CONTROL LINE "Z-CLASS" RACING RULES

As at 1st January 2013

PREFACE

"Z-Class" is a variation of an established event - namely the "original" Bendix 35 class, re-invigorated in 2007 by a group of flyers known as Aeromodellers of Logan City (ALC). Z-Class is intended to be relatively cheap and accessible, utilizing cheap sport engines, and the option of building simple models. It is of course the hope of this class, to make a fun, entry-level racing event, to get more people involved with the concept of Control Line Racing. Since the integration of ALC with LARCS, the sponsorship of these rules now rests with LARCS.

GOVERNANCE

Although the event has been in existence since 2007, it still has not been offered to MAAQ/MAAA for sanction as an official event. This version of the rules brings in further refinements and clarification.

1. DEFINITION OF "Z-CLASS RACING"

Z-Class Racing is a simultaneous race between three models flown by three pilots in the same circuit (in exceptional circumstances, two models flown by two pilots). The objective of the race is to complete the required number of laps in the shortest possible time. A team shall consist of one pilot who shall remain in the centre of the circle, piloting the model, and one mechanic (and one assistant if required) who shall remain outside the flight circle and who shall start the engine and perform any necessary duties throughout the race. The personnel of a team shall remain unaltered throughout a contest. It is not permissible for any person to be a member of two teams, without the approval of the Contest Director.

2. EQUIPMENT

2.1 Number of Models - A team may enter and have checked two models only.

2.2 Spare propellers, plugs and general accessories are permitted. In the case of engines, spares are permitted, but the model may need to be reprocessed at the discretion of the CD.

3. ENGINE RESTRICTIONS

3.1 Models must be powered by one engine only.

3.2 Mufflers are mandatory where engines exceed local noise rules . Tuned pipes are not allowed.

3.3 Where mufflers or exhaust extensions are fitted, the overall length may not exceed

125mm measured from the centerline of the piston to the end of the muffler or extension.

3.4 Maximum engine capacity shall not exceed 4.00 cubic centimeters (0.25 cubic inch).

3.5 As it is the intention of these rules to make this event as cheap, accessible, and enjoyable as possible, certain unmodified*, currently available, ABC ball raced sport motors may be used, if listed in these rules. Currently, the GMS 25, OS 25 - model LA, FX, AX and FP, Enya 25, Magnum 25, Fox 25, and ASP25A Acro Engines are permitted. "Unmodified" in this context refers to all aspects of the engine, except for the fitting of a venturi and needle valve, and changing head shims to adjust compression ratio. Substituting ceramic bearings for standard format bearings, smoothing of sharp edges within the motor and gas flow ports or removing the taper from cylinder head squish bands are not permitted.

3.6 Venturi size is unlimited by these rules.

3.7 Motors may be started either by flicking the propeller by hand, or by a starting device, including an electric starter.

4. FUEL RULES

4.1 There are no requirements for tank capacity. The fuel filler pipe ID (inside diameter) must be no larger than 3.175mm (1/8 inch) diameter.

4.2 Suction-feed only is allowed, i.e. no muffler or crankcase pressure.

4.3 Fuel shut-offs are optional.

4.4 In the case of glow-engines, fuel is limited to the following ingredients.

1. **Methanol:** No restrictions.
2. **Oil** No restrictions.
3. **Nitromethane:** No more than 10% by volume.

No other ingredients are permitted so "Duty of Care" obligations can be met both for other contestants and for visitors who may inhale fuel vapours or exhaust fumes.

4.5 In the case of diesel engines, fuel is at entrant's discretion excepting substances banned by the MAAA Inc. and the FAI.

5. MODEL RULES

5.1 Model must resemble in outline, the fuselage and flying surfaces of a full size aeroplane, which has competed in the BENDIX-THOMPSON series of trophy races or NPRPA Formula 1 races or GOODYEAR and CONTINENTAL Trophy Races or similar races. Onus of proof, i.e. photos, drawings, etc. are the responsibility of the entrant

and must be produced to the contest officials for processing, if requested.

5.2 The Fuselage shall have a minimum width of 12 mm at the cockpit.

5.3 The Fuselage shall have a minimum length of 609 mm from the back of the propeller.

5.4 The Fuselage shall have a minimum height of 125 mm at the cockpit.

5.5 The Wing can be solid-balsa or built-up or foam construction. Wings may be reinforced by other woods or fiberglass. There is no restriction on coverings materials.

5.6 The Wing shall have a minimum wingspan of 910 mm.

5.7 The racing number of the prototype must be marked on each side of the fuselage, and also the inboard wing, in a minimum height of 50 mm.

5.8 The contestant's AUS number must be marked on the upper surface of the outboard wing in a minimum height of 25 mm.

5.9 The Lines shall be a minimum length of 18.3 metres measured from the handgrip of the handle to the centre line of the fuselage, + 100 mm, - 0.00 mm.

5.10 The control lines shall be a minimum diameter of 0.455 mm (0.018 inch). Single strand lines and monoline control systems are not permitted. Control lines are to connect to the model lead-outs at a point between 50mm and 150mm from the wing tip.

5.11 All lines, handles, bellcranks and connectors must withstand a pull-test of 20 KG and must also meet a safety inspection. "LUXON" type or central sliding type line connectors are NOT permitted.

5.12 The model must ROG, with at least two wheels a minimum diameter of 50 mm. The use of all-metal wheels is prohibited. Nose skids are not allowed.

