UKROC 2026

TEAM HANDBOOK

(Photographs of model rockets shown in this guide do not comply with the 2026 rules)

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ABOUT UKROC

ADS is the proud organiser of the UK Youth Rocketry Challenge (UKROC) and has been running the event annually since 2006.

The challenge is aimed at students aged 11 – 18 from any secondary school, college, educational facility or youth group to design, build and launch a model rocket with a fragile payload.

The rocket must reach a set altitude with specific total flight duration and must adhere to the specific set rules. The competition's rules and scoring parameters **change each year** to challenge the students' ingenuity and encourage a fresh approach to rocket design.

UKROC consist of 3 stages – regional events, the national final and the international final.

The Regional Events
In order to attend a Regional Event, you must register for the competition before the deadline date (31 December 2025). You and your team can then attend a Regional Event nearest to you to launch your rocket and record your qualifying flights. Your rocket launch will be scored by our Rocketry Experts. **The best scoring team from each Regional Event Day (some regionals have multiple days) will automatically go through to the UK National Final.** Further details on the qualification process are detailed in the rules.

The National Final
The **20 top scoring teams** from the Regional Events will meet at our National Final in Buckminster, Grantham. Similar to the Regional Events, you and your team will launch your rocket and if you win, well then you can start packing your suitcase as you'll be going to compete in the International Finals!

The International Finals
This is the third and final stage of the competition. The UK winning team from the National final will compete against the winning teams from America, France and Japan at the International Final at Farnborough Airshow 2026! UKROC will fund the UK winning team to attend.

Teams must commit to attending the National and International final should they reach that stage of the competition.

WHERE TO START

Building a model rocket can be challenging, especially if it's your first time, but that's part of what makes it exciting and rewarding. While you might run into some tricky parts along the way, you're not alone and we're here to help when needed. This should be a fun, hands-on experience, and with teamwork and persistence, every team has what it takes to succeed. Keep focused, stay curious, and enjoy the process!

Here are the steps we recommend to help you get started on building a rocket that could be a potential winner!

📘 Step 1: Read the UKROC 2026 rules

Before you even begin designing your rocket, it's essential to read the **full UKROC rules** - not just the summary or reduced version in this handbook. Many teams overlook important details by relying only on the shortened version and end up facing avoidable issues during their regional events. Taking the time to thoroughly understand the complete rules will help you design within the competition guidelines, avoid penalties, and ensure your team is fully prepared for success.

🕒 Step 2: Read the timeline document

This handy timeline in the handbook gives you a look at the key steps in building a model rocket. Keep in mind, it's just a guide - teams work at their own pace, and some have even won after registering late. So don't stress if you're not exactly following the timeline!

🧠Step 3: Understand the Basics

Before you start building, get familiar with how model rockets work. Key components include:

- **Body Tube** – the main structure
- **Nose Cone** – aerodynamic tip
- **Fins** – for stability during flight
- **Engine Mount** – holds the rocket motor(s)
- **Rocket Motor** – provides thrust
- **Recovery System** – parachute(s) to bring it down safely
- **Altimeter compartment** – to safely hold the altimeter during flight
- **Igniter** – for safe, remote ignition

🛒 Step 4: Get the Necessary Supplies

Make sure to visit the below sections of this handbook to secure your rocket building essentials:

- Material list
- Suppliers

Remember, many rocket parts come from abroad, motors can take up to **12 weeks** to arrive due to limited supply, so be sure to order them **as soon as possible!** Our approved suppliers are happy to give you advice.

🔧 Step 5: Build the Rocket

The exciting time has come - rocket building, where you get to see your creation come to life! This is your chance to turn ideas into something real and launch it sky-high. If you're ever unsure about anything, don't hesitate to reach out to UKROC for guidance and support. We are here to help you succeed!

You can also find handy resources on our website:

- Building a model rocket part 1
- Building a model rocket part 2

🚀 Step 5: Test fly

It's always recommended to test-fly your rocket if possible. Doing so gives you a valuable head start by allowing you to identify and resolve any issues before attending a regional event. For more information, refer to the 'Test Flying' section of this document.

IMPORTANT: Please ensure you read all communications sent to you by UKROC, as they may include important administrative tasks that must be completed before attending a regional event. Staying informed will help your team stay on track and avoid last-minute issues.

