MODEL AERONAUTICAL ASSOCIATION OF AUSTRALIA

RISK ASSESSMENT BEFORE & AFTER CONTROL MEASURES

The Scale Aviators- Wellie Emmitt Airfield

Ver: 3.0 June 2024

Risk No	Manned Aircraft flying in the vicinity of The Scale Aviators Club: Willie Emmett Field.	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
1	**Hazard 1:** Impact between manned aircraft and model aircraft	1	5	6
	The Consequence: 1. Damage or crash of manned aircraft 2. Loss of life (air and grouns) 3. Damage to property			
	Existing Controls/measures: 1. Operate in accordance with conditions of CASA Area Approval, MAAA MOPS and TSA practices and procedure 2. NOTAM and/or The Scale Aviators field clearly marked on the current Canberra VTC. 3. Canberra Airport is some 40 kms away and no sports aviation or agricultural aircraft company operate in the NAAS valley. 4. There is very little maned aircraft activity in NAAS valley, Care flight and Fire spotting aircraft sometimes operate in our area but have always been at considerable hight and distance. 5. C LL (Controlled Airspace lower limits) over field is 6500 and 5500. 6. Local airstrip is some 12 kms away at Lanyon and we know the operators well and it is very infrequently used. (Bright Yellow Tiger Moth.) 7. Experiance with flying at the is location and conforming to all conditions of CASA Area Approval, MAAA MOPs and TSA practices and procedures for over 10 years.			
	Additional Control Measures: 1. Assigned Flight line Director who is responsible for maintaining visual lookout 2. All members are responsible for maintaining a visual (watch and warn) 3. Stakeholder engagement to ensure any operators in the area are aware of the Model flying field. 4. All model aircraft operators to immediately land upon identifying a manned aircraft in VLOS or approaching the Willie Emmitt air field. 5. Members are encouraged to set altitude telemetry when exceeding 1500FT AGL if their equipment supports this protocol. 6. Maintain separation with full size aircraft (minimum 1000ft) and land.	**0**	**5**	**5**

Risk No	Spotting Manned Aircraft flying in the vicinity of The Scale Aviators Club: Willie Emmett Field.	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
2	**Hazard 1:** 1. Pilot unaware of unexpected manned aircraft in vicinity or unaware of other model aircraft taking off, landing or in close proximity	1	5	6
	The Consequence: 1. Collision with manned aircraft or model aircraft 2. Serious injury or loss of life 3. Damage or crash of manned aircraft			
	Existing Controls/measures: 1. Pilot to conduct pre-flight check for manned aircraft prior to each flight. 2. Spotters to concentrate for any manned aircraft movement at all times when modle aircraft are flying. 3. Spotters to call their pilots manoeuvres clearly so as all other pilots are aware of the intent 4. All spotters to be wearing high visibility clothing or vests			
	Additional Control Measures: 1. Safety officer to be employed during model aircraft events. 2. Safety officer and all Spotters must be at least 16 years old and ideally a current experienced aeromodeller 3. Spotter to have good vision and hearing and to communicate clearly to all model pilots. 4. When spotter or any model pilot becomes aware of an approaching aircraft then all models must come down below 400ft, if the full-size aircraft is continuing towards the field then all model pilots must land their aircraft land as soon as possible 5. In the event of an unplanned runway incursion by full-size aircraft, persons, animals or vehicles that renders the runway area unsafe, any models flying are to stay clear of the runway flying to the North east at a height of under 400FT AGL until it is safe to land using the runway. 6. Birds also pose a risk and spotters should make pilots aware of any flying in the vicinity of the model operation.	**0**	**5**	**5**

