2017-2018

Senior Pattern Association

Section II

Judges' Guide

Contents

SECTION II - JUDGES' GUIDE

1. PRINCIPLES: The principles of judging an RC model should be based on the perfection with which the model performs each maneuver described in Section III. The main criteria used to judge the degree of perfection are:

a. Precision of the maneuver

b. Positioning or display of the maneuver

c. Size or dimensions of the maneuver

d. Smoothness or gracefulness of the maneuver

All of these criteria should be judged to determine the final score for each maneuver. These criteria are discussed below.

a. Precision: Grading of a maneuver's precision will be based on how well the model flies the path of the individual maneuvers as described in Section III, Description of Maneuvers. All straight lines, both horizontal and vertical, will be graded on the path flown by the model. Changes in attitude of the model to maintain a straight path will not be reason for downgrading.

(1) The judge should form an image of the forthcoming maneuver based on using the straight and level entry. The absence of a definite entry into a maneuver increases the difficulty of judging its precision. The straight and level exit from a maneuver is one of the more valuable portions of a maneuver in evaluating how well the intended course of the maneuver was followed. Therefore, the absence of a well-defined straight and level entry or exit should result in downgrading.

(2) Failure to call the beginning or completion of the maneuver should result in a downgrade of a ½ point per missing call.

b. Positioning: All scored maneuvers, except landing and takeoff, must be performed within the maneuvering area. The center maneuvers in all classes should be performed in the center of the maneuvering area in a plane exactly perpendicular to the judges' line of sight to the model.

(1) The diagrams used to describe the maneuvers in Section III are intended to represent the geometry of the maneuver. They are intended to define the best view of the maneuver to be presented to the judge. "End on" or "canted" presentations should

Back to Contents

be avoided, unless the maneuver is intentionally offset (with permission of the judges) to avoid the sun or another aircraft.

(2) No bonus for exceptionally low altitude is justified. The entry and exit altitudes for most maneuvers should be the same. Exceptions include the Immelmann Turn, Inverted and regular Three Turn Spin and Traffic Pattern. Resultant downgrades should be proportionate to the difference.

c. Size: Flying so far out as to make evaluation of a maneuver difficult should be downgraded. The main criterion here is visibility. Maneuvers performed on a line greater than 500 feet in front of the pilot should be downgraded, as even the keenest eye begins to lose perspective at this distance.

(1) Since the size of the maneuvering area varies proportionally with the distance from the judges to the model's line of flight, the size of the maneuvers will vary as well. In addition, maneuvers should be proportioned relative to the size of the other maneuvers in the flight.

(2) The competitor should proportion the maneuver sizes, especially those with loops, squares, or verticals, to the distance out within that broad corridor that he chooses to fly. Large maneuvers placed close in should be downgraded if exceeding the vertical 60 degree limit. Small maneuvers placed far out should be downgraded for appearing to hide the maneuver.

(3) In all classes, the judge should be careful to judge only the skill with which the maneuver is flown and presented, not the performance of the aircraft.

d. Smoothness and Gracefulness: A most general definition would relate to providing a smooth polished flow from start to finish. A perfect loop cannot be made up of a series of straight flight increments joined by sudden angular jerks. Rotations in the pitch axis of the model should be made evenly and be of sufficient radius to give a smooth appearance in flight. Excessively tight maneuvers should be severely downgraded. All these criteria should be judged to determine the final score for each maneuver.

2. ACCURATE AND CONSISTENT JUDGING: The most important aspect of consistent judging is for each judge to establish his standards and to maintain that standard throughout the contest. It is advisable for the Contest Director or Chief Judge to hold a briefing prior to the start of the contest in order to make the standards as uniform as possible.

3. JUDGING INDIVIDUAL MANEUVERS: The schedules of maneuvers to be performed are described in Section III. Each maneuver is to be scored individually on a basis of 10 to 0 points, in whole or 1/2 point increments, according to the degree of

Back to Contents

excellence. When in doubt, give the lower score. A 10 should be awarded only if no flaws are seen that would justify a lower score.

a. Section III of this Guide contains a description of each maneuver and lists a number of reasons for downgrades. The maneuver should be downgraded according to:

(1) the type of defect

(2) the severity of the defect

(3) the number of times any one defect occurs as well as the total number of defects

(4) the positioning of the maneuver

b. For example, a small single change in heading during the slow roll would be considered one defect, while two or three distinct turns would be considered two or three defects. Note that, for many maneuvers, there are more than six possible kinds of defects and that some of these can be repetitive. It is not possible to downgrade one point for each defect or, indeed, we would have many negative scores. Start positive scoring on the good parts of the maneuver if the score begins to get too low.

4. MANDATORY ZERO: The following is a collation of all mandatory zero (0) scores applicable to all Pattern Classes:

a. Flying behind specified flight line during or between maneuvers

b. Maneuver performed out of sequence

c. Execution of an illegal pass

d. Touching the plane before completion of the flight

e. Maneuver not completed

f. Model ends up on its back when landing

g. Failure to take off

h. Landing outside of runway or landing zone boundaries

i. In spins, a snap roll, model not stalled or 2 or 4 turns are done

j. A stall turn “flops”. On a double stall turn, a flop on both stall turns

Back to Contents

k. Where 3 rolls or loops are required and 2 or 4 are done

Whenever a score of zero (0) is warranted, there should be acknowledgement and agreement between the judges.