BEST PRACTICE GUIDE

Model Rocketry is a sport with an exemplary safety record. One reason is that participants have followed an established Model Rocketry Safety Code, which originated in the United States of America. The best practice notes below provide baseline standards for the launching of any model rocket in UKROC.

Note that no launch or testing of a rocket is allowed in the absence of supervising adult or teacher.

1.Construction
All rockets shall be made from lightweight materials, such as paper, wood, plastic and rubber, with only minimal metal parts. The model shall be soundly and accurately constructed and the stability must be checked before its first flight, unless of proven design. If custom parts are used in a rocket these must be designed by students, but can be fabricated commercially.

2.Rocket Motors & Launch Weight
Only motors shown on the list of approved motors are allowed*. These motors must be stored and used in accordance with the relevant manufacturer's instructions. No modification of the case, nozzle, or contents shall be carried out, nor any reloading of single use motors undertaken. The motor manufacturer's guidance pertaining to Maximum Launch Weight for safe operation must be adhered to.
***Order early to ensure supplies are available**.

3.Preparation And Recovery
All rockets must comply with the current UKROC Rules and must have provision for, and contain at launch, a recovery system so that the model may be safely returned to the ground and be flown again. Great care in preparation must be employed to ensure that the recovery system deploys correctly and that any insulating recovery wadding is flameproof. No model shall carry an explosive as distinct from a propellant, flammable, or live animal payload. No ballistic flights may be attempted, or any attempt to strike a target.

4.Launch System**
All rockets must be launched from a **rigid launch rail** to provide initial direction and stability and comply with the current UKROC Rules. The launch system must incorporate a blast deflector to prevent motor exhaust from coming into direct contact with the ground. Only rail launch systems are available at the UKROC regional events and national final. Rods can be used for testing flying only by teams prior to arrival at a regional event only.

5.Ignition System**
A model's rocket motor(s) must be ignited on the launch system using an electrical device (igniter/starter), according to the relevant manufacturer's instructions. The electrical system must allow the operator to place him / herself 10 meters from the rocket (single motor) or 20 meters (multiple motors). The system must include a Safety Key that will completely disconnect the battery when removed and shall possess an ‘on’ 'off' switch which is only activated immediately prior to the launch countdown. The Safety Key shall be inserted for the moment of launch and removed immediately

afterwards.

A clearly audible countdown of at least 5 seconds shall be given before launching. In the event of an igniter misfire, no one shall approach the model until the safety key has been removed from the launching system, one minute has elapsed and until it is certain that there is no likelihood of ignition. No one is allowed to approach the model until authorized to do so by the supervising adult.

** At Regional Finals and the National Final the launch and ignition system on the field will be provided by the organisers (ADS). If teams want to use their own equipment, they must first seek the approval of the organisers (ADS) giving full details of the equipment they propose to use.

6.Launch Site and Safety Conditions

Model rockets must be launched from open sites, away from buildings, livestock, railways and roads and in conditions of good visibility in clear air space. Launching should not be attempted in high wind conditions, where they could endanger full-size aircraft, flammable materials or in any situation that could cause a nuisance/danger to people or property. A water bucket and/or fire extinguisher shall be available at the range head to extinguish fires.

No attempt must be made to recover a model rocket from high-tension electricity cables or telephone lines. Great care must be exercised in the recovery of model rockets from high trees, water or any other potentially dangerous situation. In group flying sessions, with members of the public / onlookers present, a Range Safety Officer (RSO) must be appointed. The RSO is responsible for the safe conduct of the flying model rockets and keeping all personnel away from the point of any launch and at the minimum distance specified in paragraph 5 above.

7.Controls

It is a Civil Aviation Authority (CAA) requirement that all air users should be advised of unusual air activities that might be hazardous to other aircraft people or property. This includes model rocket launches. These notices are called NOTAMs. Instructions for writing a NOTAM can be found at http://www.ukra.org.uk/notam.
Ideally the rockets should be launched into uncontrolled airspace. If under controlled airspace the uncontrolled air space must go to 2000 feet.
If the site is with 5 nautical miles of an airfield or within controlled airspace then permission from air traffic control must be obtained before every launch.
Only fly on sites that are clear and open with adequate open space downwind of the launch point and in good visibility. No person shall launch a rocket unless he has reasonably satisfied himself that: (a) the flight can be safely made; and (b) the airspace within which the flight will take place is, and will throughout the flight remain, clear of any obstructions including any aircraft in flight. **IF IN ANY DOUBT – DON'T LAUNCH!**

8. Insurance

Teams are responsible for obtaining all the relevant and correct insurance for any launches and flights undertaken in relation to the UKROC competition.

