

## 1965 Radio Control Pattern Event Regulations

1. **OBJECTIVE:** To control by radio a model airplane so that various planned maneuvers may be accomplished. The criterion is the quality of performance, not the not the mechanism of control. R/C competition is based on the excellence of performance of the model's maneuvers compared to similar maneuvers performed by a full-sized plane. Maneuvers will be judged according to the AMA Radio Control Judges Guide.
2. **GENERAL REQUIREMENTS:** Models may be of the reciprocation internal combustion engine-powered type with no limit on engine size or length of run, or of the towline glider type with no limit on length of towline. No modal may weigh more than 15 pounds gross weight ready for take-off.
3. **SAFETY REQUIREMENTS:**

Consideration of safety for spectators, contest personnel, and other contestants are of the utmost importance in this event, and the following safety provisions must be observed.

  1. All models must pass a general Safety Inspection by the Event Director or his representatives before they are allowed to compete.
  2. Any flying over the Flight Line, pits, or a controlled spectator area will be cause for immediate disqualification of that flight.
  3. Dangerous flying of any sort, or poor sportsmanship of any kind, shall be grounds for disqualification of the contestant involved.
  4. All planes entered must have rounded prop spinners, or some sort of safety cover on end of propeller shaft (such as a rounded "acorn nut").
  5. Knife edge wings are not allowed.
  6. All radio equipment and operation must conform to the regulations of the F.C.C. AMA membership cards and any F.A.A. required documentation/identification shall be checked at every sanctioned meet.
4. **GENERAL:** The Radio Control Pattern Event shall be divided into three classes based on three primary aerodynamic axes of control: Yaw, Pitch and Roll. Note: Primary controls – Rudder, Elevators, Ailerons. Auxiliary controls – any non-Primary controls.
  - a. No radio equipment limitations or requirements in any class.
  - b. Engine control is permissible in all classes by any means.
    - a. *Class I*—Planes controlled about the Yaw axis, by Rudder Control only. No auxiliary aerodynamic Controls are permitted (flaps, spoilers, etc.): No auxiliary non-flight controls are permitted. (brakes, steerable wheels, etc.) Trim of the Rudder Control is permissible only if attainable with the basis actuator used for Rudder Control—no additional servos, actuators, or devices are permitted. Rudder control permissible by any means—selective positioning, proportional, etc.
    - b. *Class II*—Planes controlled about the Yaw and Pitch axes, by Rudder and Elevator control only. Rudder and elevator control permissible by any means , simultaneously, independently, or otherwise. Auxiliary non-flight controls (brakes, steerable wheels, etc.) are permitted without limitation or restriction. Auxiliary flight aerodynamic controls (flaps, spoilers, etc.) are not permitted.
    - c. *Class III*—Planes controlled about the Yaw, Pitch and Roll axes; by Rudder, Elevator and Aileron controls, with no limitations or restrictions on primary aerodynamic controls, auxiliary aerodynamic controls or auxiliary non-flight controls.

A Class I plane may be entered in either of the other classes at the option of the flier, and a Class II plane may be entered in Class III. Scores for all three classes shall be listed separately. Contestant shall be permitted to enter only one of the three categories listed in Para. 2 above. A plane is considered "entered" when it has completed an official flight.

