

5.1.2 General Characteristics of Classic Radio-Controlled Aerobatic Models

a. Definition

- i. A Classic Radio-Controlled Aerobatic Model is a model that was designed, and the prototype flown, prior to the 15th October 1983, the end date of the 1983 World Championships.
- ii. A plan of the model must have been produced and published and should be made available on request to prove the validity of the model. Alternatively, a valid model may be constructed from a kit produced before or after the 1983 World Championships but originally flown at or before the 1983 World Championships.
- iii. It is the responsibility of the pilot to prove the validity of the aircraft.

b. General

- i. The maximum mass of the aircraft (including batteries but excluding liquid fuel) is 5kg.
- ii. Power systems are restricted to either internal combustion engines or electric motive power.
- iii. Gyro and other auto stabilisation systems are prohibited.

c. Compliance to plan

The model must be built using materials specified on the plan with the following permitted alterations:

- i. A Fibre Glass Fuselage using either epoxy or polyester resin to reinforce a glass fibre cloth or chopped mat glass substrate can be used as an alternative to a wooden built up fuselage. Carbon fibre or Kevlar may be used for local reinforcement but cannot be used for more than 5% of the surface area of the fuselage
- ii. An expanded polystyrene foam core wing with either balsa or obechi veneer skins can be used as an alternative to a wooden built up wing. Wing halves may be joined using a glass fibre cloth bandage up to a maximum of 102mm wide. Carbon fibre or Kevlar may be used for local reinforcement but cannot be used for more than 10% of the surface area of the wing.
- iii. A wooden built up wing can be used as an alternative to an expanded polystyrene foam core wing shown on the plan. Carbon fibre or Kevlar may be used for local reinforcement but cannot be used for more than 10% of the surface area of the wing
- iv. A fuselage constructed of wood can be used as an alternative to a Fibre Glass Fuselage shown on the plan. Carbon fibre or Kevlar may be used for local reinforcement but cannot be used for more than 5% of the surface area of the fuselage.
- v. Wing and tail profiles used on the plan must be used on the model.
- vi. There are no material restrictions on covering materials, hatches or canopies.
- vii. Internal structural variations are permitted providing the external shape of the model is maintained. For example:
 - a. Relocation of wing ribs and formers.
 - b. Changes in material or material sizes.
 - c. Addition of shelves to accommodate batteries

d. Compliance to outline

The model must comply to the three-dimensional outline of the model shown on the plan with the following exceptions.

- i. The outline and shape of the nose may be altered to permit fitment of different power plants and silencers and additional hatches incorporated to allow access to batteries or fuel tanks.
- ii. The distance from the propeller driver to the wing leading edge may be extended or reduced by up to 15% from plan to accommodate the mass of different power plant combinations for the sole purpose of maintaining the correct centre of gravity. The overall shape of the fuselage nose section should remain as close to the plan as possible.
- iii. The undercarriage may be lengthened by a maximum of 35mm to accommodate a larger diameter propeller.
- i. There are no restrictions on the use of hardware used to furnish the model. For example, radio equipment, undercarriage assemblies, propellers, spinners etc. with the exception that Contra Rotating propellers are prohibited.
- iv. Changes to thrust lines and wing/tail incidences are permitted.
- v. All primary control surfaces (ailerons, elevators and rudder) must be the same size and position as shown on the plan.
- vi. Flaps that are shown on the plan are an optional fitment.
- vii. It is not permitted to add any additional control surface (for example flaps), if they are not shown on the plan.
- viii. A plan may be scaled up or down but the outline must not change with the exception of constraints listed above.
- ix. A 3% linear dimensional constructional variance to plan is permitted to accommodate build errors.

e. Power Source

The following Power Sources are permitted:

- i. Normally aspirated 2 stroke internal combustion engines fitted with an extended manifold and tuned pipe with a swept volume of 0.65 cubic inches or 10.65 cubic centimetres.
- ii. Normally aspirated 2 stroke internal combustion engines fitted with a manufacturer's standard untuned silencer and manifold (or equivalent) with a swept volume of 0.92 cubic inches or 15.07 cubic centimetres. The maximum permitted length of the manifold is 60mm measured from the engine exhaust outlet to the beginning of the silencer chamber.
- iii. Normally aspirated 4 stroke internal combustion engines fitted with a manufacturer's standard silencer and manifold with a swept volume of 1.22 cubic inches or 20.10 cubic centimetres.
- iv. For the avoidance of doubt, supercharged or turbo charged internal combustion engines are prohibited.
- v. Aircraft shall have a noise output not exceeding 82dBA measured at 7 metres and with the aircraft held upright, straight and level, 1 metre off the ground with the engine at full throttle. Noise measurements will be performed from the front, rear and both sides of the aircraft.
- vi. Electric motor powered aircraft may be powered with a Lithium Polymer battery of any capacity or discharge rate but with a maximum charged voltage of 25.8V. This is equivalent to a 6 cell series wired battery.
- vii. Liquid fuel shall be either a mixture of either methanol and oil or gasoline and oil. There are no other restrictions on fuel content for internal combustion engines with the

exception that a maximum of 15% (by total volume) Nitromethane additive is permitted. Nitrous Oxide or other performance additives are prohibited.

f. Declaration

The competitor may be asked to sign a declaration that the model has been constructed and is being flown in accordance with the rules and specifications described above.

DRAFT FOR DISCUSSION