Risk No	Downed model aircraft impacting neighbouring properties	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
3	**Hazard 1:** Model impact on building or people	1	5	6
	The Consequence: 1. Damage to property 2. Personal injury or loss of life			
	Existing Controls/measures: 1. The nearest Neighbouring properties are in Tharwa some 10 kms away. Other properties are at even greater distances and are very sparce in density. 2. Very Significant separation to any neighbours			
	Additional Control Measures: 1. Flight line Director/Observer located in the pilot box at all times. 2. Exclusion/No Fly Zones are monitored and enforced 4. Stakeholder engagement 5. All new members will be handed a joining pack containing the club rules. 6. Access to club rules to be made available on TSA web page. 7. All TSA members are required to be vetted for competency. 8.The MAAA wings program is enforced and TSAhas two current MAAA instructors.	**0**	**5**	**5**

Risk No	Downed model aircraft causing fire	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
4	**Hazard 1:** Damage to farmland and property	2	3	5
	The Consequence: 1. Damage to farmland and property 2. Reputational damage to The Scale Aviators			
	Existing Controls/measures: 1. Fire extinguishers located by the Pits, Rega Hard Knapsack extinguisher filled at all times. and two CO2 extinguishers just inside the club house. 2. 20 litre water containers as well as around 4000 litres of water held in the storage tanks. Electric pump and hose connection with hose is available at the shower block. 3. Two metal buckets of sand are on hand to cover burning batteries or spot fire, located in the pits area. 4. No flying any models during times of total fire ban or declared emergency. 5. Ensure accessibility to the enclosed tractor which is part of the airfield inventory.			
	Additional Control Measures: 1. Model "Fail Safe" settings require "ignition off" and "motor off" positions for loss of signal occurrence. 2. Airfield is kept mowed and clear of flammable material. 3. Downed models must be recovered at the earliest possible time. 4. Good relationship with Local RFS and farmer for rapid assistance. 5. Call local RFS on 000 immediately if fire is detected and cannot be controlled with on-hand equipment. Local RFS:- Tidbinbilla and Southern Districts. 6. RFS Request for attendance at event. https://esa.act.gov.au/contact-us/requests-forms-and-permits/request-attendance-event 7. All new members will be handed a joining pack containing the club rules. 8. Access to club rules to be made available on TSA web page. 9. All TSA members are required to be vetted for competency.	**0**	**3**	**3**

Risk No	Model collides with person	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
5	**Hazard 1:** Collision with fellow modeller in the pit area or at the flight line.	2	4	6
	The Consequence: 1.Injury to person.			
	Existing Controls/measures: 1. The pit area, car park and viewing area are within the Exclusion/No Fly Zone. Operate in accourdance with CASA 101 & CADSA 22/22, CASA Area Approval, MAAA MOPs and TSA Practices and procedure 2. All aircraft to be restrained by human or mechanical devices in the start-up area provided. 3. All members are responsible to oversee the operation and enforce these rules.			
	Additional Control Measures: 1. Pilots box has a protective barrier. 3. Assigned safety officer at all events to oversee operations and enforce the rules 4. Reinforce protocols at pilots briefings 5. The Scale Aviators rules state no taxing into the pit area. 6. Starting area is outside the pit area. All Pilots are to use the starting area 7. The Scale Aviators also provide a restraining stand in the starting area. 8. Education of new members and visitors to all TSA safety protocols 9. All new members will be handed a joining pack containing the club rules. 10. Access to club rules available on TSA web page. 11. All TSA members are required to be vetted for competency. 12. It is preferable that all pilots are GOLD Wings and members are assisted in obtaining wings as soon aspossible. 13. TSA has two cerfified MAAA trainied Instructors. 14 Several TSA members are first aid trained. 15. A first aid kit is available in the club house if required.	**0**	**4**	**4**

Risk No	Visitors to the field	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
6	**Hazard 1:** Injury to people, equipment or motor vehicles.	1	3	4
	The Consequence: 1. Possible injury to visitors from model aircraft 2. Possible damage to motor vehicles or property 2. Possible damage to models and equipment from uniformed and curious visitors			
	Existing Controls/measures: 1. The pit area, car park and viewing area are within the No Fly Zone 2. The car park for all visitors is situated > 50 meters from the flight line			
	Additional Control Measures: 1. Safety officer and or members to police all TSA safety procedures 2. The field is in a remote location and only invited guests attend even during events. 3. All invited visitors are to be accompanied by a member 4. Visitors and non-participants are not to enter in the pit area 5. Club members and participants at events are encouraged to approach and inform visitors of operating protocols regarding field procedures. 6. Several TSA members are first aid trained. 7. A first aid kit is available in the pits if in the club house if required.	**0**	**3**	**3**