5.13 Undercarriage location need not be true-scale.

5.14 Model and contestants must conform to local, club, safety and noise regulations.

5.15 Model shall have a maximum weight of 1300 grams, including fuel, excluding lines and handle.

6. CONDUCT OF CONTESTS

6.1 The number of laps flown shall be: -

6.1.1 Heats - 80 laps with one mandatory re-fuelling stop.

6.1.2 Final - 160 laps with three mandatory re-fuelling stops.

7. RACE SITES

7.1 A race site must consist of two concentric circles, which shall be marked on the grass as follows: -

7.1.1 The circle to be used by the mechanics is 22.3 metres radius. This is called the flight circle and is divided into six (6) equal 60-degree sectors, the limits of which define the starting and re-fuelling points.

7.1.2 The circle to be used by the pilot shall be three (3) metres in radius. This is called the centre circle. The pilot is permitted to place one foot outside the centre circle after the mechanic has retrieved the model.

7.2 The mechanic and assistant, if used, must each wear a safety helmet with a chinstrap worn under the chin, strong enough to withstand the impact of a model being used in the competition.

8. STARTING OF THE CONTEST

8.1 A pitting area is occupied by each of the models, which are to participate in the race. The model of the team designated first in the draw occupies the place chosen by that team. The other team(s) choose one of the remaining free pitting areas in the order of the draw.

8.2 A 90 second warm-up will be signaled, followed by a 30 second cool-down period.

8.3 The starter will count off the last five seconds of the cool-down period, during which the pilot must be crouching, the mechanic and assistant, if used, standing upright and with the model on the ground.

8.4 The starting signal is then given by means of both a visual (flag) and an acoustic signal.

8.5 If all teams agree, the starting procedure described in 8.2 through 8.4 can be omitted, in favour of a 15 second countdown.

9. PIT STOPS

9.1 The model may not be retrieved with the engine running or prior to touchdown with the engine stopped.

9.2 The pilot shall be permitted to place one foot outside the centre circle only after the mechanic has retrieved the model.

9.3 Mechanics must not, at any time, enter the flight circle without the consent of the CD, and then they must enter the flight circle radially to retrieve the model, with one foot remaining outside the circle at all times.

9.4 The mechanic must refuel the model in the nearest rearward sector of the flight circle in which the model stops or is stopped. Only when such sector is already occupied by another team may he occupy the sector forward of the stopping point. A pit is deemed to be occupied by a team, if the team's mechanic is standing there, even if their plane is in the air.

9.5 In the case of a model stopping in a sector whose adjacent sectors are already occupied, the mechanic must go forward to the nearest free sector.

9.6 During the pit stop (re-fuelling and re-starting) the model's lines and control handle must remain as close as possible to the ground. If an opponent's model is landing during the pit stop, the left wingtip, lines and control handle must be as close as possible to the ground. The mechanic must not release the model into the path of a landing model. The centre line of the model must remain outside the flight circle during the pit stop. During the pit stop, fuel must be added to the tank.

9.7 Landing models must over-fly all occupied pit segments.

10. FLYING HEIGHT

10.1 Racing height shall NOT exceed three metres and the height of overtaking models shall NOT exceed five metres. In overtaking, the faster model must pass over the top of the slower model(s).

11. FLYING STYLE

11.1 The pilot shall fly with his handle not more than 300 mm from his chest. "WHIPPING" of the model is not allowed. The pilot must walk in a forward direction at all times.

12. FINISH OF RACE

12.1 The race is ended in the first of the following events:

12.1.1 Completion of the required number of laps, or

12.1.2 10 minutes after the starting signal in a heat or 20 minutes in the final.

13. TEAM QUALIFICATIONS AND CLASSIFICATION

13.1 The contest shall be divided into two (2) preliminary rounds and a final. Each Entrant Team shall be given the opportunity to fly once in each preliminary round.

13.2 Time is decided from the moment of the starting signal to the moment of completion of the last lap.

13.3 The three teams, which have recorded the three fastest times in the preliminary rounds, qualify for the final. In the event of a tie, the Entrant's final placing will be decided by their other preliminary round time. In the event of a further tie, placing shall be determined by a fly-off race flown over 160 laps.

13.4 In heats and finals, rankings will be determined firstly on times, and in the event of the elapsing of the maximum time limit, on the number of laps flown in that time.

13.5 If through interference or obstruction, a team is eliminated from a race through no fault of their own, they shall be given the opportunity of a further attempt at that round.

14. WARNINGS AND DISQUALIFICATIONS

14.1 Warnings shall be given to mechanics. Any team receiving three (3) warnings shall be disqualified. A team shall be warned in the following cases:

14.1.1 If a pilot interferes with or obstructs another pilot, either by his conduct in the circle or by a maneuver of his model, prevents another model from flying or landing normally.

14.1.2 If a pilot, instead of walking forward at all times, walks backwards.

14.1.3 If a pilot flies with his handle more than 300 mm from his chest.

14.1.4 If a pilot applies physical effort to increase the speed of his aircraft.

14.1.5 If the prescribed height levels are exceeded.

14.1.6 If during the start of a race or during a pit stop the model is not kept in contact with the ground or kept outside the flight circle or the handle and lines are not kept as close as possible to the ground.

15. DISQUALIFICATIONS

15.1 If the pilot steps out of the centre circle before the mechanic has retrieved the model.

15.2 If the passing is done by flying under the slower model.

15.3 If the pilot whose model is being overtaken carries out any maneuver to impede the

overtaking competitor.

15.4 If a member of a team or their model causes a collision.

15.5 If the model is retrieved with the motor still running or prior to touchdown with the motor stopped.

15.6 Arguing with the Contest Director will lead to disqualification.

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