

# MAAA RULES 2013

## 4.19 CLASSIC FAI TEAM-RACE (**Trial rules version – see rule 4.19.4**)

The aim of Australian Classic FAI team race is to re-create FAI team racing as it was before 1970, when in the eyes of many people, models were more beautiful, less expensive, and flew over grass at speeds most people can cope with. The 1968 FAI team race F2C rules (modified) apply as follows:

4.19. 1 Definition of Team Racing - Team racing is a simultaneous race between three models flown by three pilots, in the same circuit. (In exceptional cases - two models flown by two pilots).

4.19. 2 Team - Each model is presented by a Team consisting of a pilot and a mechanic. The name of the pilot and the mechanic must be indicated in the Entry Form. The pilot of each model must remain in the centre circle; he has no other function than the piloting of the model and stopping the engine while flying. The mechanic must remain on the outside of the flight circle during the race; his function is to start the motor, and refuel the tank during the race. His duties include the operations necessary to restart the motor after each stop.

4.19. 3 Definition of Team Racing Models - Model aeroplanes in which the propulsion energy is provided by a piston engine and in which the lift is obtained by aerodynamic forces acting on the supporting surfaces which must remain fixed during flight. The models must be of the semi-scale type and their general lines must be in accordance with those of full-size aircraft. Competitors may be required to justify their model design with documentary evidence of similar full-sized aircraft.

The choice of models designed before 1970 is encouraged, and such designs may be modified provided all other provisions of these rules are met. "Own design" and designs never before published are allowed. Models must be of traditional "Wing and tail" layout. Flying wing type models are prohibited. Asymmetry in the plan view is limited to a maximum of 15mm. V tails are permitted. Construction materials for models are unrestricted, except for the following which are not allowed: Components such as wings moulded from carbon fibre and all-metal wings. Aluminum or Magnesium pans are allowed.

4.19. 4 Characteristics of Team Racing Models:

Total maximum weight 700 gms

Maximum swept volume of engine(s) 2.5 c.c.

Total surface (wing and stabiliser) minimum 12 sq. dms.

Minimum dimensions of the fuselage at the pilot's location: Height 100 mm; Width 50 mm;

Minimum cross sectional area 39sq.cm.

Wing fillets shall not be included in the fuselage cross sectional area. The wheel or wheels shall have a minimum diameter of 25 mm. Landing gear must not be retractable. Mono wheel is permitted.

The tank complete with all connecting tubes must be accessible. A single function valve is permitted. Pressurised refuelling systems other than a hand held squeeze bottle are not permitted. The use of multi-function filler valves is not permitted.

The combined capacity of the entire fuel feed system to the engine (tank, valve, tubing filter etc.) is limited as follows:

**15cc tank capacity ..... radial ported engines such as Rothwell R250's, Oliver's or any replicas. Super Tigre G20/G15 both FI and RV.**

**10cc tank capacity ..... Fora and Parra, as currently used. Rossi RV, K&B 15.**

**7cc tank capacity ..... Nelson Steel**

**Other engines can be approved and allocated tank capacity upon request.**

The use of Tetraethyl Lead (TEL) is prohibited. The models must fly anti-clockwise round the course. The motor or motors must be entirely enclosed including the cylinder head and the body of the carburetor (except the opening to the induction throat and a silencer – if fitted). The only parts permitted to protrude from the body are those which have to be manipulated during the operation of starting the motor or motors or regulating the mixture. (Fuel, needle valves, compression control, advance control, plugs, tank fillers, etc.) Openings for the entry and exit of air, exhaust, etc., may be provided for proper functioning of the motor or motors.

Pilots must be able to stop and land the model within ten laps, when required by the Contest Director. Internal connection of control lines is permitted.

Currently acceptable engines are:

Oliver Tiger (any model up to Mk4, original or copy, including Rothwell R250),

Fora Junior or Pioneer.

ST G20 diesel,

ST20/15RV Diesel.

