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UKROC 2024/2025

****Please note that this is a suggested week by week schedule of activities, many teams work at their own pace, especially those that register later in 2024 or early 2025. This is simply to guide you if required.**

SEPTEMBER 2024

- Teams to register (note registration closes on Friday 31 January 2025, which means you will need to compress the following schedules if you register later than September, it is feasible to start and complete the process in this time frame)

OCTOBER 2024

- Read the rules/mission on UKROC website and start a project diary/log book.
- Assign team responsibilities (such as project manager, airframe, propulsion & ignition, launch system, fundraising etc). Minimum team 3 members, max team 6 members.
- Watch the instructional video "How to Build and Fly a Model Rocket" on YouTube here. Also review the helpful documents page and blog on the UKROC website.
- Review the recommended rocket parts and our preferred vendors (starting with the "official suppliers" listed in the Handbook). Useful suppliers can be found here.
- Order one of the flight-simulation and rocket-design computer programs (RockSim or SpaceCAD), at the official team discount price directly from the vendor after you have completed your registration, details here. You can also try using the free software: OpenRocket.
- Purchase an inexpensive, one-stage rocket kit ie Estes Alpha, to familiarise your team with rocket building & flying.
- Locate a place to fly rockets at rocket clubs or local facilities. UKROC affiliated clubs can be found here.
- Develop a plan to raise money to purchase rocket supplies for two rockets and motors for at least ten test and qualification flights. Your fundraising may also cover your travel to the Finals!
- Locate a mentor if you would like to, contact UKROC and we can help with this.

NOVEMBER/ DECEMBER 2024

- Look at Team America Rocket Competition website for lots of useful information.
- Load the rocket design and flight simulation computer program that you intend to use.
- Join BMFA essential for insurance and mandatory for UKROC if first time wait till year end if you have previously been in BMFA your membership is still current.
- Fly a basic one-stage model rocket. ie an Estes Alpha.
- Order your order your altimeter(s)eg Estes, Perfectflite APRA, Pnut, or Firefly altimeter Jolly logic or any commercially available altimeter if in any doubt ask ADS (Note APRA is no longer in production but may still be used).
- Using the computer program and the knowledge gained from reading and from building basic rockets, develop a first rocket design for your entry. Develop a parts list and start to buy/make the bits.
- Using the computer program, conduct flight simulations of your design with various rocket motors, on the approved motor list, to determine the best motor(s) to use.
- Locate sources for the materials needed to build your design (starting with the official vendors in the Official Handbook) and purchase required parts and rocket motors. The lead times for some motors can be months so early selection and ordering can be critical
- Design and build (or purchase) the electrical launch system and the launch pad , if you do not have a local rocket club's system available for your use.

WEEK OF 13 JANUARY 2025

- Begin construction of your initial design for your entry.

WEEK OF 20 JANUARY 2025

- Develop a pre-flight checklist for your flight and assign responsibility for each of the duties to a member of the flight team.
- Test your launch system by test-firing igniters without installing them in rocket motors.

WEEK OF 27 JANUARY 2025

- Weigh your completed rocket and re-run computer flight simulations with actual rocket weights.

BY FEBRUARY YOU SHOULD (BUT ARE NOT REQUIRED TO):

- Test-fly your initial design (without altimeter), making sure that you leave time to redesign, rebuild, and re-fly by (add date for regionals) if this initial flight/design is not successful.
- It may be useful to test your payload compartment by dropping from a height with an egg in place but no parachute and including a weight in place of a raw egg in your early test launches

- If your first flight is fully successful, test-fly again with stopwatch timing and the altimeter installed. Repeat test flights until you hit the design targets.

- If your first flight is not successful, do post-flight failure analysis and re-design.

FEBRUARY 2025 onwards

- Continue to test fly and refine your design ready for regional events in March!