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| Work/Activity: Outreach rocket launches | | | |
| [Enter details of what activity you are risk assessing. Include locations, times, dates, numbers of people, duration and activity descriptions]  We will be giving a short talk on the physics and science of rockets.  After this we will work with the students to assemble cardboard rocket kits with scissors, glue and tape. They will not have the rocket motors while this is happening.  We will then prepare the rocket motors with igniters away from the children, and place motors into the rockets one at a time just prior to launch, checking that each rocket is correctly assembled and safe to launch.  There will be a 5 meter clearance zone around the rocket launch platform, in which only the person launching the rocket will be permitted. They will connect the igniter to the wires of the launch controller and retreat to the maximum distance that the cables permit. The safety key will then be inserted into the launch controller, arming the launch button. When the immediate area has been checked to be clear, a countdown from 5 will be shouted and on 0 the launch button will be pressed. In the event that the rocket does not fire, no one shall approach the rocket for at least 1 minute. Once its maximum altitude has been reached, the rocket will descend slowly on its streamer. Before launching, people will be instructed to move out of the way in the event that a rocket is descending above them. The launch pad will be located away from the watching people, with plenty of clear space down speed.  When the rockets have landed, they will be retrieved and the spent motor casing will be removed. It will then be returned to its assembler. In the event that a rocket is on fire after landing it will be doused with water. | | | |
| Group: Southampton University Spaceflight Society (SUSF) | Assessor(s): Alex Lay Jess Korzeniowska | | Contact: alex.lay@susf.co.uk jess.k@susf.co.uk |
| Guidance/standards/Reference documents | Competence requirements | | |
| [Please enter any H&S guidance referred to when write this Risk assessment. This could be codes of practice from your NGB or industry body, group policies, instructions, manufacturer’s guidance, advice from HSE, useful websites or copies of qualifications and certificates.]  [e.g]   * http://www.hse.gov.uk/Risk/faq.htm | **Role:** [who has what H&S responsibilities for each task e.g. event stewards] | **Skills, experience or qualifications** [what training/experience has this person had to undertake their H&S responsibilities] | |
| //insert link to school fire assesment |  | |
| Risk assessments linked |
| [Identify areas of your activity which will fall under a different risk assessment. For example, fire risk assessments when using a building will have been covered by the premises operator.] |

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| Task | Hazards | Who might be harmed and how | Current control measures | Current risk /9 | Additional control measures | Action by whom? | Residual risk  /9 | check SA/DM |
| Assembling launch pad |  |  |  |  |  |  |  |  |
| Preparing rocket | Handling rocket motors | Staff handling the rocket motors | Necessary care taken when assembling the rocket. | 1 | A checklist will be made that staff will follow each when preparing a rocket | Staff | 1 |  |
| Setting up rocket on launch pad | Failure to set up the rocket correctly could lead to failed ignition. | See ignition issues | Care is taken to ensure that the metal clips are not touching the blast deflector so as not to short circuit the controller. | 2 |  |  |  |  |
| Ignition | Failed ignition- rocket will not light and fails to launch | Staff | Staff wait one minute before disconnecting launch controller and approaching the rocket carefully. Igniter is disconnected. |  |  |  |  |  |
| Ignition | Rocket ignites but does not launch | Staff and observers | No observers are allowed within 10m radius of the launch pad. No one at all is allowed within 5m of the launch pad | 2 |  |  |  |  |
| In flight | Rocket may hit low flying birds or aircraft | Wildlife, passers by | The area above the launch site will be checked before launch. No launch sessions will take place near local airfields or airports | 3 |  |  |  |  |
| Landing | Rocket may hit people when landing | Staff, observers, passers by | The area is checked for passers by who may be unaware of the launch prior to launching. If there are passers by in the area launch is postponed until they are a safe distance away. | 2 |  |  |  |  |
| Recovering the rocket | If a launch has failed, the rocket may return to the ground still burning and set ground alight or hit someone. | Observers and staff could be hit by the rocket, may be hit by sparks. | No observers are allowed within 10m radius of the launch pad. Staff are spread out with room to move should rocket fly towards them. | 2 | Bucket of water will be on standby incase the rocket lands still on fire | Staff | 2 | Recovering the rocket |
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| Reviewed By: | | Comments: |
| Responsible person (SA/DM): | Date: |  |
| SUSU H&S manager (where applicable): | Date: |  |

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| Likelihood | | | |
| Impact | 3 | 6 | 9 |
| 2 | 4 | 6 |
| 1 | 2 | 3 |

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| --- | --- |
| Impact | |
| Level | **Description** |
| High (3) | Major Injury or Death; Loss of limb or life-threatening conditions. In hospital for more than 3 days, and/or subject to extensive prolonged course of medical treatment and support. |
| Medium (2) | Serious injury causing hospitalisation, less than 3 days. Rehabilitation could last for several months. |
| Low (1) | Minor/superficial injuries. Local first aid treatment or absence from work for less than 3 days. |

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| Likelihood | |
| Level | **Description** |
| High (3) | Will probably occur in most circumstances |
| Medium (2) | Might occur at some time |
| Low (1) | May occur only in exceptional circumstances |