3. **NUMBER OF FLIGHTS:** There shall be no limit on the number of flights (other than that imposed by Time available). Contest officials shall make every reasonable effort to insure that all contestants Receive equal opportunity to fly.
4. **OFFICIAL FLIGHT:** A flight is considered official if two maneuvers other than take-off and landing Have been judged. An attempted maneuver yielding zero points is still considered "judged".
5. **TIME LIMIT:**
  - A Class I contestant is allotted a total of nine minutes.
  - A Class II contestant is allotted a total of eleven minutes.
  - A Class III contestant is allotted a total of eleven minutes.
  - In all classes the contestant must commence his flight within the first three minutes. When he fails to commence within the three-minute time limit and is so informed by the judge, he must immediately clear the area for the next contestant. No engine restarts are permitted after the first three-minute time limit -- engine restarts are permitted within the first three minutes of allotted time and only prior to the second maneuver.
6. **SCORING:** The highest score for the total of two best flights shall be the winner. Maneuver points from repeat flights may not be added to earlier flights. Each flight is considered complete in itself. In the case of a tie, the third best flight score of the contestants concerned shall be used to determine the winner. If only two flights have been scored during the normal contest time, the highest single flight score of the contestants concerned shall determine the winner.
7. **POINT SYSTEM:** A point system shall be used to score maneuvers. Each maneuver shall be judged on a scale of zero to five.
8. **FLIGHT PATTERN:** The contestant must fly his entire flight according to the established Flight Pattern and in the order listed. The contestant may waive any maneuver except those numbered 2 through 6. Maneuvers performed out of order will not be judged. The contestant must call out each maneuver before he attempts to perform it. **ALL THREE CLASSES WILL USE THE SAME FLIGHT PLAN.** (Except for maneuver 9a -9b).
9. **MANEUVERS:**
  1. **PROTO TAXI.** Taxi downwind at least 50', stop, turn at least 120 degrees into the wind.
  - 2a. **UNASSISTED ROG.** No help of any kind release of plane.
  - 2b. **HAND LAUNCH.** Mandatory zero points.
  3. **STRAIGHT FLIGHT.** Approximately upwind and in line with the transmitter to marker 500' away. Judge will announce arrival over the marker. (Judges may reduce distance in windy weather).  
**NOTE:** On maneuvers 3-6, maintain constant altitude for top points.
  4. **PROCEDURE TURN.** 90 degree turn (away from pits and spectators) starting just beyond marker, followed immediately by a 270 degree turn opposite to the 90 degree turn.
  5. **STRAIGHT RETURN FLIGHT.** From the marker back to in line with the transmitter.

6. **FIGURE EIGHT.** Axis perpendicular to wind. Smooth equal circles crossing over in line with the transmitter.
7. **TOUCH AND GO.** While traveling in a straight line, plane must land and take off again. In the judges opinion the plane must be completely unairborne but must not stop on the runway.
8. **WING OVER.** 180 degree change in direction, with level recovery at the same altitude as entry.
- 9a. **THREE CONTINUOUS HORIZONTAL AXIAL ROLLS.** Straight and level recovery on the same heading as Entry.
- 9b. **CLASS I AND CLASS II** planes may substitute three continuous barrel rolls for the above.
10. **IMMELMANN TURN.** Half loop followed by half roll at top. Level recovery at higher altitude than entry.
11. **THREE CONTINUOUS INSIDE LOOPS.** Smooth, round, equal sized, all at the same altitude. Straight and level recovery.
12. **FOUR POINT ROLL.** One complete axial roll with a pause in the roll and a short by obvious straight flight at each 90-degree point of the roll.
13. **THREE CONTINUOUS OUTSIDE LOOPS.** Smooth, round, equal sized, all at the same altitude. Straight and level recovery.
14. **CUBAN EIGHT.** Horizontal eight performed by means of two delayed Immelmann turns. (See diagram.)
15. **THREE TURN TRUE SPIN.** (Not spiral dive). Model must enter spin from a stalled attitude. Three complete turns, recovery on the same heading as entry.
16. **INVERTED FIGURE EIGHT.** Smooth equal circles, cross over opposite the transmitter. No restrictions as to how inverted flight starts, however entry and recovery must be inverted.
17. **ROLLING EIGHT.** One inside loop followed by a half roll immediately followed by another inside loop followed by a half roll. Entry and recovery on the same level. Maneuver creates a vertical eight with one loop above and the other below the entry, recovery axis.
18. **TAIL SLIDE.** Under moderate power the model is allowed to stall in a vertical attitude. After a controlled slide downward on the tail, the model recovers normal flight at the same level from which the initial stall was entered.
19. **VERTICAL EIGHT.** Level entry, one half inside loop, one complete outside loop, one half inside loop and level recovery at the same altitude as entry. The complete maneuver is an eight in the vertical plane with all parts of the figure above the entry – recovery altitude.
20. **TRAFFIC PATTERN APPROACH TO LANDING.** Fly the runway heading upwind from the transmitter, turn 90 degrees away from the pits to cross wind, fly straight 50', turn 90 degrees down wind, fly as far as the contestant feels is necessary to make a safe approach. All turns must be made at a safe altitude. Judges are required to give zero points for this maneuver if in their opinion turns are made at unsafe altitudes. Turn 90 degrees to base leg, finally turn upwind on to the final leg and begin to descend. Maneuver is complete when plane is within 6' of ground.
21. **LANDING PERFECTION.** Smooth approach, smooth landing with no bounce---Full points --- graduated to minimum points for extremely rough approach, rough landing with bounce but without nose-over due to poor control. (Might be due to poor surface conditions.) Mandatory zero points for nose-over, intentional dive in, or landing not within clear view of the Judges.
22. **SPOT LANDING.** The spot shall consist of a circle 100' in diameter. For landing within this circle with the main gear of the plane, the Judges will award points equal to those earned in the LANDING PERFECTION.
23. **PROTO TAXI TO HANGER.** After touching down, model is taxied over and brought to a stop with the main landing gear within a 3' circle designated as the "hanger". Said "hanger" to be outlined close to the start line for the take-off proto taxi.