MVVS (any model)

ETA 15

Parra 15

Taipan up to series 13 Diesel

KMD

Enya 15D (any model)

**K&B 15 (Steel piston/liner)**

Other engines may be approved upon request; ad hoc for that contest only by the contest director after consulting with other competitors, or by the MAAA Control Line Subcommittee for ongoing inclusion in this “acceptable engines” list. In any event, newly approved engines must not diminish the competitiveness of the currently acceptable engines.

A cockpit or cabin with transparent windshield giving direct visibility forward must be provided to house the scale model pilot whose head shall be not less than 2 centimeters high, and shall be clearly visible.

The undercarriage must be fixed in a permanent manner to the model so as to permit normal take-off and landing.

The use of wheels totally made from metal is forbidden.

Models need to be designed and constructed in such a manner as to be in the spirit of the rules.

There is no restriction on exhaust outlets.

Propellers are limited to commercially available injection moulded glass reinforced plastic propellers. Propellers may be reduced in diameter or area over the outer half of each blade. Graupner or APC 7" x 6" are suggested as a good starting point. Carbon fibre or glass fibre props are prohibited.

- 4.19.5 Control Handle and Lines - Distance between the centre of the control handle and the centre line of the model shall be 15.92 metres +100mm, - 0 mm. The diameter of the control lines must not be less than 0.381 mm (0.015 inches). Single line control (monoline) is not permitted.

In control line handles used for team racing, the distance from the axis of the handle to the point of attachment of the control lines shall not exceed 4 cm.

A load test shall be applied to the assembled control handle, lines and model equal to 20 times the weight of the model before any heat.

The use of line groupers attached to the wing tip is not permitted.

The round, diecast control handle/reels commonly used in Australia before 1970 are permitted.

Control handles must be near the ground during the start of the race and during pit stops.

- 4.19.6 Length of Course - The length of the course shall be 10 kilometres (100 laps) with two mandatory refueling stops except for the final which shall be 20km. (200 laps) with five mandatory refueling stops.
- 4.19.7 Team Racing Site-  
(a) The flight circle of 19.6 metres radius is divided into six equal segments for the location of the starting positions of the competitors.  
(b) The radius of the centre (piloting) circle must be 3 metres  
A team racing site may have a short grass or hard surface.
- 4.19.8 Starts  
(a) Allocation of the starting positions will be by means of a draw. The competitor drawing position No. 1 will have the choice of starting positions, the remaining competitor's will, in the order of the draw; select one of the remaining unoccupied starting segments.  
(b) The teams shall be matched by a draw, made by team names and if possible arranged so as to avoid more than one team from any State competing in one heat.  
(c) It is not permissible to run an engine while entering the circle or before the signal at 4.19.9(a).
- 4.19.9 Method of Starting  
(a) A first signal gives the mechanic the opportunity of running his engine or engines for 90 seconds.  
(b) A second signal announces the end of the warming-up period.  
(c) Thirty seconds are then allowed during which last moment preparations may be made and the starter counts the last five seconds. Filling of the fuel tanks is carried out before the starting signal.  
(d) The starting signal is given by means of an acoustic signal (e.g whistle)  
(c) Timing commences at the instant of the starting signal.  
N. B. - The pilots must be crouching at the moment of starting and the mechanics must be standing.
- 4.19.10 Refueling  
(a) The mechanic must carry out the refueling of the model in the nearest rearward sector of the flight circle in which the model stops forward motion.  
(b) Only when this sector is already occupied by another competitor may he occupy the sector forward of this point.  
(c) In Cases when the model stops its forward motion within two sectors which are already occupied the mechanic must go back to the nearest rearward free sector.  
(d) During the refueling and re-starting the model, the lines and control handle must remain near the ground.  
(e) The model is allowed to fly a maximum of two consecutive laps without its engine running.

N. B. - The pilot must be crouching or seated during refueling and restarting. The model may not be recovered with the engine running or prior to touchdown with the engine stopped.

4.19. 11 Flying Style Height and Passing - The normal flying height must be between 2 and 3 metres.

The pilot should have his control handle near the middle line of his chest (except when overtaking, starting and landing when an exception for two laps is allowed). However, he may employ a more relaxed flying style by positioning his controlling hand forward of the vertical line (hand off chest) between the middle of the chest and the top of the forehead.

