R/C STOL COMPETITIONS:

AIRCRAFT REQUIREMENTS AND SPORTING REGULATIONS

CAO: 26 Oct 2025

R/C STOL Competition Aircraft Requirements

If you are unsure if your aircraft complies with category requirements, please consult the Contest Director either prior to the event or during registration.

Aircraft may be modified from stock in any way that does not conflict with stated category requirements.

Up to 2 back-up aircraft are allowable (3 total).

There is currently only one defined category, “Open STOL” – more categories will be defined in the future.

‘Open STOL’: This category is intended to have entry-level, commercially-available STOL airplanes remain competitive in their stock configuration while still allowing some modification for pilots who wish to do so.

1. **Aircraft entered must be propeller-driven and may be electric, glow, or gas-powered.**
   1.1. Multi-engine and push-props are allowable.
   1.2. No battery or engine size restrictions. Propellers may be of any material or type.

2. **Aircraft entered must be fixed-wing airplanes with a minimum wingspan of 43”/1.1m (Aeroscout wingspan or larger).**
   2.1. No maximum wingspan.
   2.2. All high/mid/low-wing configurations are allowable. Multi-wing aircraft are allowable. For multi-wing aircraft, at least one of the wings must meet the minimum wingspan by itself.
   2.3. Helicopters, drones, or any other VTOL-capable aircraft are not allowable.

3. **Aircraft entered may be constructed of any material (foam, wood, composite, etc.) and must feature a “full fuselage” (see below for clarification).**
   3.1. Profile fuselage ‘foamies’ and stick fuselage aircraft (e.g., the Slow Ultra Stick) are not allowable. This is to help manage wing loading and drag tolerances without direct measurement.

4. **Aircraft entered must feature either a tricycle or tailwheel landing gear configuration with all 3 wheels freely rotating.**
   4.1. Wheels must not be stuck, excessively grinding, or any other form of not freely rotating.
   4.2. Excessive wheel toe, either in or out, is not permitted. Excessive toe is defined as greater than +/- 30 degrees.
   4.3. Retracts are allowable but not recommended.
   4.4. Aircraft must be able to rest stably on their wheels for takeoffs and landings.
   4.5. Skids or other alternative landing gear to wheels are not allowable. Wheels must be round with uniform/consistent tread (no intentional flat spots, etc.).

5. **Aircraft entered may use all installed control surfaces in whatever programmable configuration desired for air-braking (crow, full-span flaps, etc.).**
   5.1. This includes the use of leading-edge slats.

6. **Aircraft entered may not utilize 'internal' braking mechanisms, including wheel brakes or reverse thrust.**
   6.1. Reverse thrust may be installed on the aircraft but cannot be used in the competition. Wheel brakes must not be installed.

7. **Aircraft entered may not have any 'external' braking mechanisms other than installed control surfaces.**
   7.1. Tail hooks, rockets, parachutes, etc., are not allowable.

8. **Aircraft entered must not have any 'active' autopilot features installed (installed but not utilized does not meet the requirement).**
   8.1. SAFE, traditional gyros, and GPS telemetry (and only telemetry) are allowable.
   8.2. Active autopilot features include the Spektrum Landing Assist Sensor module (LAS) or any other form of GPS navigation.

R/C STOL Competition Sporting Regulations

Overview

The competition consists of attempts where pilots taxi past a known line and stop, take off straight down the runway, fly one pattern, and then touch down past the line and bring the aircraft to a full-stop straight ahead. There are 3 total rounds with each round consisting of 3 consecutive attempts per pilot.

Scoring

Scores for an attempt are the sum of a paired takeoff and landing distance from the touchdown line. **The takeoff is scored from where the mains lift off and the landing is scored from where the aircraft is brought to a full stop (NOT the touchdown point)**. The lowest score of the 3 attempts per round is taken as the pilot's recorded score for that round (the other two are free throwaways). The scores from each round are added together to get a cumulative score for a pilot on the day. Trophies/Prizes are given for the 1-3 cumulative lowest scores. Additional superlative trophies may be distributed as desired by individual Contest Directors (worst crash, best single score on the day, etc.).

Any fair takeoff or landing that is spotted 'long' beyond 200 ft (or an alternative pre-determined distance based on airfield requirements) will be automatically given a score of 200 for that half of the attempt without measurement. The other half of the attempt will be added normally for that attempt - this means there is a benefit to landing long but still fair and under control. **All scratches are scored as a double max distance score, 400, the same as the worst possible 'fair' score for a combined long takeoff and long landing.**

Pattern Flow

Takeoff:

Once cleared onto the runway by the Marshal, pilots will be given 1 minute to enter the runway from the on-deck position (time may be used to start engine and tune, etc.). Failure to take the runway within the allotted time results in a scratch for the entire round. No special provisions are in place for gas/glow if unable to start and take the runway on time.

