Kent Scouts Rocket Team - Risk Assessment – **Solid Fuel Rocket Flying**

The following is the responsibility of the Range Safety Officer during rocket flying events.

Risk	Description	Mitigation
Rocket hits person or property during ascent	There is a risk that a rocket could hit a person or property during the powered ascent phase of the flight. This is most likely to be caused by an erratic flight pattern of a poorly designed / constructed rocket. It could also be caused by a poorly aimed launch, or poor launch management resulting in an unexpected take-off.	When launching, keep safe distance of 10m (for up to "D" class motors) between rocket and people. Mark distance clearly. Aim the rocket slightly off vertical, away from people; but at a max inclination of 5 degrees from vertical. Ensure rocket designs are stable – CG at least 1 calibre up from CP – for the motor type used. Achieve through prior testing or computer simulation. Ensure that all launches are managed correctly. Use launch box with safety key; safety key only inserted once ready for launch. Ensure gravitas of launch process. Ensure no-one stands above a rocket on the launch pad. Ensure launch pad stable and pegged to the ground to avoid it falling over.
Rocket hits person or property during descent	There is a risk that a rocket could hit a person or property when descending. This could be a slow descent under parachute; or a rapid "ballistic" descent if the parachute fails to deploy. The latter could result in a rocket impacting at significant speed.	Fly in an area of suitable size for the rockets to be flown, such that a normal flight and descent should land within that area. Ensure that control of that area is owned by the RSO. Ensure no active roads are within normal flight range. All rockets flown must be fitted with appropriate recovery mechanism – usually a parachute or streamer. RSO to check that parachute is likely to deploy, and likely to remain attached during flight, as a simple pre-flight check. Tug on the attachment points; ensure the parachute isn't too tightly stuffed in the tube. On all flights, all spectators should keep an eye on the rocket and be prepared to move if necessary. No sitting down! At launch, aim the rocket slightly (5 degrees from vertical) away from spectators, to ensure that any ballistic descent is away from spectators.
Rocket motors cause	There is a (small) risk that rocket motors ignite when not expected. This could happen during storage, transit, or	Store and transport motors in secure non-metallic contained labelled "Explosive".

burns to person or property	preparation for flight. There is also a (small) risk of an explosion on takeoff.	During preparation for flight, ensure that safety key on launch box is removed. Everyone to work under the safety assumption that a motor may well ignite as soon as the wires are connected. Ensure that safe distance (10m for D motors) is maintained on takeoff. In the event of a misfire, wait 1 minute before approaching launch pad. Bucket of water to be on standby at launch pad.
Rocket hits aircraft	There is a (very small) risk that a rocket could hit an aircraft.	RSO to check before and during countdown for any aircraft, and halt the countdown if spotted. RSO to encourage everyone present to shout "HALT" if an aircraft is spotted before and during countdown. If flying rockets at the same event as organised aviation (e.g. microlight), RSO to liaise with chief pilot to ensure separation of airspace.

Add any site-specific or event-specific risks here:

Name and date of Event:

Name of Range Safety Officer:

Signed and dated: