**AstroBoost activity - Webb show with Demos – Risk Assessment**

**Activity outline:**

Demo-led show in indoor room. General family/school audiences. Activities carried out as per protocol provided by RAS.

Room supervised while audience are present. Props excepting laser pointers may be left unattended if (i) the room is locked or the area otherwise clearly signposted as out of bounds, and (ii) there are no unsupervised children under 8yr (or other vulnerable people) who could still gain access.

**Version:**

Original pro-forma as supplied by RAS, this is not a complete document and should be amended as required for each context. You may wish to develop different versions (eg indoor vs outdoor) to avoid this document becoming long and difficult to read. You can change the format, remove the branding, edit as you choose, but you must keep written copies of adequate risk assessments for any activity delivered within the AstroBoost project. Control measures should all be necessary, and practical to be followed at all times.

**This document version is a pro-forma risk assessment provided as a starting point for your own assessment**

The Royal Astronomical Society is unable to offer a thorough risk assessment that would apply for any delivery team in any situation, and therefore this document is intended only as a starting point for any organisation preparing to delivery the activities, to help speed the process and reduce the chance of unidentified risks.

The person responsible for H&S at each event should:

1. Review whether any changes are necessary for that specific event (eg due to differing experience of delivery staff, unusual audiences, venue or weather)
2. Ensure everyone involved in delivery of the activity has read, understood and agreed to follow the control measures in the risk assessment
3. Update the risk assessment after the event in light of any newly-identified risks, near misses or accidents that occurred during delivery
4. Inform the Royal Astronomical Society if any additional risk rated 10 or higher is identified where this risk is not specific to an unusual audience/venue

Name of organisation:

Name of person signing off this version of the risk assessment:

Date of sign-off: Date for review:

**AstroBoost - Webb show with Demos – Risk Assessment**

Risk: 1 = trivial; 2 = minor; 3 = requiring time off work; 4 = long term injury; 5 = death

Likelihood: 1 = rare; 2 = unlikely; 3 = occasional; 4 = regular; 5 = frequent

Risk rating: Gives a quick guide to which risks should be subject to tighter control measures. Ratings of 12 or higher are unacceptable under any circumstance.

**General items:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Object/activity (the hazard) | Who might be harmed, and how? | Control measures (protocols you will follow to reduce the risk) | Risk (worst possible harm) | Likelihood | Risk rating |
| Venue as presented on arrival | Various. For example:  Uneven floor – slips  Clutter – tripping / cuts  Electrical safety – shock | On arrival, visually check the room for any hazards over those addressed on this risk assessment. Identify required control measures. If the room is unsafe for audience or presenter, do not proceed. | 5 | 1 | 5 |
| All electrical items | All, but especially the presenter.  Electric shock. | Visual check of power supply, cables and electrical items. Do not use if damaged.  Items connected to the mains supply must be off-the-shelf undamaged/adapted electronics, or have been PAT tested. | 5 | 1 | 5 |
| All electrical cables | All, but especially the presenter.  Tripping, falling, hitting head. | Tuck all cables out of the way or use cable cover. Use extension leads where required. | 5 | 1 | 5 |
| All objects | All. Trip/slip hazard. Falling, hitting head. | Objects to be kept on or under furniture where possible. Unsupervised objects to be kept out of walkways. Other objects to be clearly signposted. | 5 | 1 | 5 |
| Heavy objects | All.  Dropping onto foot or onto small child. Back injury.  Striking person, bruising. | Heavy objects not to be held over small children!  Presenter to dynamically assess risk if passing object to someone who may struggle to hold it, considering people may have hidden disability/injury.  Presenter to stop anyone from uncontrolled/dangerous brandishing of objects that may cause harm. | 3 | 1 | 3 |
| Any object that would fit inside a cylinder 32mm wide and 58mm long. | Children, especially under 3yr. Potential choke hazard. Choking, death. | Not including objects that have been tested using a choke tester and deemed not to be a hazard.  Objects to be supervised, kept in containers or otherwise out of reach of children under 3yr. | 5 | 1 | 5 |
| Laser pointer (not required for this show, but there is one integral to the provided clicker) | All, but especially anyone without an aversion reflex (a minority of adults, some children, and all babies).  Eye damage. | Only laser pointers advertised as <1mW to be used. Presenter to be aware that such ratings are often not accurate, hence these control measures.  Laser pointer not to be used by children under 8yr. Not to be left unsupervised at any time.  Laser pointer not to be directed toward heads/eyes. | 4 | 1 | 4 |

