

NZMAA FLYING RULES

Section 7: Radio Control Scale : Static Rules,1998

1.a. **INTENT**

The intent of this competition is to foster interest in SCALE MODEL AIRCRAFT, by encouraging realistic, prototypical flight plans, and accurate Scale Model Aircraft.

1.a.1. The following classes are considered;

i. **OPEN SCALE** is for all flying models of full size aircraft capable of carrying a living pilot. The contestant must be the builder and pilot of the model.

ii. **LIMITED SCALE** is for flying models of full size aircraft prototypes capable of carrying a living pilot, with weight and dimensional limits as for FAI Class F4c. The contestant must be the builder and pilot of the model.

iii. **TEAM SCALE** is for all flying models of full size aircraft capable of carrying a living pilot. The Team consists of two or more, one of whom must be the builder and one the pilot, both of these should be on the flying field.

1.a.2. Any model may be entered in one class only at any competition.

1.a.3. Each contestant may compete only with one model in any one class.

1.b.1. Models must comply with NZMAA standard of maximum weight, wing loading and engine capacity.

2.1. **ENTRY DETAILS**

2.1.1. Exact name and model designation of subject aircraft shall be indicated on Entry Blank and in the "Proof of Scale" presentation.

2.1.2. To be eligible for "Fidelity to Scale" points, the following documentation is required to be submitted to the judges:

i. Accurate, published three view drawings or colour drawings having minimum wing-span of 150 mm, or a maximum scale of 1/24 or maximum scale of 500 mm. The drawing **MUST** be submitted in duplicate. The second copy must be the same size, but may be in black and white. A third (b & w) copy may be submitted on which the judges, at their discretion, may note items which they consider have lost points. This is a courtesy only, and is not mandatory on their part.

ii. Colour drawings from authentic sources, including "three views" are acceptable for proof of colour and markings.

An authenticated written or printed description is also acceptable. Home made drawings by the contestant or other draughtsperson are not acceptable unless certified accurate in advance of the contest by an

authoritative source, such as the NZMAA RC Scale Technical Committee, builder of the original aircraft, or other competent authority. Proof of the cruising speed must be given.

iii. At least three (3) photographs or printed reproductions of the prototype. Ideally, at least one should be of the actual subject, as proof of markings. However, if this is not possible, published colour artwork will suffice.

iv. The competitor should supply a declaration listing all visible components of the model not made by themselves. The competitor should also sign a declaration that he/she is the builder of the model as entered. Penalty may be disqualification.

2.2. JUDGING FOR FIDELITY TO SCALE.

2.2.1. Where a K factor is noted, scoring shall be from 0 - 10 inclusive. The score, which may include fraction of a point, shall then be multiplied by the K factor.

2.2.2. K Factor values.

1	Scale Accuracy	
	Side View	10
	End View	10
	Plan View	10
2	Colour	
	Accuracy	2
	Complexity	1
3	Markings	
	Accuracy	4
	Complexity	2
4	Surface Texture and Realism	8
5	Craftsmanship	
	Quality	7
	Complexity	3
6	Scale Detail	
	Accuracy	5
	Complexity	<u>3</u>
	TOTAL	65

Items 1 to 3 are to be judged at a distance of not less than 3 metres;

Items 4 to 6 are to be judged at a minimum distance of 1 metre, from the nearest point of the model.

2.2.3. Scoring:

For Flying Scale Contests, the combined Fidelity to Scale and Craftsmanship points shall be the aggregate sum of points awarded by three judges. These points can be used for final classification only when the model completes an official flight.

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- 2.3. A handler may be provided at the discretion of the contestant, to position the model for the judges. Contestants may perform this function, but may not initiate discussion with the judges

3.1. GENERAL : JUDGES GUIDE FOR STATIC JUDGING.

- 3.1.1. Prior to commencement, the judges should review the whole entry at a distance not closer than 3 metres in order that a standard be established for grading of points to be awarded. The entries should be studied in relationship to each other from a superficial aspect before detailed examination begins.

A chief judge shall be appointed as spokesman. This person's responsibility is to lead discussions and make suggestions for the scores to be awarded as a basis for further discussion. The use of fractions of a point is important to separate similar top class models.

3.2. DOCUMENTATION FOR PROOF OF SCALE.

- 3.2.1. The minimum documentation required (see 2.1.2.) must be provided. Failure to comply shall result in no points for that section which has no documentary proof.

- 3.2.2. Addition documentation is desirable, but a constant should not be penalised for lack of detailed photographic authentication. It is the contestant's responsibility to provide the documentation in a clear, logical fashion to assist the judges.

4.1. JUDGING

- 4.1.1. A starting point of 10 is set for each category. It is suggested that ½ point deductions be made for discrepancies.

It is most important in all judging, to rely on the documentation supplied by the contestant.

