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| **Risk Assessment** | | | | |
| **Risk Assessment for the activity of** | **SUHPA Society Aircraft Display Risk assessment** | | **Date** | **19.09.2024** |
| **Unit/Faculty/Directorate** | **SUSU** | **Assessor** | **James denton (President)** | |
| **Line Manager/Supervisor** | **Oswah Ashraf (Health and Safety Rep.)** | **Signed off** |  | |

| ***PART A*** |
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| **(1) Risk identification** | | | **(2) Risk assessment** | | | | **(3) Risk management** |
| **Hazard** | **Potential Consequences** | **Who might be harmed?**  **(User; those nearby; those in the vicinity; members of the public)** | **Inherent** | | |  | **Residual** | | | **Further controls (use the risk hierarchy)** |
| **Likelihood** | **Impact** | **Score** | **Control measures (use the risk hierarchy)** | **Likelihood** | **Impact** | **Score** |
| Trips and falls | Physical injury | Society members, general public | **3** | **4** | **12** | Ensure equipment is put away and kept in a central location. Erect barriers to keep unsupervised public away from aircraft. Do not rig lift wires. | **1** | **4** | **4** | Seek medical attention if necessary. |
| Overcrowding | Physical injury | Society members, general public | **1** | **3** | **3** | Erect barriers to keep public away from aircraft unless directly supervised with sufficient space | **1** | **3** | **3** | Seek medical attention if necessary. |
| Overcrowding or public disturbance | Conflict, risk of damaging aircraft | Society members, general public | **2** | **3** | **6** | Committee should ensure that society events track venue capacity alongside registered attendees to avoid overcrowding. Use a ticketing system if necessary.  Public to be kept behind barriers unless directly supervised. | **1** | **2** | **2** |  |
| Battery fires | Burns, destruction of property | Society members, those in the vicinity | **2** | **5** | **10** | Most batteries today are protected and unlikely to cause fires. With this said, society members should be made aware that the use of Lithium-ion batteries poses risks.  If proper charging and discharging circuitry is not used to keep Li-ion between 3.7 V and 4.2 V for example, the battery should not be used. This can be verified with appropriate charging equipment and battery voltage testers. If a battery appears bloated or puffy, do not use the battery and mark for disposal.  Fires can spontaneously re-ignite so its important that fires are suffocated with sand or arrested with fireproof battery storage bags. Batteries should be kept away from potential sources of humidity, puncture, pressurised containers, kindling, and trauma. | **1** | **4** | **4** | Seek medical attention if necessary.  If a battery fire cannot immediately be quenched with sand, raise the alarm for evacuation. If reasonably possible, remove other nearby batteries for the immediate vicinity (other flammable hazards should already have been mitigated as part of the hazard mitigation strategy).  If the fire is uncontrollable, call the authorities immediately. If on University property in regular working hours, call the Switchboard: 0 or 023 8059 5000 (Working hours only from 8.30am to 5pm) as they can direct emergency services to the correct location faster. Otherwise use the regular emergency 999 number.  [Complete a SUSU incident report](https://www.susu.org/groups/admin/howto/protectionaccident) |
| General Fires and Fire safety awareness | Panic due to insufficient training or knowledge of procedure can lead to crushing, falls, trips, inhalation of smoke.  Poor safety awareness and consideration may lead to complacency and the littering of safe fire exit routes with flammable debris, trip hazards, and other obstructions to safe passage. | Society members, others at a venue | **2** | **5** | **10** | Members of the society and participants should brief on fire safety procedures, including (but not limited to) keeping walkways clear and the identification of multiple safe exit passages, routes, and muster points.  Keep rubbish, trip hazards, and other obstructions clear of these safe passages in the area | **1** | **5** | **5** | If on University property during regular working hours, call the Switchboard: 0 or 023 8059 5000 (Working hours only from 8.30 am to 5 pm) as they can direct emergency services to the correct location faster. Otherwise use the regular emergency 999 number.  [Complete a SUSU incident report](https://www.susu.org/groups/admin/howto/protectionaccident) |
| Medical emergency | Members may sustain injury /become unwell. | Members | **3** | **5** | **15** | Advise participants; to bring their personal medication.  Members/Committee to conduct first aid if necessary and only if qualified and confident to do so.  Contact emergency services as required 111/999  Contact SUSU Reception/Venue staff for first aid support | **2** | **5** | **10** | Report incidents soon as possible and ensuring the duty manager/health and safety officer is informed.  [Complete a SUSU incident report](https://www.susu.org/groups/admin/howto/protectionaccident) |
| High winds | Damage to the aircraft | Aircraft, society members | **3** | **3** | **9** | Check weather forecast. Do not display in high winds or gusts. Monitor winds on the day, and remove aircraft wing if winds start becoming too high | **2** | **3** | **6** | Brief members of how to quickly disassemble the aircraft to prevent damage.  Continually check weather forecasts and monitor weather trends to predict when high winds may occur |