Risk No	Model aircraft malfunctions	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
7	**Hazard 1:** Mechanical, technical and/or structural failure	3	4	7
	The Consequence: 1. Severe injury, death or damage to property 2. Significan damage to aircraft.			
	Existing Controls/measures: 1. Pilot to conduct pre-flight check of aircraft prior to each flight to ensure airworthiness 2. If in doubt seek the opinion of experienced modeller 3. Pilot to ensure "Fail Safe" is operating prior to flight 5. Pilots are to keep maintenance of aircraft up to a high standard of airworthiness 6. Experienced pilots to assist and help less experienced pilots to comply 7. The aircraft must have a "Permit to Fly" certificate if over 7kg 8. Pilots must be members of a registered model aero club with appropriate MAAA insurance			
	Additional Control Measures: 1. Pilots are encouraged to keep an eye on each other's planes 2. Experienced pilots to oversee maiden flights, newcomers and non-club members. 3. TSA has two heavy model inspectors and members are encouraged to seek advice. 4. TSA also supports evidence based risk management. All incidences at the Scale Aviators are recorded in the Large Model Occurrence Form (TSA:L001) V0.b see https://www.thescaleaviators.org.au/safetymatters. This online form must be filled in and lodged with The Scale Aviators in the event of any of the following occurrences: Total loss of any model aircraft at the Scale Aviators Field. Damage to any above airframes that requires certification re-inspection., An Insurance claim., Airspace infringement., Incident worth recording (Close call). 5. Access to club rules to be made available on TSA web page. 6. All TSA members are required to be vetted for competency. 7. The support and experience of TSA members and a strong culture of assisting 8. TSA members are encouraged to take a fully professional approach to aeromodelling. 9. It is preferable that all pilots are GOLD Wings and members are assisted in obtaining wings as soon as possible.	**1**	**4**	**5**

Risk No	Pilot error causing damage to persons or property at the field	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
8	**Hazard 1:** Pilot error causing out of control aircraft resulting in damage or injury	2	4	6
	The Consequence: 1. Severe injury, death or damage to property			
	Existing Controls/measures: 1. Experienced pilots to help less experienced pilots with training and assistance. 2. The aircraft must have a "Permit to Fly" certificate if over 7kgs and the pilot to have the correct endorsements. 3. Pilots must be members of a registered model aero club with appropriate MAAA insurance 4. Pilots offered protection by flight box structure. 5. Mandatory requirement to comply with the 30 meter rule 6. Members know to call out immediate warning to all (Heads Up, Heads UP) if a pilot is experiencing any difficulty. 7. Pilot to call out clearly when experiencing any form of loss of control. 8. Experienced pilots to oversee maiden flights, newcomers and non-club members 9. TSA provided instructors and is fully supportive and encourages by providing training program to achieve Gold Wings standard. 10. TSA has two cerfified MAAA trainied Instructors.			
	Additional Control Measures: 1. Pilots are encouraged to keep an eye on each other's planes 2. Experienced pilots to oversee maiden flights, newcomers and non-club members. 3. TSA currently have two heavy model inspectors and members are encouraged to seek advice. 4. TSA supports evidence based Risk managemet. All incidences at the Scale Aviators are recorded in the Large Model Occurrence Form (TSA:L001) V0.b see https://www.thescaleaviators.org.au/safetymatters. This online form must be filled in and lodged with The Scale Aviators in the event of any of the following occurrences: Total loss of any model aircraft at the Scale Aviators Field. Damage to any above airframes that requires certification re-inspection., An Insurance claim. Airspace infringement., Incident worth recording (Close call). 5. All TSA members are required to be vetted for competency. 6. .It is preferable that they have GOLD Wings before joining.	**1**	**4**	**5**

