|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Key Guidance** This section provides an overview of the key concepts for completing a RAFAC risk assessment. Refer to Notes section for further information. The first line of the risk assessment table, below, shows an illustrative example.  **Hazard** is anything that may cause harm, e.g. working at height on a ladder.  **Risk** is the chance of someone or something being harmed by the hazard. Risk is measured by multiplying the likelihood of it happening with its impact (severity). Eg. it is **‘Possible’** that someone who is not competent could fall from a ladder (3 rating) resulting in **‘Moderate’** impact with multiple injuries (2 rating), creating a score of 3x2=6 (low). However, reducing the risk to as low as reasonably practicable (ALARP) through the implementation of control measures eg. training on ladder use to ensure competency, the likelihood of injury would be reduced to **‘Unlikely’** (2 rating) giving a final score of 2x2=4 (very low).  **Note** - Persons undergoing training cannot be deemed competent until their capability is properly assessed.  **Dynamic Risk Assessment** compliments generic and specific risk assessment. Regardless of completing this RAFAC 5010C, it is beholden on the person creating the risk to continue to monitor the activity and the control measures. Any changes to the activity (including the environmental conditions) or the control measures, must be addressed via the mechanism of a dynamic risk assessment such that risks remain ALARP. | | | | | | | | | | | | | | **Likelihood (L)** | | **x** | | **Impact (I)** | | **=** | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Risk Score Calculation** | | | | | | | |  | | **Likelihood** | | | | | | **1** | **2** | **3** | **4** | **5** | | **I**  **m**  **p**  **a**  **c**  **t** | **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** | | | | | | | | |
| **5** - Highly Probable  **4** - Probable  **3** - Possible  **2** - Unlikely  **1** - Remote | | **Multiplied by** | | **1** - Minor  **2** - Moderate  **3** - Major  **4** - Severe  **5** - Critical  ***Note:*** *impact number is unlikely to change with control measures* | | **Equals** |
| **5 Step Process** | | **Step 1** - Identify the hazards | | **Step 2** - Decide who might be harmed and how | | | **Step 3** - Evaluate the risks and decide on precautions (control measures) | | | | | | | **Step 4** - Record your significant findings. Implement control measures. Brief participants prior to activity commencement. | | | | | | | | | | | **Step 5** - Review your risk assessment and update as necessary | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **RAFAC Formation:** | | | | | | Newcastle University (Stephenson Building) **Room\_\_\_\_** | | | | | | | | **Assessor (No, Rank, Name):** | | | | | 30387251 | | | | | | | | | |
| **Activity (Step 1a):** | | | | | | Electronics and Arduino | | | | | | | | **Assessor’s Signature:** | | | | | Plt Off Harrison Milburn | | | | | | | | | |
| **Type of Risk Assessment:** | | | | | | **Generic** | | **Specific** | | | | | | **Assessment Date:** | | | | | **06/04/2024** | | | | | | | | | |
| **Relevant Publications / Pamphlets / Procedures:** | | | | | |  | | | | | | | | **RA Review (Step 5):** | | **06/04/2025** | | | **Review 1**  **DD/MMM/YY** | | | **Review 2**  **DD/MMM/YY** | | | | **Review 3**  **DD/MMM/YY** | | **Review 4**  **DD/MMM/YY** |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (a) | (b) | | (c) | | (d) | | (e) | | (f) | (g) | | (h) | | | (i) | | (j) | | | | (k) | | (l) | | (m) | | (n) | |
| **Ref** | **Activity / Element**  **(Step 1a)** | | **Hazards identified**  **(Step 1b)** | | **Who or what might be harmed and how**  **(Step 2)**  e.g.• Cadet Personnel - Injury  • CFAV Personnel - Injury  • CFAV/Perm Staff/Contractors - Injury  • General Public - Injury | | **Existing control measures**  **(Step 3a)** | | **Assessment with existing controls** | | | | | | **Is residual risk acceptable?  – Refer to Risk Score Calculation above** *If Yes, move to column (n). If No, identify  additional controls* **(Step 3e)** | | **Reasonable additional controls that can be implemented to reduce risk to ALARP**  **(Step 3f)** | | | | **Re-assessment with additional control measures** | | | | | | **List required action(s)  to instigate controls**  **(Who, When and How) (Step 3j)** | |
| **L  (1-5) (Step 3b)** | | **I (1-5)  (Step 3c)** | | **Risk**  **Rating  (L x I) (Step 3d)** | | **L  (1-5) (Step 3g)** | | | **I (1-5)  (Step 3h)** | **Risk**  **Rating  (L x I) (Step 3i)** | |
| E.g. | Driving to / from training area | | Driver fatigue / distraction causes RTA | | Multiple injuries to cadet personnel and general public Equipment damage | | Designated, trained drivers · Compliance with JSP800 · Spill kits | | **2** | | **5** | | **10** | | **NO** | | Vehicle commander to ensure driver is concentrating and passengers do not provide any distractions | | | | **1** | | | **5** | **5** | | CFAV in charge of road move to implement all controls and brief personnel. | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Ref** | **Activity / Element** | **Hazards identified** | **Who or what might be harmed and how** | **Existing control measures** | | **Assessment with existing controls** | | **Is residual risk acceptable for the activity?  – Refer to Risk Score Calculation** | | | **Reasonable additional controls that can be implemented to reduce risk to ALARP** | | | **Re-assessment with additional control measures** | | | | | **List required action(s)  to instigate controls**  **(Who, When and How)** | |
| **L  (1-5)** | **I (1-5)** | **Risk Rating (L x I)** |  | | |  | | | **L  (1-5)** | **I (1-5)** | | **Risk**  **Rating  (L x I)** | |  |
|  | Electrical Build | Sharp points | All participants, scratches, eye injury, | Safety Brief, monitoring, safety glasses will be worn when required | | 2 | 2 | 4 | | YES | | . | | |  |  | |  | |  | |
|  | Element failure | Burns, small explosions, fire if capacitors are polarised incorrectly or if batteries are short circuited | Safety Brief, circuits will be checked for short circuits and mis-polarisation before execution.  No power supply should be connected while building circuits. | | 2 | 4 | 8 | | YES | |  | | |  |  | |  | |  | |
|  | Small elements | Can be choked on if swallowed | Safety brief, monitoring, First aiders available | | 1 | 2 | 2 | | YES | |  | | |  |  | |  | |  | |
| 4 | Battery | Can cause electric shock by discharging. | Safety monitoring, first aiders available. | | 2 | 2 | 4 | | YES | |  | | |  |  | |  | |  | |
|  | Mechanic Build | Sharp tools – (drivers, pliers) | All participants, cut, stabbed | Safety Brief, all DS monitoring during mechanical build.  Sharp Drivers are only used for low-torque requirements. Drivers only to be used in a direction not towards other participants.  For high-torque requirements, Allen keys are to be used.  Allen keys should be used over drivers wherever possible.  Horseplay not to be tolerated | | 2 | 4 | 8 | | YES | |  | | |  |  | |  | |  | |
|  | Small parts | Can be choked on if swallowed | Safety Brief, Monitor, First Aiders Available | | 2 | 4 | 6 | | YES | |  | | |  |  | |  | |  | |
|  | Assembly | Skin pinching between parts - Cadets | Safety Brief | | 3 | 2 | 6 | | YES | |  | | |  |  | |  | |  | |
|  | Sharp Edges | Cadets, grazing, cuts | Safety Brief | | 3 | 2 | 6 | | YES | |  | | |  |  | |  | |  | |
|  | Zip Ties | Cadets, Zip ties could cut off circulation to body parts if misused. | Safety Brief, Horseplay not to be tolerated | | 1 | 3 | 3 | | YES | |  | | |  |  | |  | |  | |
|  | Testing | Autonomously moving bots | Unpredictable movement could lead to trips and falls, potentially onto bots | Safety Brief, Setout testing area where cadets are not freely walk through unless placing and collecting bots | | 2 | 3 | 6 | | YES | |  | | |  |  | |  | |  | |
|  |  |  |  |  | |  |  |  | |  | |  | | |  |  | |  | |  | |
| **Activity Environmental Risk / Impact (Step 3k):** | | | | | | | | | | | | | | | | | | | | | |
| 11 |  |  |  |  | |  |  |  | |  | |  | | |  |  | |  | |  | |
| 12 |  |  |  |  | |  |  |  | |  | |  | | |  |  | |  | |  | |
|  | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | |
| **Activity Commander - The control measures when implemented are suitable and sufficient for the assessed activity to proceed:** | | | | | **No, Rank, Name: 30387251 Plt Off Harrison Milburn** | | | **Post: Activity Commander** | | | | | **Date:** 06/04/2024 | | | | **Signature: *H Milburn*** | | | |
| **Activity Commander - After additional control measures the risk rating is 15 or above. Further authority / additional resource is required. Until the risks posed are deemed ALARP and tolerable the activity will not take place:** | | | | | **No, Rank, Name:** | | | **Post:** | | | | | **Date:** DD/MMM/YY | | | | **Signature:** | | | |
| **Second Signature (OC or Nominated Rep) - I am aware of the activity and satisfied the RA is suitable and sufficient:** | | | | | **No, Rank, Name: 30387250 Flt Lt Glenn Milburn** | | | **Post: FLT LT Milburn** | | | | | **Date:** 16/04/2024 | | | | **Signature: *G Milburn*** | | | |
|  | | | | | | | | | | | | | | | | | | | | |
| **Dynamic Risk Assessment (Changes required)** | | | | | | | | | | | | | | | | | | | | |
| **Reason for carrying out a dynamic risk assessment (e.g. weather, injuries, etc):** | | | | |  | | | | | | | | | | | | | | | |