| Very high winds | Aircraft lifts off and is blown away | Society members, general public, aircraft | **3** | **5** | **15** | Check weather forecast. Do not display in high winds or gusts. Monitor winds on the day, and remove aircraft wing if winds start becoming too high | **1** | **5** | **5** | Brief members of how to quickly disassemble the aircraft in high winds to prevent damage.  Continually check weather forecasts and monitor weather trends to predict when high winds may occur |
| Inefficient response to emergency | Whether it be a crowded festival or a remote airfield, any accident is harder to deal with in unfamiliar surroundings. Not knowing who to call, where to get phone signal, or where to find help can delay the rendering of critical assistance. | Society members, other competition attendees, guests of the society, spectators | **4** | **3** | **12** | Not knowing how to respond to a situation promptly can exacerbate the situations at hand.  Society members should not go alone or by themselves into unfamiliar spaces. A friend should always be near to render assistance.  Committee members at the event shall identify communications channels to event organisers, and a separate channel to \*ALL\* society members (and guests) present in a single group chat. This allows vital information to be exchanged quickly, and then summarised properly for delivery to event staff. | **4** | **1** | **4** | By properly briefing society members on where they are permitted to go and not go, visitation of unfamiliar spaces can be minimised.  In addition to this, a consistent flux of team members (as may be the case at competitions) requires that all society members and committee members should revisit this lesson DAILY with mandatory attendance (a good time for a roll call).  Committee members should organise a homebase (usually where camp/accommodation is), and a nearby secondary rally point. |
| Injurious interactions with exhibition props | Physical injury to exhibitors, transmission of illnesses | Society members, members of the public | **3** | **1** | **3** | Exhibitors and members of the public may not always properly understand how to correctly handle delicate props, which could result in injury or damage to the prop.  Before taking post, exhibitors should learn how to safely demonstrate their prop. On a case-by-case basis, props should be evaluated for suitability for interaction with the general public. Avoid for example, high-pitched Arduino buzzers, anything likely to cause epileptic seizure, place “no touch” signs where necessary, and offer hand and exhibit sanitisation. | **2** | **1** | **2** | From experience, some members of the public do not follow guidance. Exhibitors should remain vigilant.  Identify security or event management communication channels, to be able to speedily report incidents at stall’s belonging to SUHPA (or any adjacent party).  [Complete a SUSU incident report](https://www.susu.org/groups/admin/howto/protectionaccident) |
| Theft and damage of society or society member’s property | Society members are discouraged from attending outreach events again | Society members | **3** | **1** | **3** | Valuable items, either in monetary, sentimental or other engineering value to the society should have designated exhibitors to watch over them for the event. This is to avoid situations where exhibitor A thinks exhibitor B is looking after a prop and vice versa, resulting in neither A nor B paying close attention.  If possible, protect property with distance from the audiences, signage indicating exhibits should not be touched, or use secure display cases/frames.  Society members should not feel coerced into doing or bringing something they are uncomfortable with. |  |  |  | If a prop is desired for demonstration but unsuitable for any reason, perhaps a stand-in or scale mock-up of the real object would suffice.  [Complete a SUSU incident report](https://www.susu.org/groups/admin/howto/protectionaccident) |
| Lifting and transport of aircraft parts and society equipment | Back strain from lifting heavy, large or awkward components.  Risk of minor injuries if components dropped, or in high winds | Society members | **3** | **2** | **6** | Brief members on how to transport aircraft components safely, and how to reduce the impact of winds on components.  Ensure 2 or more society members are carrying any heavy, large or awkward components.  When carrying especially heavy components (e.g.) weights, ensure members are wearing sturdy footwear | **2** | **2** | **4** |  |
| Inappropriate dress and equipment (for adverse conditions or weather) | Inappropriate dress can lead to injury (e.g., sunburn, hypothermia, loss of footing).    Inappropriate equipment can lead to injury and/or discomfort (e.g., back and neck strain when camping/sleeping) | Society members | **4** | **1** | **4** | As an example, the society’s Icarus cup competitions. Well in advance of the competition start date, a table of attendees should be built and verified.    This table should be publicly accessible alongside recommended camping equipment for the season. Society members shall be encouraged to tent share if there are not enough. However, the number of tents present should be maximised to best provide emergency surge shelter capacity for unexpected disasters (e.g., tents getting blown away). | **3** | **1** | **3** | Check weather forecast. Highlight any extreme weather. Dress appropriately based on forecast. |

