UKROC 2024 Mission

1. ROCKET REQUIREMENTS

Rockets must not exceed 650 grams gross weight at liftoff. The overall length of the rocket must be no less than 650 millimeters (25.6 inches) as measured from the lowest to the highest points of the airframe structure (including fins) in launch configuration. They must use body tubes of two different diameters in their external structure. The upper one which must be no greater than 2.25 inches (57mm) in diameter and the lower must be no less than 2.5inches (63.5mm) in diameter. Each body tube must be no less than 6inches (150mm) long. All parts of the rocket (other than disposable recovery wadding) must descend connected together under parachute. Rockets must have the team name and address to aid recovery. Rockets flown at the Finals will be required to have a painted surface, 3D printed items may be self coloured or painted. Non-compliant rockets will incur a 5-point flight score penalty on their first flight at the National Finals. Rockets may not be commercially-made kits designed to carry egg payloads with the only modification being the addition of an altimeter compartment. They must have only one stage ie the motor(s) must ignite at take off.

2. PAYLOAD

Rockets must contain and completely enclose one raw hen's egg of 55 to 61 grams weight and a diameter of 45 millimeters or less ,56 to 59mm long, flown in any orientation and any place in the rocket They must be returned from the flight without any cracks or other external damage. The eggs will be issued to the teams by event officials during the Regional Qualifying Events and National Finals, but teams must provide their own eggs for their test flights.

3. DURATION SCORING

The flight duration goal is a range of 43-46 seconds. Flights with duration in the range of 43-46 seconds get a perfect duration score of zero. Duration scores for flights with duration below 43 seconds will be computed by taking the absolute difference between 43 seconds and the measured average flight duration to the nearest 1/100 second and multiplying this by 4. Duration scores for flights with durations above 46 seconds will be computed by taking the absolute difference between 46 seconds and the measured average flight duration to the nearest 1/100 second and multiplying this by 4. These duration scores are always a positive number or zero.

4. ALTITUDE SCORING

Rockets must contain one electronic altimeter approved for use in UKROC regional finals. This must only be a commercially available altimeter, including Perfectflite APRA (no longer available but still allowable) pnut or firefly, estes altimeter, or Jolly logic one and two. Other commercial altimeters may be considered. For the national final the Perfectflite APRA will be supplied or you can use your own. The altimeter bay must be able to accommodate the APRA. The altitude performance goal for qualification flights is 820 feet The altitude score will be the absolute difference in feet between the altitude performance goal in feet and the altimeter-reported actual flight altitude in feet (always a positive number or zero). At the international final altimeters are provided by the organisers.

5. ROCKET MOTORS

See UKROC rules, paragraph 3 for details. View approved motor list here.

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