| **New limitations / restrictions to be put in place:** | | | | |  | | | | | | | | | | | | | | | |
| **Remarks:** | | | | |  | | | | | | | | | | | | | | | |
| **Activity Commander conducting dynamic risk assessment:** | | | | | **No, Rank, Name:** | | | **Post:** | | | | | **Date: DD/MMM/YY** | | | | **Signature:** | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | **Notes:** | | **Likelihood x Impact = Risk** | | **Likelihood** | | **Definition** | | **5.** | **Highly Probable** | Is expected to occur in most circumstances **(Almost Certain).** | | **4.** | **Probable** | Will probably occur at some time, or in most circumstances. | | **3.** | **Possible** | Fairly likely to occur at some time, or some circumstances. | | **2.** | **Unlikely** | Is unlikely to occur but could occur at some time. | | **1.** | **Remote** | May only occur in exceptional circumstances **(Rare).** | |  | | | | **Impact (Severity)** | | **Example (Health Safety, Environment & Safeguarding)** | | **5.** | **Critical** | * Fatality or permanent, life changing injuries to an individual. * Incident causing a major environmental impact. * A serious safeguarding incident which may have a life altering effect. | | **4.** | **Severe** | * Injuries which have a short-term impact on normal way of or quality of life. * Moderate damage to an extended area and/or area with moderate environmental sensitivity (scarce/ valuable) requiring months of remediation. * Increased safeguarding risk (cadet lone travelling) / Multiple safeguarding incidents | | **3.** | **Major** | * Injury requiring the emergency services. * Moderate damage to an area, and that can be remedied internally. * Actions which may create strain on the safeguarding supervision of cadets (low ratios or remote supervision etc). | | **2.** | **Moderate** | * Injury requiring first aid. * Damage to an area that will be immediately repaired. * Normal activity that has the potential to escalate (e.g. cadets in accommodation leading to horseplay). | | **1.** | **Minor** | * Small amount of physical exertion. * Unnoticeable or self-repairing damage to non-protected environment. | | |  |  | | --- | --- | | **Review** | | | **Step 5 -** Review the risk assessment and update if necessary - All risk assessments should be regularly reviewed at a frequency proportional to the risk prior to any controls being proposed. In practice risk assessments should be reviewed at least annually, or more frequently:   * Where required by local instructions/procedures. * If the safe execution of the activity relies on stringent supervision. * If there is reason to doubt the effectiveness of the assessment. * Following an accident or near miss. * Following significant changes to the task, process, procedure, equipment, personnel or management. * Following the introduction of more vulnerable personnel (e.g. persons under 18 or pregnant persons). | | | | | | |  | | | **Risk Management** | | | **Risk Rating** | **How Risk should be managed** | | **1 – 4 (Very Low)** | **Maintain control measures and review at least annually** or if there are any changes that may impact either Likelihood or Impact. Ensure that any changes to the residual risk, or effectiveness of controls are not re-introducing a credible Risk or potential Environmental impact. | | **5 – 9 (Low)** | **Maintain control measures and review regularly** or if there are any changes that may impact either Likelihood or Impact. | | **10 – 12**  **(Medium)** | **Review control measures and improve if reasonably practicable to do so, consider alternative ways of conducting the activity**. Consider informing command chains of activity elements that impact either Likelihood or Impact. | | **15 – 16 (Medium to High)** | Review control measures and improve if practicable to do so, consider alternative ways of conducting the activity. **Inform command chains of activity elements that affect Likelihood or Impact** to seek authority / request additional resource for the application of additional controls that may reduce the residual risk further. | | **20 (High)** | Rigorous scrutiny of control measures required to ensure risks are ALARP; improvement of existing and / or additional control measures are required where possible; consider stopping activity unless continuation is justified as essential. **Conducting activities at this level of risk will require formal consideration\*** and acknowledgement from the appropriate Duty Holder, Commander, Head of Establishment or the nominated Responsible Person who is charged with Risk Ownership for the particular activity. | | **25 (Very High)** | | *\*In the RAFAC Organisation formal consideration is to be given by Regional Commandants, COS or the activities ‘nominated person’ – even if the overall risk is held by CAS.* | | |