

Appendix B2 (Page 1 of 2)

## HAZARD MANAGEMENT - RISK ASSESSMENT

This template or equivalent template can be used

			Date:	17/04/20
(If you have not comp	JLTIPLE TASKS  Deted a risk assessment b  Chapter Appendix A for gu	efore refer to the	RECORD THE HIGHEST RESIDUAL RISK RATING Ensure the appropriate level of authority to complete the activity can be evidenced. (e.g. a signature or formal approval attached)	☐ Low ☐ Medium ☐ High ☐ Very high
Physical location(s) or	Operational unit		Student Personal Workshops	
Names of workers involved in completing the risk assessment			Harry Lukasz: a1721127	
<ul> <li>Ensure that there is a</li> <li>Ensure that workers before they undertak</li> </ul>	ol measures address the haz a system for retaining this Risi who undertake this task have e the task. (This includes any	k assessment. (See sec access to this Risk asse other guidance material	tep in the process for this task. tion 5.1 of the Handbook chapter) ssment, are provided with the relevant, information, instruc I (e.g. Safe operating procedures) where required by this R I/or training (Level 3 competency/qualification) the informat	isk assessment.)
Standard controls for this location (e.g. Lab/workshop rules) (See definitions for information on control banding)  The control measures listed must be applied by all workers when entering the location regardless of whether they are completing the task. The control measures must be specific.  They do not need to be repeated under each task below.			[List lab/workshop rules here if applicable] NA - Personal student workshops are subject to va	arying rules.
Hazard identification		Assess the harm	What needs to be in place before you start?	Re-assess the level of risk
Identify and list each hazard that is part of this work process	Record how/when the worker is exposed to the hazard (e.g. what is the route of exposure when completing the task)	Calculate the risk rating without controls in place (See descriptor table overleaf)	The measures you select must address the hazard, be selected in accordance with the Hierarchy of Control and be clear to the worker.  (Refer to the <u>Hierarchy of Control</u> Appendix A page 6 for guidance.)	i.e. the residual risk rating after controls are in place
Task 1:	Forming conflute/foam	material for fuselage		
A)Skin laceration B)Skin burns C)Particulate inhalation	These risks are present throughout the full manufacturing process of the airframe prototypes.  A)Skin lacerations can occur when initially cutting material to desired size. Expected tools to cause these lacerations are a craft knife, hand saw and hacksaw.  B)Exposure to minor burns when joining	□ Low □ Medium □ High □ Very high	A)PPE: This can be mitigated by ensuring the worker wears appropriate PPE (Appropriately thick gloves)  B)PPE: This can be mitigated through use of PPE (Appropriately thick gloves) when using a hot glue gun.  C)PPE: This can be mitigated by wearing appropriate PPE (face mask) when shaping material through sanding methods.	□ Low □ Medium □ High □ Very high

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Hazard identification: S What could cause har  Identify and list each hazard that is part of this work process	Record how/when the worker is exposed to the hazard (e.g. what is the route of exposure when	Assess the harm  Calculate the risk rating without controls in place (See descriptor table overleaf)	What needs to be in place before you start?  The measures you select must address the hazard, be selected in accordance with the Hierarchy of Control and be clear to the worker. (Refer to the Hierarchy of Control Appendix A page 6 for guidance.)	Re-assess the level of risk  i.e. the residual risk rating after controls are in place
	completing the task)			
Task 2:	Manufacturing Control	/Power System		
A)Skin laceration B)Skin burns C)Chemical Inhalation D)Damage to eyes	These risks are present throughout the full manufacturing process of the control system.  A)Skin lacerations: When sizing the wires to connect flight controllers, arduino and sensors, skin lacerations can occur when using wire cutters.  B) Skin burns can occur when soldering wires to flight controllers, arduino and sensors. Burns can also occur if the power source is shorted when connecting circuitry due to heating of electrical elements and battery.  C) Inhalation of toxic rosin can occur when soldering any element of the system.  D) When soldering, molten flux from soldering wire can boil and jump from the wire.  When signal wire is cut, the unconstrained end is often launched unexpectedly.	□ Low □ Medium □ High □ Very high	A)PPE: This can be mitigated by ensuring all workers wears appropriate PPE (Appropriately thick gloves)  B)PPE/Administration: This can be mitigated by ensuring all workers wear appropriate PPE (Appropriately thick gloves). The likelihood of shorting the power source can be reduced if all circuitry is checked by at least two members before the addition of power. Due to social distancing measures, detailed images of the circuit will be uploaded and assessed over zoom to ensure all circuitry is safe and acceptable.  C)Engineering: Chemical inhalation can be eliminated by ensuring all soldering is conducted in a large area with the mandatory use of a solder fume extractor - a device which is easily obtained through an online purchase.  D) PPE/Engineering: This risk can be mitigated via implementing appropriate PPE (safety glasses/face shield which must be worn at all times when conducting these processes). Flux burns can also be mitigated by ensuring soldering wire with low flux composition is used.	Low High Very high