FUNDING AND SPONSORSHIP

The cost of building a model rocket typically ranges from £200 to £400, depending on the materials and components you choose. In the past, teams have successfully secured funding by reaching out to local businesses - especially those in the space, aerospace, or defence sectors, who may have a particular interest in supporting your project. You can find a sponsorship request letter template here. Additionally, many teams have raised money independently through sponsored activities such as walks, runs, and other fundraising events.

IGNITING CLUSTERS GUIDANCE

It has been noted that many UKROC teams power their rockets with two or more motors. This technique, known as “clustering”, allows a heavier rocket to be launched using several low power motors.

The reliable ignition of clusters of black powder (BP) motors is a skill that can challenge experienced rocketeers. These guidance notes are intended to help teams to safely ignite all the motors.

Method One
One method for igniting clusters is to insert an igniter into each motor. By wiring them in parallel the motors should all fire simultaneously. This method is generally not very reliable in inexperienced hands. If one or more igniters fail to fire then the rocket could have insufficient power to launch safely.

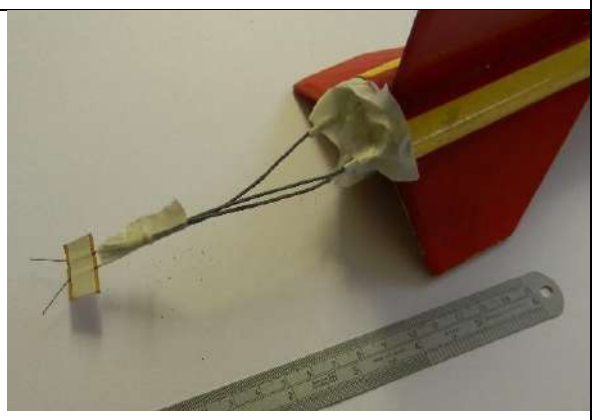
Common problems with this method are:

- Failure to put all the igniters in full contact with the propellant.
- Damage to igniters when inserting the plug.
- Short circuits
- One igniter might fire slightly before the others. It lifts the rocket and the cable pulls the igniters out of the other motors so they fail to ignite.

This method is NOT recommended by UKROC for the National Finals.

Method Two
A preferred method is to ignite all the motors from a single igniter. If this igniter fires, then all the motors should ignite. If it fails to fire, then none of the motors will ignite. This significantly reduces the problem of partial ignition of the cluster. The trick is to cut short fuses from quick match and insert these into each motor. The fuses can them be lit simultaneously, by connecting them with tape match or by bundling them together around a single igniter. When the igniter fires it simultaneously ignites all the fuses. These burn independently at the same rate, and simultaneously ignite all the motors.

Examples of this method are shown below:

Using five strand quick match (QM), cut a 4 cm length per motor, fold the QM along its length and insert firmly into the D12 motor	
Place the motors with QM attached into the rocket. Connect the motors together by using tape match folded over each QM with a single igniter at one end of the tape.	
Alternatively: Three single strands of quick match are inserted into the motors and held firm in place using masking tape. The matches are brought together and taped to a single Estes igniter. Note: the ends of the QM in the motor are folded over to improve the reliability	
As before, three quick matches are inserted into the motors. This time the matches are connected to the igniter using tape match.	

Quick match/tape match materials will be available at the UKROC National Finals. To ensure safe launches there will be experienced rocketeers in the Rocket preparation area to demonstrate these methods and ensure that teams implement them correctly.

INSURANCE

BMFA (British Model Flying Association) insurance is important for launching model rockets because it provides essential public liability coverage. This means that if your rocket accidentally causes injury to someone or damages property, the insurance can cover legal and compensation costs. Ultimately, it promotes responsible flying and gives peace of mind to both teams and event organisers.

Teams are responsible for obtaining all the relevant and correct insurance for any launches and flights undertaken in relation to the UKROC competition. The youth group insurance requires one adult at £47 and at least four unnamed young people at 1/3 of the junior (£20 rate ie £6.66). Insurance runs from year end to year end. **Teams will not be able to fly at any UKROC event without this insurance.** You can contact BMFA on +44 (0) 116 244 0028 or admin@bmfa.org.