5. SUGGESTED DOWNGRADES: Certain types of defects pose difficult judging decisions. The following guidelines are suggested:

a. Stall Turns: A flop would receive a zero for a single stall turn. In the case of maneuvers with two, a flop of either would be downgraded 5 points; if both were flopped, a zero. These downgrades should be applied in addition to downgrades for any other defects observed.

b. Number of Loops, Spins or Axial Rolls: Where 3 loops, rolls or spins are required and 2 or 4 are done, the maneuver will earn a zero (0). Rotation errors of these components also should be penalized; for example a 90 degree error would draw a 6-point deduction. This is based on the long-standing rule in pattern judging of giving a 1-point deduction for every 15 degrees of over- or under-rotation.

c. Major and Minor Defects: A “minor” error, such as a slight over rotation or heading correction, should be penalized a point for each occurrence. A “major” error, such as no entry or exit line to a maneuver, a stall turn radius exceeding 2 wingspans, or a total lack of a line segment after a roll where one is required, should earn a two point deduction for that fault alone. Point rolls must hesitate with equal time on each point. One (1) point is subtracted for slight variations, while more severe mistiming is further downgraded. If one or more points are not visible, or there are more than the required number of points, the maneuver is severely downgraded (five (5) or more points.)

d. Maneuvers Off-Center: Deduct two (2) points for each quarter of the total maneuver’s length that is offset. Examples (assuming no offset with the judges’ permission due to the sun): Loops offset so that the edge of the loop just reaches the judges, deduct four (4) points. For offsets of 1/4 loop, deduct 2 points.

6. DESCRIPTION OF MANEUVERS: All maneuvers consist of a number of basic elements such as lines, loops, rolls, stall turns and spins. A short discussion of these elements precedes the individual maneuver descriptions (Section III) to aid the judges in determining appropriate downgrades for deviations from defined maneuver geometry.

a. Lines: All aerobatic maneuvers are started and ended by a horizontal line.

(1) All lines within a maneuver have a beginning and an end which define their length. The length of a line should only be graded when a maneuver contains several lines with

Back to Contents

a given relationship, as in a Top Hat. Unequal or misrelated lines should be downgraded according to the severity of the defect.

(2) Whenever a type of roll is placed on a line, the length of the line before and after the roll must be equal.

b. Loops: A loop should have a constant radius to be judged perfect. A loop must start and end with a well-defined line, both of which should be horizontal for a full loop. For a partial loop such lines may be in another plane of flight, as required by the maneuver.

(1) Partial loops flown as part of the same maneuver must have identical radii. A slight difference should downgrade the maneuver by one (1) point, while a more severe difference may downgrade it by two (2) or three (3) points.

(2) Excessively tight radii should be downgraded as this violates the requirement for smoothness and gracefulness.

c. Rolls: Rolls may be flown as individual maneuvers or as elements of other maneuvers. The following criteria apply to all rolls:

(1) Roll rate must be constant.

(2) Roll must have a well-defined start and stop

(3) All rolls flown on lines between maneuver components (e.g., partial loops or stalls) must be centered on the line

(4) Point rolls must hesitate with equal time on each point.

d. Stall Turns: Stall turns consist of lines and partial loops as well as stall turns.

(1) Lines must have exactly vertical and horizontal flight paths

(2) Entry and exit must consist of partial loops with equal radii

(3) Length of the vertical line is not a criterion

(4) All rolls must be placed in the center of the lines

(5) The stall turn standard pivot radius is one half (1/2) wingspan. A pivot of more than two (2) wingspans should be considered a defect

Back to Contents

e. Spins: All spins are begun and ended by a horizontal line. In order to accomplish a spin, the model must be stalled. The entry should be flown in a horizontal path with the nose high attitude increasing as the speed decreases – the aircraft may even climb slightly as it approaches the stall (i.e., a pull-up). The nose then drops as the model stalls. Simultaneously, one wing drops in the direction of the spin. The following criteria apply to spins.

(1) Snap roll or un-stalled entry scores zero

(2) The stop of rotation is judged. An error of under- or over-rotation should be penalized according to the 1 point per 15-degrees rule.

(3) A vertical downward line of visible length must be flown after the rotation stops. The pull-out is judged as a partial loop

(4) The attitude of the model during the spin is not a judging criterion as long as the model is stalled

f. Loop/Roll Combinations: Such combinations are flown in the Immelmann Turn, Double Immelmann and the Cuban Eights. The following criteria apply:

(1) During Immelmann maneuvers, the rolls should be accomplished immediately after the loop. A visible line in between should be downgraded

(2) In the Cuban 8s, the 1/2 roll should be placed on the middle of the line. The half rolls should be placed at the same location of crossover point.

Back to Contents