2026 RC Aircraft Competition - Design, Build, Compete

1.0 Preamble

1.1 Throughout 2026 Cadets and Officers are challenged to design and build their own aircraft to compete at the first annual review.

1.2 There are no restrictions on what type of aircraft can be designed at this time but may change in future years. Cadets may design planes, helicopters. Blimps or otherwise. The competitions may lead to a dominate design choice but will be adjusted each year to encourage new designs.

1.3 The RC Aircraft Competition will be held during the 2026 Commissioners review on Sunday September 13th.

2.0 Competition Registration

2.1 Registration for the RC Aircraft Competition entries via the web at https://cadets.org.au/register/

2.2 Online registration is to be completed and submitted to the Aviation Commander via the registration link no later than Saturday 1st of August 2026. The web won't accept entries after Saturday 1st of August and no unregistered teams will be permitted to compete at the Commissioners review.

3.0 Guidelines

3.1 General

3.1.1 Within reasonable expectations. The design must be started from scratch and not include any part of any previous competition. External or otherwise.

3.1.2 Models must fit within an 80CM cubed box.

3.1.3 Models may be made from any combination of plastic, wood, foam or aluminum. Please ensure all types used are safe for general handling.

3.1.4 3D printing is permitted however points for originality may be impacted and all predesigned parts from 3D printing resource sites must be linked and credited.

3.2 Competition groups

3.2.1 Members will compete in the age group they are on January 1st, 2026

3.2.2 Members can compete individually or in teams of not more than five so long as all team members are within the same competition group.

3.2.3 Officer/Open Competition includes Members aged 18 years and older

3.2.4 Senior Cadet competition includes members aged 14 to 17 years old

3.2.5 Junior Cadet competition includes members aged 13 years and younger

3.3 Disqualifications/penalties

3.3.1 All aircraft must be designed and built by the registered team members. External assistance beyond tasks that may be dangerous for a youth person to safely do is strictly forbidden.

3.3.2 Designs that are deliberately unsafe will be immediately disqualified. Examples of unsafe designs are sharpened points, flammable fuels without appropriate measures etc.

3.3.3 In the interest of fair competition. designs that clearly exceed the specified budget will be disqualified from competing

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4.0 Budget

4.1 Each individual/team has a maximum budget of $400 total materials cost.

4.2 All designs must have a record or their components value fairly reported to and approved by the Aviation Commander by Saturday 1st of August 2026.

4.3 It is recommended to maintain a buffer from the maximum budget to avoid disqualification from the event if a component is deemed under reported by the Aviation Commander.

4.4 This budget report must include any already owned items used in your design not just newly purchased components.

4.5 If you have access to parts outside of retail supply, you must report the value at reasonable retail value that would be reasonably available to other competitors.

4.6 Any programming software and computers are not included.

4.7 Very low-cost materials (single items costing less than 5 cents) can be added without impacting the budget however this is subject to reasonable assessment by the aviation commander and must be reported.

5.0 Flight Competitions

5.1 Drag Race

5.1.1 Models will compete to race 100m in the fastest time from ground to ground within the take-off and landing zones.

5.1.2 The take-off and landing zones will be 5 metres long by 2 metres wide with 100 metres from the end of the take-off zone to the beginning of the landing zone.

5.1.3 The take-off and landing zones will be a natural grass surface.

5.1.4 The race timer starts from the first motion of the model in the take-off zone and ends once the model comes to rest within the landing zone.

5.1.5 A five second penalty applies if the models take off fails to leave the ground within take off zone.

5.1.6 A five second penalty applies if the models landing fails to land within the landing zone

5.2 Agility Race

5.2.1 Models will compete in a hoop track of ten hoops.

5.2.2 The Hoops will be 90cm in diameter and held 1.5 meters from the ground.

5.2.3 For each hoop missed a time penalty of five seconds will be added. A competitor may backtrack to avoid this penalty or being disqualified.

5.2.4 Hoops must be flown through in the number order specified in the track diagram. Failure to comply will be deemed a missed hoop.

5.2.5 Hoops must be flown through in the flight direction specified in the track diagram. Failure to comply will be deemed a missed hoop.

5.2.6 A team that misses three or more hoops will be disqualified.

5.2.7 The Track diagram will be provided to registered competitors on Saturday 1st of August 2026

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6.0 Judging and points scoring

6.1 The competition officiator is the Aviation Commander. All disputes are to be directed to the aviation commander for final decision.

6.2 While encouraged, visual factors of the models such as paintwork or liveries are not considered in the judging process

6.3 A panel of three judges will be appointed by the Aviation Commander. While neutrality is the objective and obligation of the judges, the assigned judges will be final regardless of unit affiliation.

6.4 Any disputes regarding judging scores will be addressed by the aviation commander and decisions will be final.

6.5 Points will be awarded based on the following parameters

6.5.1 Originality (30% overall score weight)

6.5.1.1 Judges will award a score out of ten for the novelty of the design.

6.5.1.2 A design that is heavily inspired by an aircraft but makes changes to dimensions **MAY** be considered an average score of 5, this will be considered by the judges.

6.5.1.3 Design features not seen on aircraft or being used in a new way **MAY** increase the novelty score.

6.5.1.4 The average of the three judges' scores will be used for the final calculation

6.5.2 Complexity (30% overall score weight)

6.5.2.1 Judges will award a score out of ten for the complexity of the model's design

6.5.2.2 Examples of complex design include moving parts, incorporation of flying abilities such as VTOL etc.

6.5.2.3 Complex aircraft such as multi pitch propellors or retractable gear **MAY** be an average score of 5. This will be considered by the judges.

6.5.2.4 More complex features such as variable wings **MAY** increase the score.

6.5.2.5 The average of the three judges' scores will be used for the final calculation

6.5.3 Flight Competition placement (see paragraph 5.0 for further details (40% overall score weight)

6.5.3.1 In the drag race; ten points will be awarded to first place, eight points to second place, six points to third place and so on.

6.5.3.2 In the agility race; ten points will be awarded to first place, eight points to second place, six points to third place and so on.

6.6 Example score

6.6.1 "A Team" is awarded as follows

Event	Judge A	Judge B	Judge C	Average/Total
Novelty	8	6	7	7.00 X 0.3 = 2.1
Complexity	5	4	5	4.66 X 0.3 = 1.4
Drag Race	Third place 6 points			8.00 x 0.4 = 3.2
Agility Race	Fifth place 2 points			
Grand Total score				6.7

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7.0 Message from the Aviation Commander

7.1 Please ask your Commanding Officer to email the aviation commander at j.zanker@cadets.org.au for any questions or queries you may have regarding the competition.

7.2 I wish all entrants the best of luck in this inaugural 2026 RC Aircraft Competition. I hope to expand this competition in future years and welcome feedback from all members about what they would like to see in future competitions. Have fun!

With Integrity, Discipline and Respect,

Aviation Commander Joel Zanker
Australian Cadet Corps Inc.

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