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B) Overcharging lithium polymer battery calibrated. This occurs when a motor, with a propeller attached. Uncaing ontrol of looking prototype attached at this scale can cause skin alceration if safety measures are not taken.  D) Skin burns  B) Overcharging a lithium polymer battery can be conducted without propellers constrained to the motors to ensure unexpected motor activation does not occur.  B) Overcharging a lithium polymer battery can cause skin alceration if safety measures are not taken.  B) Overcharging a lithium polymer battery can cause overcheating and in ever cases, spontaneous combustion. Charging the battery unattended exacerbates these effects.  C) Since all prototypes are in the lesting phase, the litelihood of control failure is medium. Whose is or control could cause the system is obscided, the system could be lost.  D) Certain electrical component of the electrical system that experience large heat fluctuation when faulty or incorrectly used. Heading of such components can be componented on the experience large heat fluctuation when faulty or incorrectly used. Heading of such components can be components can be estimated and the experience large heat fluctuation when faulty or incorrectly used.				A) Engineering: Prop strike can be eliminated via	Low
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Authorisation for staff and student related tasks								
Residual risk rating Authorisation Name and signature (or attach evidence of authorisation)								
HSW Handbook	Hazard Man	agement	Effective Date:	17 December 2019	Version 3.0			
Authorised by	orised by Chief Operating Officer (University Operations) Review Date: 17 December 2022 Page 3 of 4							
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## **HSW Handbook**





Low & medium risk	Supervisor/Person in control of the area/activity	Rey Chin	Ritur
High risk	Head of School/Branch		
Very high risk	Executive Dean/Divisional Head		

## Proof of hazard identification and risk assessment is required for this task

- ☐ File your completed Risk assessment as instructed by the Supervisor/Person in control of the area/activity
- ☐ Ensure there is a system for retaining formal Risk assessments in accordance with the State Records of SA, General disposal <u>Schedule No. 30</u> issued under the State Records Act 1997. (Contact the University's <u>Records Management Office</u> for further assistance/information if required.)

## DESCRIPTORS FOR ASSESSING THE LEVEL OF RISK

	Assess the level of risk based on the likelihoo	d of an incider	nt occurring and the consequence			
	Likelihood Table	Consequences Table				
Almost certain	There is an expectation that an event/incident will occur.	Severe Injury resulting in death, permanent incapacity.				
Likely	There is an expectation that an event/incident <b>could occur</b> but not certain to occur.	Major	Injury requiring extensive medical treatment (e.g. hospitalisation) or activities could result in a Notifiable occurrence.			
Possible	This expectation lies somewhere in the midpoint between "could" and "improbable".	Moderate Injury requires formal medical treatment (e.g. hospital outpatient/doctors visit).				
Unlikely	There is an expectation that an event/incident is doubtful or improbable to occur.	Minor	Injury requires first aid treatment.			
Rare	There is no expectation that the event/incident will occur.	Negligible	Injury requires minor first aid (e.g. bandaid), short term discomfort (e.g. bruise, headache), no medical treatment.			

	The level of risk will increase as the likelihood of harm and its severity increases									
Likelihood	Likelihood Consequences – level of seriousness of the injury following exposure to the hazard(s) -									
of exposure	No	Negligible Minor Moderate Major Severe								
Almost certain		Medium		High		Very High		Very High		Very High
Likely		Medium		Medium		High		Very High		Very High
Possible		Low		Medium		High		High		Very High
Unlikely		Low		Low		Medium		Medium		High
Rare		Low		Low		Low		Medium		Medium

HSW Handbook	Hazard Management	Effective Date:	17 December 2019	Version 3.0		
Authorised by	Chief Operating Officer (University Operations)	Review Date:	17 December 2022	Page 4 of 4		
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