Price: 25 cents

OFFICIAL
Model Aircraft
REGULATIONS

Governing Sporting Model Aviation in America

1959-1960

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by the Contest Board
Academy of Model Aeronautics

22. RADIO CONTROL PATTERN EVENT REGULATIONS

22.1 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 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 shall be judged according to a recognized full-sized plane manual, such as C.A.A. Bulletin No. 5, "Flight Instructor's Manual."

22.2 GENERAL REQUIREMENTS: Models may be of the reciprocating 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 model may weigh more than 15 pounds gross weight ready for take-off.

22.3 All radio equipment and operation must conform to the regulations of the F.C.C. AMA membership card and F.C.C. license of each entrant shall be checked at every sanctioned meet.

22.4 The Radio Control Pattern Event shall be divided into the following three categories:

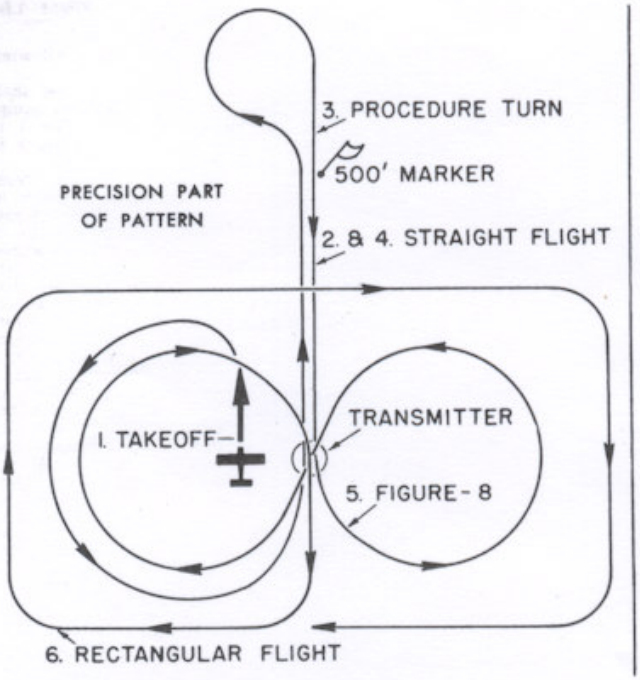
Rudder Class—Models which are controlled by the rudder only; the rudder is defined as the movable surface affixed directly behind the conventional fin. Engine control and/or cut-off by radio is allowed in this class, but actuated brakes and steerable wheels are prohibited. Rudder Class equipment is limited to the single channel type.

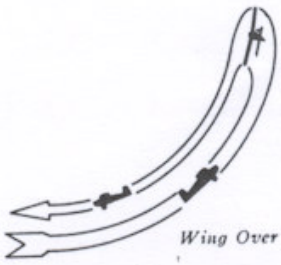
Intermediate Class—Models which do not fall in the Rudder or the Multi classes.

Multi-Class—Models employing systems that allow full and independent operation of any one control surface without operation of any other control surface.

Engine speed control and/or cut-off optional in Intermediate and Multi classes; there is no limit to the number of controls allowed in these two classes.

22.5 A Rudder Class plane may be entered in either of the other classes, at the option of the flier, and an Intermediate plane may be entered



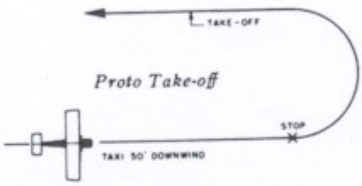


Wing Over

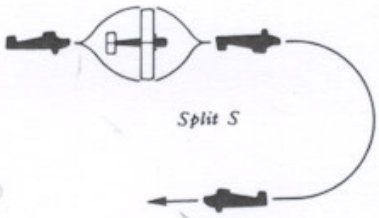
Spiral Dive

2-Point Roll

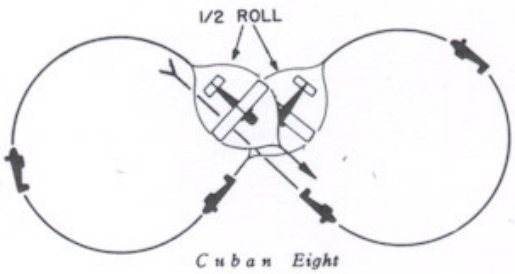
Horizontal Roll



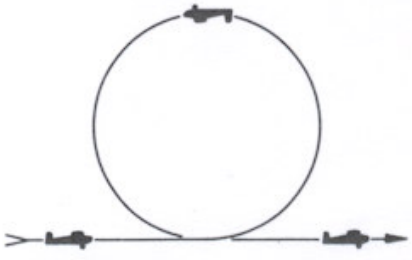
Proto Take-off



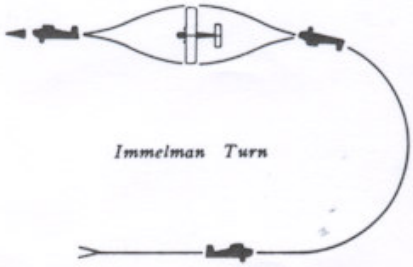
Split S



Cuban Eight



Loop



Immelman Turn

True Spin

in Multi. Scores for all three classes shall be listed separately. Contestant shall be permitted to enter only one plane in the RC Pattern Event, and that in only one of the three categories listed in Para. 4. A plane is considered "entered" when it has completed an Official Flight.