LOGBOOKS

Teams are advised to start a logbook on day 1 of their UKROC journey. At the National Final each team must give a presentation of 10 minutes. Whilst logbooks are not a requirement at the National Final, they are an essential requirement at the International Final, so teams are encouraged to compile a logbook to support their presentations.

Logbook examples can be found here.

MATERIAL LIST

You can find the UKROC 2026 material list here.

Photo credit - Apogeerockets. Please note this is a guide only.

MATERIALS - BASIC ROCKET PARTS AND WHERE TO FIND THEM

Please note that this is a guide only. Rocket parts can be obtained from one of the suppliers listed on the UKROC website here.

- Body tube that has the same diameter the entire distance between the nose cone and the fins. This body tube may have an outside diameter greater than or equal to 47 millimetres (BT70 size).
- Motor tubes (for 1 to 4 motors per rocket)
- Nose Cone
- Motor centring rings
- 5mm Balsa Sheet or similar for fins (alternatively, two thinner sheets of balsa wood glued with the grain in opposite directions)
- Rail guides (from suppliers)
- Shock cord elastic for parachutes from a haberdashery shop or market stall
- Parachute(s) from suppliers – steer clear of the cheap nylon types
- Recovery wadding
- Kevlar Thread use braided Kevlar thread from the internet, far cheaper
- 1 to 4 motors - incl. igniters & plugs
- Altimeter – you must ensure you know how to set it up for flight
- PVA glue, 5 or 10 minute Epoxy (optional), cyanoacrylate (super glue) (optional) **–** ***you can find this in Halfords, Pound Shop, The Range or Wickes***
- Sanding sealer + brush to apply for balsa fins (from local hobby shop)
- Glass paper / wet & dry paper – ***you can find this in the Pound Shop, Wickes or The Range***
- Craft knife, scalpel (optional). Cheap packs available from - ***you can find this in the Pound Shop or The Range***
- Solvents to clean brushes ***– you can find this in the Pound Shop or Wickes***
- Paint – ***you can find this in The Range, Halfords is also good for car paint***
- Piano wire or nut, bolt and washer for motor retention - Teams can make their own motor retaining hooks from piano wire. Parts such as tubular launch lugs and motor retaining hooks are not expensive

MENTORING

We understand that building a model rocket can be both exciting and challenging, especially if you're new to the process. If you find yourself needing extra guidance or have specific questions along the way, please don't hesitate to reach out to UKROC. We're here to support you and will do our best to connect you with a mentor who can help you through the process.

Stem Ambassadors

STEM Ambassadors are volunteers from all fields of STEM who volunteer their free time free of charge to inspire young people. If you are based in Herts, Beds, Essex, Norfolk, Suffolk, Cambridgeshire or Peterborough, you can request STEM Ambassador support for all kinds of activity to raise career aspirations and gain insight into the world of work. For instructions on how to request a STEM Ambassador, please click here.

MOTOR LIST

You can find the approved UKROC 2026 motor list here. Note that TSP motors are no longer permissible.

NATIONAL FINAL SCORING

The final team rankings will be determined by combining the scores from each team's first scoring flight and their team presentation. Based on these combined scores, the top three teams will be selected. These top teams will then participate in a fly-off, consisting of one additional flight each. The final rankings will be based solely on the scores from this second flight.

Scoring is calculated by the below methodology:

Flight Score (60% of total score):

- Each team's first scoring flight will be judged in the same way as at the Regional Finals.
- Teams will be ranked based on their flight score, 1 being the best, down to 20.
- If two or more teams have the same score, they will share the same rank. The next rank will be skipped accordingly (e.g., if two teams are ranked 2nd, the next rank will be 4th).
- The team's rank number will then be multiplied by **0.6** to reflect the 60% weight of the flight performance.

Presentation Score (40% of total score):

- Each team can earn a maximum of 30 points for their presentation.
- Teams will be ranked based on their presentation scores in the same way as flight scores, using the same tie-handling method.
- The team's rank number will then be multiplied by **0.4** to reflect the 40% weight of the presentation.

Final Score:

- The flight score and presentation score (after applying their respective weights) will be added together.
- The team with the **lowest combined score** is ranked the highest overall.