Risk No	Injury when starting model aircraft	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
9	**Hazard 1:** 1. Injury form propellers	3	4	7
	The Consequence: 1. Server lacerations 2. Brocken or loss of fingers 3. Serious injury or loss of life			
	Existing Controls/measures: 1. Require all members to positively restrain aircraft either by someone else holding or mechanical stops.. 2. Permanent starting pole provided at club for large models. 3. Ignition status to be called out before turning over propeller by operator. 4. Assistant to be used when starting large/ heavy models. 5 Petrol engines to be started with Gold wings pilot in attendance. 6 A first aid kit is available and is located in the club house at all times.			
	Additional Control Measures: 1. At events or displays Pilots are advised to have an assistant. 2. . All Heavy models are to have assistant in attendance. 3. It is recommended that all large models are started with an electric start or suitable leather glove. 4. Safety officer and or members to police the safety procedures 5 Several TSA members are first aid trained. 6. Ignition status to be called out before turning over propeller by operator. 7. Assistant to be used when starting large/ heavy models. 8. Petrol engines only to be started with Gold wings pilot in attendance.	**1**	**4**	**5**

Risk No	Flying alone at the field.	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
10	**Hazard 1:** 1. Pilot is incapacitated while aircraft is in the air. 2. Snake Bite. 3 Cardiac arrest or other medical emergency, 4. Intermittent phone coverage.	2	5	7
	The Consequence: 1. Serious injury 2. Death 3. Damage to property			
	Existing Controls/measures: 1. Ring 000 if phone reception works.			
	Additional Control Measures: 1. No flying at the field alone. 2. First aid kit available in the club house 3. Defibrillator in the club house .	**0**	**5**	**5**

Risk No	Number and Types of aircraft flying with different performance characteristics.	LIKELIHOOD (L)	CONSEQUENCE (C)	RESULTANT (R) (L+C=R)
13	**Hazard 1:** 1. Congested airspace. 2. Fast and slow aircraft occupying the same airspace.	2	5	7
	The Consequence: 1. Mid air collision. 2. Aircraft crashes while trying to avoid another aircraft. 3. Pilots becomes overwhelmed			
	Existing Controls/measures: 1. Limit of a maximum of 5 aircraft in air at any one time 2. Flight line director during events controlling the pilots and the number of aircraft allowed to fly.			
	Additional Control Measures: 1. Club rules state that permission must be granted to fly aircraft of vastly different flight characteristics at the field. Time slot is the preferred solution and is to be encouraged by all members. 2. When holding event: Flight line will be in waves of similar performance aircraft or solo flights if requested. 3. Experience pilots maintaining safe flying operations.	**0**	**5**	**5**