A judge's "personal knowledge" of an aircraft type has no place. Firstly, it may be inaccurate, and secondly, its application to a model will lead to unfair inconsistencies versus other models.

The documentation is proof, and the sole source of reference. No measurements will be taken, and the models will not be handled by the judges.

4.2.1. Scale Accuracy

Generally, recommended technique is to break the outline down into significant sections. For example, start at the nose and work up along the dorsal line to the cockpit, to the fin, around the rudder, along the belly to the wing or undercarriage, and back to the nose. Similarly end and plan views should be assessed in sections. Subtract points for discrepancies in each section, depending on impact on the whole outline.

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- 4.2.2. Firstly, have the model positioned in a pose similar to that in the best photograph, and check for any discrepancies, also assess the "character" and realism of the model. Repeat this procedure with other photographs.

Then, using photographs and drawings, check:

SIDE VIEW, including the fuselage outline, cabin or canopy shape, cockpit aperture shape, outline of fin and rudder, wing and tailplane sections, wing stagger and struts on biplanes; shape, angle and position of undercarriage, size of wheels and tyres.

END VIEWS, for dihedral, wing thickness and taper, wing struts, bracing and gap on biplanes, thickness of fin and tailplane, cross sections of fuselage and engine cowling(s), cowling shape and cut-outs, propeller size and shape, shape of cockpit canopy or windshield; size, shape, position of landing gear, wheel track, tyre thickness.

PLAN VIEW; above (and below if provided) for wing outline and fairings, aileron shape and size, flaps; tailplane size and outline; elevator size, shape and cut-outs, trimtabs, fuselage shape and taper, cockpit or canopy shape, engine cowling shape.

NOTE: The photographs must take precedence over the drawings if there is any doubt concerning an item of scale accuracy.

4.3.1. **Colour**

Look for accuracy of reproduction of actual colour, as evidenced by the contestant's documentation.

Colour documentation should be accepted in a priority scale giving overriding importance to:

1. Authenticated original material.
2. Authenticated paint sample.
3. Colour photograph.
4. Recognised published artwork.
5. Commercial accepted matched colour, eg. Humbrol.
6. Written documentation.

Check overall colours, and also colours of the national insignia and lettering.

Camouflage colour schemes should show the correct degree of shading.

Marks awarded should reflect the degree of difficulty on completing a complex multi-coloured scheme. Deductions should reflect the impact any individual discrepancy has on the appearance of the whole. For example, a shade discrepancy on a monochromatic subject will have much greater impact than a similar discrepancy in one colour of a national insignia on a multi-coloured subject.

4.3.2. **Markings**

Check the position and size of all markings and lettering. Check that style and thickness of all letters and figures are correct. Check that any trim strips are correct and in the right positions. Check camouflage patterns. Deductions again should reflect the impact of any discrepancy on the appearance of the whole.

4.4.1. Surface Texture and Realism

Look for realistic reproduction of the prototype's surface texture. Use of appropriate covering fabric, paint texture etc.

4.5.1. Craftsmanship

Two things are to be looked for:

1 The quality of the workmanship, with particular reference to filling of grain, clean sharp edges, especially trailing edges of wings, tail; correct gap at hinges, ends of ailerons and elevator; close fit where wing attaches to fuselage and general finesse.

2. The amount of work done by the contestant. Firstly, check the declaration on the entry. Those items which should be declared are visible items which affect the model's appearance. Hidden engines and mechanism need not be declared.

This clause is worth a total of 15%. It should be further weighted by deductions, before application of a K-factor, thus:

- a. Model built from basic materials and plans, i.e. "scratch-built"
No deduction: $K = 10$.
- b. Model built from commercial kit using traditional wood construction, or of "plastic" structure requiring significant input from the contestant:
 $K = 8$.

ARTF kits requiring minimal contestant input are not eligible for OPEN SCALE, LIMITED SCALE OR TEAM SCALE competitions under the "Builder of the Model Rule".

4.6.1. Check that items listed are present on the model where applicable, and that they are accurately reproduced and positioned.

Hatches	Brake pipes	Bracing
Handles	Landing gear springs	Turnbuckles
Footsteps	Tyre treads	Struts
Doors	Wingslots	Armament
Lacing or stitching	Navigation and landing lights	Pilot head
Aerials	Bombracks	Walkways
Venturis	Control cables	Tanks
Fillercaps	Control horns	Radiators
Louvres	Fairings	Cooling gills
Mass balances	Cockpit or cabin interior	Instrument panels

Marks awarded should reflect both the accuracy and the quantity of the scale detail present. A well-documented highly detailed model should score proportionally higher than a model with little detail, even though the prototype bore little surface detail. Deductions for discrepancies should reflect the overall impact on the model's appearance.

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