

The SpaceTec Cup „Sport Scale“ Competition

1. Scope

Sport Scale Competition is open to any model rocket that closely resembles an existing or historical rocket vehicle. The purpose of this competition is to produce a flying replica of a real rocket vehicle that exhibits maximum craftsmanship in construction, finish, and flight performance.

2. Classes

The following classes of Sport Scale shall exist:

2.1. Sport Scale

Any size model may be entered. Maximum impulse is limited to a total of 160Ns (“G”).

2.2. Giant Sport Scale

The model must be at least 100 centimeters in overall length or at least 10 centimeters in body diameter. Vehicles with significant outer assemblies or winged vehicles qualify if their length plus wingspan totals at least 100 centimeters or if their girth totals at least 31.4 centimeters.

3. Exclusions

Sport Scale models of amateur rockets are specifically excluded from this competition, except when the prototype is of obvious historical significance.

4. Non-Flying Prototypes

Entries in Sport Scale Competition may model non-flying or inert prototypes.

5.

6. Plastic Models and Kits

Entries that qualify for Plastic Model Conversion Competition are specifically excluded from this event. Parts from commercial plastic kits may be used on Sport Scale models, provided this is pointed out in the data presented with the model for judging.

7. Data

The contestant must supply data to substantiate his/her model’s adherence to scale in shape, colour, and paint pattern.

8. Stages

If the prototype is a multi-staged vehicle, the scale model may be designed so that some or all of the upper stages are inoperable dummies. However, a scale model of only the upper stages of a multi-staged vehicle may not be entered without the operable lower stage(s) unless specific data is furnished to prove to the judges that the upper stage configuration has flown separately, alone, and as a vehicle itself.

9. Transparent Fins

If the prototype is not stabilized by means of fins, or if the scaled fins are not of sufficient size to ensure the stable flight of the model, the scale model may be fitted with transparent plastic fins to make it stable in flight. However, the transparent fins and their attachment shall be judged for craftsmanship along with the model.

10. Judging

Models shall be judged for static points in the following manner:

- Scale-like qualities are to be judged from a distance of 1 length of the rocket but at least one meter from the model.
- Judges may then closely examine the model to judge it for craftsmanship.
- At least 3 major dimensions shall be checked for accuracy.

At the conclusion of a scale craftsmanship event, each entry shall receive a copy of the judging worksheet for his/her .

11. Details

Details that are not visible during judging (e.g., dummy engines, hidden interior assemblies) shall not be considered in scoring the entry.

12. Flight

Each entry shall make a safe, stable flight. If the entry does not make a safe, stable flight, it shall be disqualified.

13. Static Points

Static points shall be awarded according to the following schedule:

13.1. Similarity of Outline: 200 points

The contestant is required to submit data to substantiate his/her model's visual resemblance to the prototype.

Minimum allowable data consists of:

- A line, tone, or color drawing; or
- One or more clear photographs, halftones, or photo-reproductions of the prototype, sufficient to show the outline and general configuration of the prototype modeled
- Scale factor (5Pts)

- Overall length (5Pts)
- Significant body diameter(s) (5Pts)
- Fin length and width (if applicable to the prototype) (5Pts)
- Color pattern (documented either in writing or by photographs) (5Pts)
- One clear photograph, halftone, or photo-reproduction (5Pts)
- For at least all required dimensions listed above, both the actual (prototype) dimensions and the scaled (model) dimensions presented in a table or on a drawing (10Pts)

Dimensional data must be from an accurate source, such as magazines, books, the prototype manufacturer's specifications or data sheets, and so on. Dimensions for which explicit data cannot be found may be calculated by proportioning drawings or photos; dimensions obtained in this manner must be so identified in the data.

Any entry not accompanied by the minimum allowable data as listed above shall be disqualified. The Judges may disqualify any entry that, in their opinion, is accompanied by substantiation data of such poor quality as to fail to convey a satisfactory impression of the outline and general configuration of the prototype.

13.2.Finish, Color, and Markings:: 200 Points

The contestant should submit data to substantiate his/her model's fidelity to the prototype. Suggested options include:

- One or more clear photographs, halftones, or photo-reproductions, including at least one in color. The number of these submitted should be sufficient to substantiate additional views of the model on which the color pattern and markings differ significantly.
- Other published pictorial representations, such as a color painting, or a drawing from a magazine.
- A detailed written description, from a reliable source, of the color scheme and markings, accompanied by a drawing of the prototype on which the color scheme and markings described have been included. This drawing may be neatly made by the modeler

Any entry not accompanied by data substantiating the finish, color, and markings of the prototype shall be given zero points for Finish, Color and Markings, but shall not be disqualified from the competition.

13.3.Degree of Difficulty: 100 Points

Points shall be awarded according to the difficulty experienced by the modeler in building the model and adapting it for flight. Minor consideration should be given to whether the model was built from scratch or a kit. Points should be awarded for parts and details that were individually constructed by the modeler. (To facilitate judging, the contestant should point out difficult assemblies or construction problems in his/her substantiation data packet.)

13.4. Craftsmanship: 300 Points

Points will be awarded for neatness, care in construction, craftsmanship of visible details, and quality of finish. Consideration should be given to the invisibility of body seams and wood grain, the proper curving of curved lines, and edges made properly sharp or rounded as visible from the substantiating data. The finish should be free of fingerprints, brush strokes, runs, or other unintentional blemishes; and the paint pattern should be well-defined. The details should be precise, and neither more nor less obvious than on the prototype.

14. Flight Characteristics: 300 Points

300 flight points shall be awarded according to the following schedule:

14.1. Mission: 200 Points

Mission points are awarded for appropriate and scale-like operation of the model during flight. Examples of such operations are staging, simulated cloud seeding, operation of electronic payload, and smoke ejection. Any such operation must comply fully with the safety standards set forth in this NAR Sporting Code. If it does not, the entry shall be disqualified. The RSO is the only official who may judge the safety qualities of the operation.

14.2. General Flight: 100 points

General Flight points are awarded for proper operation of the model during flight, including launch, lack of misfires, stability, recovery, and lack of damage on landing. No consideration should be given to staging or scale-like flight characteristics, as these are covered under Mission points; however, if the general flight performance of the model is adversely affected by the failure of one or more of these aspects, points may be deducted from General Flight.

15. Scoring

Sport Scale Competition shall be scored as follows: the points awarded to the entry in static judging shall be added to the points awarded to the entry in flight. The contestant receiving the highest score is the winner.