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| ***PART B – Action Plan*** | | | | | | |
| **Risk Assessment Action Plan** | | | | | | |
| **Part no.** | **Action to be taken, incl. Cost** | **By whom** | **Target date** | **Review date** | **Outcome at review date** | |
| 1 | Individual risk assessments for individual events with higher risk levels and anything not covered by generic assessment. This includes:   * Trips and Tours * Fundraising events e.g., Bake Sales * External Speaker Events * Events involving home-cooked/prepared food or external catering. * Other large or medium- to high-risk events e.g., balls, club nights, pub crawls, sporting activities... | Relevant committee members – president to ensure complete. |  |  |  | |
| 2 | Committee to read and share SUSU Expect Respect Policy | Relevant committee members – president to ensure complete. |  |  |  | |
| 3 | Purchase (or find the old) hi-vis jackets and first aid equipment in advance of competition dates | Relevant committee members – president to ensure complete. | 01/02 |  |  | |
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| Responsible committee member #1 signature: | | | | Responsible committee member #2 signature: | | |
| Oswah Ashraf | | | Date:  19/09/2024 | James Denton | | Date:  19/09/2024 |

**Assessment Guidance**

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| 1. Eliminate | Remove the hazard wherever possible which negates the need for further controls | If this is not possible then explain why |  |
| 1. Substitute | Replace the hazard with one less hazardous | If not possible then explain why |
| 1. Physical controls | Examples: enclosure, fume cupboard, glove box | Likely to still require admin controls as well |
| 1. Admin controls | Examples: training, supervision, signage |  |
| 1. Personal protection | Examples: respirators, safety specs, gloves | Last resort as it only protects the individual |

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| **LIKELIHOOD** | 5 | 5 | 10 | 15 | 20 | 25 |
| 4 | 4 | 8 | 12 | 16 | 20 |
| 3 | 3 | 6 | 9 | 12 | 15 |
| 2 | 2 | 4 | 6 | 8 | 10 |
| 1 | 1 | 2 | 3 | 4 | 5 |
|  | | 1 | 2 | 3 | 4 | 5 |
| **IMPACT** | | | | |

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| Impact | | Health & Safety |
| 1 | Trivial - insignificant | Very minor injuries e.g., slight bruising |
| 2 | Minor | Injuries or illness e.g., small cut or abrasion which require basic first aid treatment even in self-administered. |
| 3 | Moderate | Injuries or illness e.g., strain or sprain requiring first aid or medical support. |
| 4 | Major | Injuries or illness e.g., broken bone requiring medical support >24 hours and time off work >4 weeks. |
| 5 | Severe – extremely significant | Fatality or multiple serious injuries or illness requiring hospital admission or significant time off work. |

Risk process

1. Identify the impact and likelihood using the tables above.
2. Identify the risk rating by multiplying the Impact by the likelihood using the coloured matrix.
3. If the risk is amber or red – identify control measures to reduce the risk to as low as is reasonably practicable.
4. If the residual risk is green, additional controls are not necessary.
5. If the residual risk is amber the activity can continue but you must identify and implement further controls to reduce the risk to as low as reasonably practicable.
6. If the residual risk is red do not continue with the activity until additional controls have been implemented and the risk is reduced.
7. Control measures should follow the risk hierarchy, where appropriate as per the pyramid above.
8. The cost of implementing control measures can be taken into account but should be proportional to the risk i.e., a control to reduce low risk may not need to be carried out if the cost is high but a control to manage high risk means that even at high cost the control would be necessary.

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| Likelihood | |
| 1 | Rare e.g., 1 in 100,000 chance or higher |
| 2 | Unlikely e.g., 1 in 10,000 chance or higher |
| 3 | Possible e.g., 1 in 1,000 chance or higher |
| 4 | Likely e.g., 1 in 100 chance or higher |
| 5 | Very Likely e.g., 1 in 10 chance or higher |