Ties will result in pooling and even splitting of the prizes for the affected place(s). If there is a tie for one of the top three places, the teams involved in the tie will be required to make another flight to determine final places. ADS reserve the right to make all last and final contest determinations.

PARACHUTES

Reference: ARC Team handbook 2026.

All rocket recovery devices are designed to produce aerodynamic drag to slow the descent of the rocket once they are deployed. The drag on a falling object increases as the square of its velocity. When a descending rocket stabilizes at terminal velocity, the drag forces on all the connected parts of the descending rocket at that velocity exactly offset its weight and its acceleration becomes zero. No matter how far it falls after this, the rocket's descent velocity will not further increase. The heavier a rocket, the higher this terminal velocity will be. The larger and more "draggy" a rocket is in its recovery configuration, the lower this terminal velocity will be.

There is an excellent tutorial on how to determine appropriate parachute size and design and estimate parachute descent rate in the Apogee Rocketry "Peak of Flight" newsletter issue #149, at
https://www.apogeerockets.com/education/downloads/Newsletter149.pdf

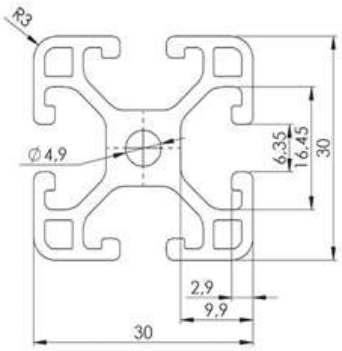
For 2026, if your rocket goes up 750 feet and takes 8 seconds after liftoff to reach this altitude and deploy its parachute, and you want the total flight duration to be 38 seconds, then the descent terminal velocity that you want for the rocket is 750 / (38 – 8) = 25 feet/second. Remember that at the international final, your flight altitude goal will be different but your duration goal will remain unchanged, so you will have to have a plan for adjusting your rocket's descent rate. The heavier the rocket, the more drag it will need on recovery to achieve a velocity this small. Higher recovery drag is easy to achieve with a parachute, just make it bigger in diameter. The factors other than size that affect how a parachute performs (how much drag it has) include:

- Weight of the rocket hanging under the parachute
- Shape (which determines the "drag coefficient" of the parachute)
- Length of shroud lines (which can be adjusted by "reefing" or tying a knot partway up the shroud lines)
- Number of shroud lines
- Type of material (fabric vs plastic)
- Size of "spill hole" in the center of the parachute
- Interaction with other parachutes where two or more are being used

There are two ways that teams can get parachutes: make buy a premade chute of the appropriate size from one of the many parachute vendors servicing the rocketry hobby; or make a parachute yourself from scratch. The former is easier. It is strongly recommended that you use parachutes made of a strong fabric (e.g. ripstop nylon) and not thin plastic; and that the shroud line be sewed on, not attached with tape.

RAIL GUIDANCE

Teams using a rail guide should have the following dimensions, 3 m (10 ft) long, launch rail standard 1010 commercial launch rail with 0.25 inch (6mm) T-slot; provided by the event officials at the fly-offs. The launch rail must be tilted between 85° and 75° from horizontal. See diagram below (Rail Dimensions in mm):



SIMULATION SOFTWARE

Note that it is optional for teams to use simulation software.

There is some great software that will let you build and fly rockets on your computer. It allows you to see how your rocket will fly with different motors and allows you to tweak the dimensions to get the performance you want. In many industries, including the aerospace, defence and space industries, simulation is a key part of design, testing and development.

There are two excellent bits of software for designing rockets called Rocksim and Spacecad. You can download demo versions to see how powerful they are. There's also a good free programme called Openrocket. It does most of what Rocksim and Spacecad can do, but without some of the more advanced features.

- https://www.apogeerockets.com/Rocket_Software/RockSim
- http://www.spacecad.com/
- http://openrocket.info/

For more information and to obtain our **UKROC discount code**, please click here. Download these and play around with them for a few days to decide which one you like the best. Start by designing a simple rocket to get the feel of the software. Choose a motor from the list and press launch. The programme will work out all the flight data and let you plot it on graphs. You can see how high it flew, its velocity, when the parachute deployed and all sorts of flight data. Most software will also create a part list and drawings.