**Activity-specific items:**

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| --- | --- | --- | --- | --- | --- |
| Object/activity (the hazard) | Who might be harmed, and how? | Control measures (protocols you will follow to reduce the risk) | Risk (worst possible harm) | Likelihood | Risk rating |
| Spray bottle with water | All.  Infection from dirty water entering mouth/eyes.  Electric shock, death.  Slip hazard, strike head, death. | Use only drinking water. Clean spray bottle at least once each day, and store dry.  Do not spray where water may land on electronics (taking into account any air movement).  Have paper towels or similar on hand where spilled water could create a slip hazard. | 5 | 1 | 5 |
| Heat pad (for heating objects to be viewed with infra-red camera) | All, but especially the presenter. Burns to skin  Burns to objects, fire, smoke creation/inhalation  [Damage of objects, eg if placed upon an object with a low melting temperature] | Beurer HK35 heat pad to be used. This is designed for use against human skin and has a safety cut-off when temperatures get dangerously high.  The pad should be considered to be at a temperature of 50°C and treated accordingly.  [The pad should not be folded, compressed or covered while in use. ] | 1 | 2 | 2 |
| Glass prism | All, but especially the presenter.  Cuts from sharp edges. | Prism not to be used by children under 4yr. Presenter to dynamically assess risk for all children.  Use by ages under 8yr to be under direct adult supervision (ie adult within reach of object). Ages 8yr to 12yr with general supervision (ie adult close by and within sight).  If the prism is dropped/damaged, it should be checked for sharp edges. Carefully clear any sharp fragments.  Presenter to re-assess the risk. Small sharp areas may be assessed as safe to use for people over 8yr who have been shown the risk before holding it.  Sharp areas should be taped or otherwise covered at the earliest opportunity. | 2 | 2 | 4 |
| Infrared camera | All, but especially audience members over 11yr and especially women with thin clothing.  The camera may highlight hot/cold areas of the body or those covered by differing layers of fabric, including breasts and groin areas.  Embarrassment / anxiety. | Where possible, presenter to carry out a check during audience entry / before showing on-screen.  Presenter to ensure camera is under their control to avoid anyone being exposed in this way, especially regarding volunteers who may feel unable to change their position/posture.  Presenter to take immediate action as required to avoid such incidents, but not to draw further attention to them eg by verbal acknowledgement. | 2 | 2 | 4 |
| Bin bag | Volunteers.  Asphyxiation / fainting leading to head injury, during or after event. | No person to put bin bag over their head. This measure is necessary as even if such an activity is safely controlled, it models potentially dangerous behaviour which may later be copied without adequate supervision. | 5 | 1 | 5 |
| UV torch | All.  Eye damage.  Battery swallowed, internal damage. | Directional light source designed for household use.  Torch not to be used by children under 4yr. Presenter to dynamically assess risk for all children. All using the torch to ensure it is pointed away from faces/eyes.  Use by ages under 8yr to be under direct adult supervision (ie adult within reach of object). Ages 8yr to 12yr with general supervision (ie adult close by and within sight). | 1 | 4 | 4 |
| Water spray / mister | All.  Inhalation of contaminated water, or ingestion from skin/hands. Infection. | Water mister to be cleaned/rinsed out at the end of each day of use. Spray some water through the system before use. Water not to be stored in the mister overnight. Only use drinking water. | 1 | 3 | 3 |
| Webb model (for swinging) | All, especially audience.  Person walks into path of swinging object, or object is released / comes apart and strikes person. Bruising, eye injury. | Check model is secure before use. No person judged to be under 11yr to swing model.  Low-weight object to be used to represent Webb telescope.  Presenter to ensure everyone is at least 1.5m outside the danger zone, with nobody in the line of motion. Presenter to monitor audience during demonstration. | 1 | 2 | 2 |
| Air cannister | All: heating leads to over-pressurisation and explosion. Cuts from can shards.  All: air blows items into eyes. Damage to cornea.  User: cold injury to fingers/hand (especially if hand has lowered sensation due to medical condition) | Can must be kept away from heat sources.  Can to be used only by adults who are aware not to release it into/near people’s faces, and aware that their hand will become cold with advice not to use it for prolonged periods.  If demo is carried out by someone with known condition that lowers sensitivity, they should use it for only short blasts (under 10 sec), or wear gloves/protective gear. | 1-2 | 2-3 | 3-4 |

**AstroBoost activity – Webb show with Demos – RA sign off**

This activity will be delivered many times. Although some risks are unlikely, anything that can happen *will* happen eventually. By following the control measures, the overall risk for long-term delivery over multiple events with multiple presenters is reduced to an acceptable level. When accidents doinevitably happen, it can be demonstrated that risks had been identified and managed appropriately.

If you feel any measures are not necessary, or are not being followed in practice, please check with the event leader to discuss the removal or amendment of that item.

Please sign below to confirm that you have read and understood the risk assessment and that you will follow the control measures as directed by this document.

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| --- | --- | --- |
| **Name (print clearly)** | **Signature** | **Date** |
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