		Inher Unco	ent ntrolled	Risk	Risk Reduction Control Measures Implemented by RAMS	Resid Contr	ual Risl ols	k with	Comments, Further Actions and Responsibilities
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
16 Non- compliance or prosecution	CASA or RCC legal constraint or prosecution resulting from non- compliance. An accident results in an insurance claim that is refused by the insurer due to non- compliance.	Ban on flying. Loss of permit to use park. Financial penalty. Loss of reputation. Insolvency. Club closes.	5	3	8	All Club members operating aircraft must comply with: Part 101 CASR. CASA Approval of an Area for the operation of unmanned aircraft. MAAA Policy and MOP. RAMS By-Laws and Code of Conduct. RCC By-Laws and conditions. Pilot Box Rules. Duty Officer Instructions. Specifically: Public have right of way. Flying is subject to favourable weather conditions. Flying field to be set up as per RAMS Pilot and Aircraft Movement Procedure with safety barriers, warning signs, aircraft arming area and aircraft disarming area. Aircraft must only be armed at the arming area. Armed aircraft must be disarmed at the disarming area. Armed aircraft to face away from people and or towards safety barriers. All aircraft must have fail-safe condition set and be checked for airworthiness prior to take off. 30 m exclusion zone around all persons except club flyers in pilot box may be 10 m behind an aircraft preparing to taking off. Flying only permitted within the flying field boundary. No flying over people, the pilot box, viewing area, hangar, private property, roads or parked cars. Maximum flying height is 400 ft AGL or 1000 ft AGL with a safety spotter. Pilots are required to keep clear of manned aircraft, reduce altitude to below 400 ft AGL and or land if a manned aircraft is operating in the area.	5	0	5	Medium Risk – Actions required. All members are reminded that they are responsible for the safe operation of their aircraft. Duty Officer to ensure the flying field is correctly set up and members are complying with the control measures implemented to achieve and maintain a level of risk that is ALARP.



Hazard Number	Risk Event. What Could	Consequences for RAMS	Inher Unco	ent ntrolled	l Risk	Risk Reduction Control Measures Implemented by RAMS	Residual Risk with Controls			Comments, Further Actions and
	Happen Consequence Likelihood Risk Rating				Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
17 Insolvency	Club funds inadequate to meet debts.	Membership too low. Financial loss or penalty. Club closes.	5	1	6	Treasurer presents a financial report at each committee meeting and the AGM. Committee meeting minutes and financial reports are available on the Web site. Measures are considered adequate to protect against fraud and theft. (See above) Committee reviews membership numbers. Committee sets membership fees and charges to meet the budget requirements. Committee encourages new membership.	5	0	5	Medium Risk – Monitor and review.
18 Loss of members	Members leave due to dissatisfaction. Poor or inadequate training available. The CFI resigns due to overwork. New members not recruited.	Insufficient members to maintain the Club. Club closes.	5	2	7	It is expected members with more experience, knowledge and skill will assist and instruct members with less experience, knowledge and skill. More members to be encouraged/permitted to assist with training. Members are welcoming to new members and visitors. Web site provides information for visitors, prospective new members, new members and members. RAMS Flying Fun Day. New Member Pathway document. RAMS Welcome Pack. Structured training available. Social events. Member suggestion and comment box.	5	0	5	Medium Risk - Monitor and review. Actions. Members encouraged to take on the role of Assistant Instructors.
19 Loss of Club continuity	Failure to review and update MOP, By-Laws and Code of Conduct and Risk Assessment may possibly lead to non- compliance.	Inquiry, prosecution and regulatory constraints. Ban on flying. Liability and financial damages. Loss of RCC permit. Loss of reputation. Loss of members. Club closes.	5	3	8	 Prior to the AGM all committee members will review the following documents to ensure the Club is up to date, compliant and any issues requiring action are identified and actioned: MOPS. By-Laws and Code of Contact and Constitution. The Risk Assessment. When a new committee is formed a member from the previous committee will be invited to attend the first meeting following the AGM to provide an overview and update of matters relevant to Club continuity and compliance. 	5	0	5	Medium Risk -Monitor and review. Actions. Committee meeting agenda to include a standing item of Safety, with sub headings, Incidents and accidents and Risk Assessment review date.



Hazard Number	mber What Could RAMS Ur		Inher Unco	ent ntrollea	l Risk	Risk Reduction Control Measures Implemented by RAMS	Residual Risk with Controls			Comments, Further Actions and Bespansibilities
	Happen		Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating	Responsibilities
20	Failure to elect a Management Committee. Minimum requirement is for a President, Treasurer and Secretary.	If a committee cannot be formed, the club must initiate a close- down, finalise all business operations, and notify The Office of Fair Trading.	5	4	9	All Committee members to actively dispel the myth that there is too much paperwork and that high-level computer skills are required. The only IT skill required is to operate an email account. Members should be encouraged to step forward to serve the club. Members that are possibly interested in a committee role can be mentored. Resigning committee members to assist new committee members. The club needs to attract new members to survive. Place RAMS details on Redland City News, "Community Noticeboard". And local FB community pages.	5	4	9	It is likely that Rams could close in the near future, unless members are prepared to take on committee roles. Situation to be under constant review.

Table 5: Risk Score Classification

Consequence = The possible outcome should the risk event occur.

Likelihood = The likelihood, chance or frequency that the risk event will occur.

Risk Score = The level of risk classification. (Consequence + Likelihood = Risk Score)

ALARP = As Low as reasonably practicable. (Tolerable risk targ

C	ONSEQ	UENCES	;			LIKELI	HOOD					
						0	1	2	3	4	5	
	PEOPLE	PROPERTY	OPERATION	REPUTATION	FINANCIAL	Extremely rare > 1 in 100000	Rare 1 in 10000 - 100000	Unlikely 1 in 1000 – 10000	Possible 1 in 100 - 1000	Likely 1 in 10 - 100	Almost certain 1 in 10	
0	No injury	No damage	Operation unaffected	Reputation unaffected	No cost	0 Low	1 Low	2 Low	3 Low	4 Medium	5 Medium	
1	Minor injury no treatment required	Minor damage <\$100	Minor disruption <1 hr	Minor verbal complaint	<\$100	1 Low	2 Low	3 Low	4 Medium	5 Medium	6 High	Risk Score
2	Injury requiring first aid	Moderate damage <\$500	Temporary loss of operation 1-2 hrs	Written complaint	<\$500	2 Low	3 Low	4 Medium	5 Medium	6 High	7 High	1-3 LOW - Tolerable - Task may proceed - Controls are adequate, monitor and manage to maintain ALARP
3	Injury requiring hospital treatment	Significant damage <\$1K	Temporary loss of operation 1 day	Complaint to Police Council MAAQ MAAA CASA	<\$1K	3 Low	4 Medium	5 Medium	6 High	7 High	8 Extreme	4-5 MEDIUM - Task may proceed - Monitor and maintain strict control measures to achieve ALARP
4	Major injury or permanent disability	Major damage <\$10K	Loss of operation 1-7 days	As above with media coverage	<\$10K	4 Medium	5 Medium	6 High	7 High	8 Extreme	9 Extreme	6-7 HIGH - Task not permitted - Review and introduce additional risk control measures to mitigate risk to ALARP
5	Multiple injuries or death	Major damage >\$10K	Extended loss of operation >7 days	Club grounded Loss of permit Club Closes	>\$10K	5 Medium	6 High	7 High	8 Extreme	9 Extreme	10 Extreme	8-10 EXTREME - Intolerable - Stop task immediately – Review and introduce further risk control measures to mitigate risk. Significant change is required to achieve ALARP