SUPPLIERS

All UK suppliers are familiar with UKROC and are helpful and will answer questions. If possible, use parts left over from previous competitions and allow time for suppliers to obtain parts from abroad. ADS do not endorse any specific rocketry suppliers, however, our rocketeers recommended using the following websites for purchasing rocket equipment.

Specialist Rocket Shops

- Model Rocket Shop
- Rockets and Things
- Wizard Rockets
- Black Cat Rocketry
- Apogee Rockets (USA)
- Sierra Fox (Italy)
- Klima (Germany)

UK Local Model Shops

- Online directory of model shops:
- Outlets for Logic RC, UK importer for Estes Rockets

TEST FLYING AND LOCAL ROCKETRY CLUBS

We would recommend testing your rockets as much as possible to ensure you receive the best result at the regional events. We're very lucky to have partnered with some excellent rocketry clubs throughout the UK who have kindly agreed to welcome you to test your rocket. Full details can be found here.

If you plan to test fly your rocket independently, you must:

- ✓ Have a supporting adult in attendance
- ✓ Obtain the relevant insurance beforehand (refer to 'Insurance' section)
- ✓ Use a **large, open area** - far from buildings, trees, power lines, and spectators
- ✓ A **minimum launch radius of 200 meters** (as per UKRA/BMFA recommendations)
- ✓ Avoid dry grass or flammable surroundings
- ✓ Not launch near airports or controlled airspace*, densely populated areas, roads or railways
- ✓ Not launch in high winds, rain, or if there's a risk of thunderstorms
- ✓ Avoid launching through clouds or fog - visual line-of-sight must be maintained
- ✓ Inspect rocket for damage or loose components
- ✓ Test the launch controller and igniter
- ✓ Verify that all electronics (altimeter, if used) are functional
- ✓ Ensure launch area is clear before igniting

*If you are launching in controlled airspace, you must submit a Notice to Airmen (NOTAM) here. This alerts pilots to your planned activity. However, a NOTAM does not give you automatic clearance to launch - **you must always visually confirm that the airspace is clear** of aircraft before proceeding.

TIMELINE (TEAM GUIDANCE)

Just a heads-up - this schedule is a friendly suggestion, not a rulebook! Many teams cruise at their own pace, especially if you're starting later in 2025. Think of this as your handy guide, not a racetrack. So, no worries if you're just getting started, some of our winners have been late starters in the past! Keep calm and keep going!

7 Months before regional qualifying events

- Read the UKROC 2026 rules 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.

- **Optional:** 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.

7/6 Months before regional qualifying events

- Look at Team America Rocket Competition website for lots of useful information.

- Load the rocket design and flight simulation computer program if you intend to use one.

- 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.

4/3 Months before regional qualifying events

- Begin construction of your initial design for your entry.

3 Months before regional qualifying events

- 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.

2 Months before regional qualifying events

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

1 Month before the regional qualifying events, 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.

1 Month before the regional qualifying events

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

UKROC 2026 RULES

TEAMS ARE REQUIRED TO READ THE FULL VERSION OF THE UKROC RULES DOCUMENT HERE AS IT CONTAINS MORE DETAILED ROCKET SPECIFICATIONS NOT LISTED BELOW.

IF A TEAM DOES NOT READ THE FULL RULES AND FAILS TO COMPLY, THIS MAY RESULT IN DISQUALIFICATION.

- **Rocket length** must be no less than 650 millimetres and weight at take-off must be no greater than 650 grams
- **Rocket body tube** must have the same diameter the entire distance between the nose cone and the fin, this diameter must be **at least** 47 millimetres (BT70)
- **Motors:** single stage with no more than 80-Newton seconds of total rocket motor power using one or more motors from the approved UKROC motor list (type F and smaller)
- **Payload** of one raw hen's egg of 55 – 63 grams weight, carried in any orientation that must survive the flight uncracked
- **Parachutes:** all parts of the rocket must descend safely connected (tethered) together using one or more parachutes for recovery
- **Target altitude** is 750 feet (229 meters)
- **Target flight duration** is 36 – 39 seconds
- **Important update:** Estes altimeters and TSP motors are no longer permitted for UKROC 2026. Only rail launchers are allowed at the regional events and the national final.
- Rockets flown at the national final should have previously flown safely and successfully.

If you have any questions or require technical support, please contact ukroc@adsgroup.org.uk