RISK ASSESSMENT MATRIX - LEVEL OF RISK

Table 1 - Consequence Values

	Consequence					
	0	1	2	3	4	5
People	No injury	Minor injury that does not require medical treatment	Minor injury that requires first aid treatment	Serious injury causing hospitalisation or multiple medical treatment cases	Permanent injury or disability (including blinding) that may result in hospitalisation of at least one person	One or more deaths, multiple severe injuries or permanent total disability
RPAS	Any element of the RPAS is degraded but task unaffected	A failure not serious enough to cause RPAS damage but which will result in unscheduled maintenance or repair or incomplete task	Minor RPAS damage resulting in damage to components, incomplete task and future unserviceability of RPAS	Significant RPAS damage but repairable	Complete loss of or destruction of a RPAS component (RPA, camera transmitter, sensor, etc.)	Loss of all RPAS elements
Reputation	Small delay, internal inconvenience only	May threaten an element of the service resulting in the task or objective being delayed	Risk does not violate any law and can be easily remedied. It has some effect on reputation and/or external stakeholders	Risk does not violate any law and can be easily remedied. It has some residual effect on reputation and/or external stakeholders and while reputation is damaged it is recoverable	Risk violates a law but can be remedied. It has a residual effect on reputation and/or external stakeholders and may result in damage to reputation	Risk violates a law and is unable to be remedied. It has a significant impact on reputation and/or external stakeholders and will result in loss of reputation
Cost/Property Damage	Negligible	Less than $1,000	More than $1,000 less than $10,000	More than $10,000 less than $100,000	More than $100,000 less than $1,000,000	Loss or damage exceeding $M1
Airspace	No aviation airspace safety implication	Minor breach of aviation safety regulations or RPA Area Approval	Serious issues of compliance with aviation safety regulations, RPA Area Approval or operations resulting in potential avoiding action by a manned aircraft but no collision	Serious issue of compliance with aviation safety regulations or operations or the loss of separation resulting in the potential for a collision with a manned aircraft but the manned aircraft is able to land with no serious injuries or fatalities	Potential for aviation safety incident/s involving multiple life threatening injuries, or fatalities, to less than 10 people	Potential for multiple fatal aviation safety incidents causing multiple fatalities, to 10 or more people
Equitable access of airspace	No effect on access to airspace users	Some users of the airspace may perceive or experience airspace inequality resulting in between 5 to 10 minute delay or minor detour	Some users of the airspace may perceive or experience airspace inequality resulting in more than 10 minute delay or major detours	Most users of the airspace will experience airspace inequality resulting in long delay (>30 minutes) or major detours	All users of the airspace will experience airspace inequality resulting in long delay (>30 minutes) or major detours	Airspace users are prohibited from operating in the airspace causing significant disruptions to operations and financial cost

Table 2 - Likelihood

Likelihood	Almost Certain	5	>1 in 10	Is expected to occur in most circumstances
	Likely	4	1 in 10 – 100	Will probably occur
	Possible	3	1 in 100 – 1000	Might occur at some time in the future
	Unlikely	2	1 in 1000 – 10000	Could occur but considered unlikely or doubtful
	Rare	1	1 in 10000 - 100000	May occur in exceptional circumstances
	Extremely Rare	0	< 1 in 100000	Could only occur under specific conditions and extraordinary circumstances

Table 3 – Risk Rating

			Consequence					
			0	1	2	3	4	5
Likelihood	Almost Certain	5	5	6	7	8	9	10
	Likely	4	4	5	6	7	8	9
	Possible	3	3	4	5	6	7	8
	Unlikely	2	2	3	4	5	6	7
	Rare	1	1	2	3	4	5	6
	Extremely Rare	0	0	1	2	3	4	5

Untreated Risk Scores

8,9,10 (Extreme risk) - Task is not permitted. Risk controls are required to ensure residual risk is acceptable.

6,7 (High risk) - Task is not permitted. Risk controls are required to ensure residual risk is acceptable.

4,5 (Medium risk) - Task may proceed, however, risk must be reduced to 'as

	4,6 (Medium risk) - Task may proceed, however, risk must be reduced to 'as low as reasonably practicable' (ALARP). 1,2,3 (Low risk) - Task may proceed.

Risk No	Risk	Risk Before Controls	Risk Factor after controls
1	Manned Aircraft flying in the vicinity of The Scale Aviators Club: Willie Emmett Field.	6	5
2	Spotting Manned Aircraft flying in the vicinity of The Scale Aviators Club: Willie Emmett Field.	6	5
3	Downed model aircraft impacting neighbouring properties	6	5
4	Downed model aircraft causing fire	5	3
5	Collision with fellow modeller in the pit area or at the flight line.	6	4
6	Visitors to the field	4	3
7	Model aircraft malfunctions while flying.	7	5
8	Pilot error causing damage to persons or property at the field	6	5
9	Injury when starting model aircraft	7	5
10	Flying alone at the field.	7	5

TSA Risk Analysis
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