10. **FIELD PROCEDURE:** The procedures listed below are suggested and may be altered by the Event

**Director to fit local conditions.**

- a. All R/C contestants shall be set up in "pits", at spot assigned by Event Director, so they will be under his immediate control.
  - b. There will be no testing of transmitters or receivers during the flying period. Transmitters may be impounded at the discretion of the Event Director. Any person causing interference will suffer immediate disqualification.
  - c. The flight order shall be determined by position of contestants' signatures on a single Flight List held by Event Director or his representative. This List shall include all classes and frequencies. Contestants shall have his name on the List only once at any one time. Names may be moved to the bottom of the List on request, but trading of positions with other contestants is not allowed. When a contest is to be continued on a following day, the Flight List shall carry over from day to day.
  - d. Event Director shall carry out following procedure:
    1. Numbers 1,2 and 3 on Flight List shall be on the flight line with their models, equipment, and one helper, if desired. No. 1 is contestant flying or ready to fly. No. 2 is the next man to fly, etc.
    2. The No. 1 man shall have 3 minutes from completion of proceeding flight in which to release the model for the start of his flight. False starts are permitted within the 3-minute limit. Failing to start flight within this limit, contestant must immediately remove his plane and equipment to the pits. It shall be the responsibility of Event Director or his representative to notify contestant of start and end of the 3-minute period.
    3. Numbers 4,5 and 6 on the Flight List shall have their planes and equipment in a ready box located near the flight line. As soon as a flight is completed, the No. 4 man becomes No. 3 and shall be required to move his model and equipment onto the flight line. If he is not on hand to do so, he shall be dropped from the Flight List and the List advanced to fill his place. The Event Director or his representative shall be responsible for notifying contestants when they are to move to the ready box or flight line.
- 11. OFFICIALS.** An Event Director, a Dispatcher-Recorder and Judges are the essential officials for an R/C Event. If possible, the Dispatcher-Recorder should have at least two helpers.
- a. Each flight should be judged by at least two judges with their scores averaged to give final score for the flight. It is suggested that each maneuver be scored immediately after it is performed. Judges shall score maneuvers individually and without consulting between them. There should be enough judges available to establish a rotational procedure which will average out variations in judging.

# RADIO CONTROL MANEUVERS