Passing must always take place over other competitors and the overtaking pilot must indicate his intention of overtaking to the other competitors. A height of 6 metres must not be exceeded while passing.

The pilot being overtaken must on no account carry out any manoeuvre to impede the overtaking competitor.

4.19. 12 End of Race

(a) Timing will finish when the model has completed the necessary circuits of the course to cover the specified distance.

(b) The race will, in any case, be terminated 10 minutes after the starting signal (for the final, 15 minutes).

(c) A pilot whose model can no longer continue to fly or has finished the course must remain crouched or seated just outside the piloting circle of 3 metres radius so long as the other competitors have not finished their flights, except when instructed otherwise by the Contest Director.

4.19. 13 Team Classification

(a) Each competing team must take part in at least one eliminating race to qualify for the final, but it may participate in two. If, during the first fifty laps in an eliminating race only one team remains in participation the race shall be declared null and void and the remaining team shall be re-matched in another heat during the round.

(h) The three teams which have registered the three best times during the eliminating races qualify for the final race. In the case of a tie, the results of a second heat will be taken to establish the teams for final race. If there is still a tie, a new heat will decide.

(c) The final placing of the finalists is established solely on the results of their flight in the final after rechecking the tank capacity and declared characteristics. The remaining competitors are placed according to their best flight in the eliminating races.

4.19. 14 Warning and Cancellation of the Heat. The Contest Director will be responsible for observing the conduct of each team during a heat. Teams will be informed of any offence. After any three offences a team will be eliminated from a heat.

Warning or cancellation of the heat shall be notified to the mechanic. If the misdemeanor persists or is repeated a second warning shall be given. If the misdemeanor still persists or any other infringement occurs, cancellation of the heat shall be notified.

In the event of any serious breach of the rules the Contest Director shall cancel the flight immediately.

A team shall be warned:

(a) If the pilot interferes with, or obstructs, other pilots, either by his conduct in the circle or by the manoeuvre of his model preventing the other model from flying or landing normally.

(b) If a pilot in the center does not walk around, standing on the same place, or walking backward.

- (c) If a pilot does not have the control handle near the middle line of his chest (except overtaking, starting and landing when an exception for two laps is allowed).
- (d) If a pilot applies physical effort to increase the speed of his model during the official flight.
- (e) If the height level of the flight is exceeded by the model (in overtaking especially by the lower model).
- (f) If during refueling the model is not on the ground or the control handle is not near the ground.
- (g) If, after refueling the mechanic starts his model in front of the sector line.
- (h) If the refueling is not made in the appropriate sector.
- (i) If an engine is started while entering the circle or before the signal at 1.1.9(a).
- (j) Any other flagrant breach of the rules.

A team shall be disqualified from a heat:

- (a) If during the heat the pilot steps out of the center circle of 3 metres (10 ft.) radius, except as allowed by 1.1.12(c).
- (b) If the mechanic penetrates into the zone of flight with both feet.
- (c) If the mechanic retrieves his model by any device from the zone of flight.
- (d) If the model is recovered with the engine running or prior to touchdown with the engine stopped.
- (e) If a member of a team or the model caused a collision.
- (f) Jettisoning occurs (at each Intermediate take-off, the model must be in the same condition as it was at the start).

4.19. 15 Second Attempts — If through interference or obstruction (and through no fault of its own) a team is eliminated from a heat, or a time-keeping or lap counting error prevents a valid race time, that team shall be given the opportunity of making another attempt.

4.19. 16 Judges and Time-keepers. — The organisers must appoint a panel of at least three Judges who shall preferably each be of a different State and be selected for their proficiency and experience. This requirement does not apply for local competitions, where the Contest Director can be the sole judge.

Two time-keepers and two lap counters are allotted to each team and they must be located on the outside of the flight circuit adjacent to the starting point of the team they are timing. (Single time-keepers and lap counters may be sufficient during heats, but two must be used in the finals.) A single time-keeper/lap counter per team is acceptable at local competitions.