The pilot will taxi his aircraft past the touchdown line to a full stop in-line with the runway (not excessively cocked and with no part of the wheels touching the line). If a pilot overshoots the line up, they are not allowed to back-taxi for a reattempt - pilots must begin their attempt from the point they first stopped.

Once in position, the Marshal will signal the pilot may take off. The pilot may do so after the signal at their discretion.

Pattern:

Pilots will fly one large box/oval pattern directly to an approach/landing. After takeoff, pilots will fly at least to the departure end of the runway prior to turning, and they will attempt to maintain lateral spacing on the downwind leg as defined per the individual airfield. They will not perform aerobatics or otherwise deviate from making pattern traffic.

Landing:

After landing, **pilots will bring the aircraft to a full stop and WAIT for the landing score to be taken**. After measurement, the pilot will be signaled by the Marshal to start back taxi for the next attempt or for runway exit. The signal for back taxi marks the start of the next attempt.

Scratch Definitions

The Marshal is the deciding authority for all ruling disputes and for enforcing safety considerations.

The 'good' half of the score of a given attempt is thrown out when any landing or takeoff is a scratch - the entire attempt is recorded as a scratch.

Pattern Fault:

Aircraft must take off and land while maintaining within +/- 45 degrees of runway heading throughout the entirety of the takeoff and landing rolls (pilots may "shimmy" within these tolerances to bleed off excess energy). All aircraft wheels must be entirely on the runway throughout the takeoff and landing rolls. Pilots must abide by Marshal signals before taking the runway, taking off, and beginning back taxi. Aircraft must fly the designated pattern dimensions. Failure to abide by any of the above results in a pattern fault scratch.

In the event of heavy wind that may cause uncommanded backsliding prior to takeoff and after landing, the Marshal can make special allowances to normal pattern flow. Pilots will be required to take off from a position past the line but may be allowed to start with power-on provided they are stable. On landing, pilots will still be required to stop their motors and attempt to bring the aircraft to a full stop, but the spotter will mark from the most forward position where the aircraft stopped before being blown back.

Line Fault:

On landing, **the mains must touch completely beyond the touchdown line** (any part of the main wheels ON the line is a scratch). The tailwheel or tail of an aircraft may touch prior to the touchdown line provided the mains first touch completely beyond. If an aircraft bounces on landing, the first touchdown is taken for line fault purposes. On takeoff, a bounce does not result in a scratch but resets the takeoff spot to the point of the bounce.

Go-Around:

A go-around on a landing approach results in a scratch for that attempt. A go-around must then be landed for a new attempt to begin (the landing after a go-around is procedural and will not count for any scores). A bounce on landing in which the throttle is goosed but the plane is still landed and brought to a full stop is not a go-around.

Crash:

A 'crash' is defined as an event where the aircraft cannot continue under its own power, made prolonged/extended contact with the ground with any part of the plane other than the wheels, or otherwise damaged the aircraft such that it is no longer airworthy. Many crashes will also involve a pattern fault – in such an instance, the category for the scratch will be 'crash'.

The Marshal will declare a crash if he deems the above criteria have been met. The scratch for the crash is applied to the attempt on which the crash happened. The intent of the crash rule is to ensure there are no situations that reward out-of-control flying, either intentional or unintentional. Examples of a crash could be a hard landing that obviously damages the aircraft's propeller or landing gear (as determined by the Marshal), a nose-over, or a flip. Momentary grazes of the fuselage or wingtips that otherwise do not result in a pattern fault do not result in a crash. A gas/glow deadstick on landing approach or after landing can still result in a fair attempt if there are no other infractions, but the subsequent attempt will likely be scored a scratch due to the need to attend the plane for a restart.

Once a crash is declared, pilots should then reset their own planes, although pilots may choose to allow the Spotter or Marshal to do so for them. Once they reach their aircraft, pilots will be given 2 minutes by the Marshal to attend to their aircraft and begin back taxi for the next attempt, otherwise they are automatically withdrawn from the rest of the round. Only one 2-minute crash recovery period will be granted per round. During those 2 minutes, a pilot may elect to simply reset and continue the round, do quick spot repairs and continue, or withdraw from the round if the damage is too substantial to repair in time. The Marshal may also determine that an aircraft is no longer airworthy and withdraw it from the round. Any valid scores in the round up to the point of withdrawal will still count. Any additional attempts not completed because of a withdrawal will also be scored as a scratch and annotated as Did Not Start (DNS). Pilots may repair between rounds or switch to their back-up planes.

If a pilot elects to attend their plane for any reason when a crash has not yet been declared, the current attempt will be deemed a ‘crash’. Minor incidents during taxi/back-taxi that do not result in damage will not count as a crash. If electing to attend a plane after receiving an otherwise valid landing score, the scratch is applied to the subsequent attempt.