22.6 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.

22.7 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."

22.8 TIME LIMIT. The time of flight, from release of model to landing, shall not exceed 10 minutes. Maneuvers may be performed in the glide, but all scoring will cease at expiration of time limit. Repeated maneuvers shall not be scored. At smaller meets, or where time is short, it is suggested that time limit be reduced to, say, 5 minutes; contestants should be required to perform maneuvers 12-1 through 12-6, followed by any others they choose.

22.9 The contestant *must* call out the maneuver before he attempts to perform it. This is the *contestant's* responsibility and the maneuver will not be judged unless he does so.

22.10 The highest score for the best single flight shall be the winner. Maneuver points from repeat flights may not be added to earlier flights. Each flight is complete in itself. In case of ties, the second best flight scores of the contestants concerned shall be used to determine winner.

22.11 POINT SYSTEM: A point system shall be used to score maneuvers. Each maneuver shall be judged on the scale of:

Excellent	full points
Average	2/3 points
Poor	1/3 points
Unrecognizable	zero points

22.12 FLIGHT PATTERN. The first *six* maneuvers must be flown in the sequence indicated, and exactly according to the diagram herewith. These six maneuvers *must* be accomplished and cannot be waived. The remaining maneuvers may be flown in any order desired.

MANEUVER:

	Points Ex	Av	Pr	UNR
1. *Take-off* (Helper may hand-launch plane, or hold and release it for ROG.)				
a. Proto take-off. Taxi 50' *downwind*, stop, turn at least 90 degrees into wind, take off	24	16	8	0
b. Simplified Proto take-off. Taxi 50', come to dead stop, take off	18	12	6	0
c. Unassisted ROG. No help of any sort, after release of plane	9	6	3	0
d. Hand Launch	0	0	0	0
2. *Straight Flight*, approximately upwind from directly over transmitter to marker 500' away. Judge will announce arrival over marker. (Judges may reduce distance in windy weather)	6	4	2	0
Note: On maneuvers 2-6, maintain constant altitude for top points.				
3. *Procedure Turn.* 90 degrees left, starting just beyond marker, followed by immediate 270 degree right turn	6	4	2	0
4. *Straight Return Flight* from marker to directly over transmitter	6	4	2	0
5. *Figure Eight.* Axis perpendicular to wind. Smooth equal circles, cross over above transmitter	9	6	3	0
6. *Rectangle* 200' legs, parallel and perpendicular to wind	12	8	4	0
7. *Wing Over.* 180 degree change in direction, with level recovery at same altitude as entry	6	4	2	0
8. *Immelman Turn.* Half loop followed by half roll at top. Level recovery at higher altitude	9	6	3	0
9. *Inside Loops.* Smooth, round, equal-sized, all at same altitude				
First	6	4	2	0
Second	6	4	2	0
Third	6	4	2	0
Note: In multiple maneuvers such as 9, 12, 15, and 18, Contestant must specify number he will attempt, and receives no points whatever unless the specified number is attempted. Final score for maneuver is total of individual scores.				
10. *Spiral Dive.* 3 complete turns with recovery on same heading as entry	9	6	3	0
11. *Power Dive.* At least 200' straight down, less than 30 degree turn, with straight level recovery	9	6	3	0
12. *Horizontal Rolls.* Straight level recovery on same heading as entry				
First	6	4	2	0
Second	6	4	2	0
Third	6	4	2	0
13. *Touch-and-Go.* From at least 50' altitude, land and take-off again. Plane must be completely unairborne, but must not come to a stop on ground	21	14	7	0
14a. *Inverted Flight.* Level flight and no loss of altitude best. At least 100' straight flight, 180 degree turn at least 100' straight flight in opposite direction	21	14	7	0
14b. *OPTIONAL. 2-Point Roll.* Half roll to inverted position, fly at least 100' inverted, half roll in same direction back to normal flight position. No change in direction or loss of altitude. Note: *Only one part* of 14 may be selected in any one flight.	21	14	7	0
15. *Outside Loops.* Smooth, round equal-sized, all at same altitude. Straight and level recovery				
First	9	6	3	0
Second	9	6	3	0
Third	9	6	3	0
16. *Cuban Eight.* Horizontal Eight performed by means of two delayed Immelmans. See diagram	15	10	5	0
17. *Split S.* Half roll to inverted flight with immediate half loop back to level flight. Model must lose altitude and make 180 degree change in heading	9	6	3	0
18. *True Spin* (not spiral dive). At least two complete turns,				

recovery on same heading as entry. Model must enter spin from stalled attitude.

First Two	12	8	4	0
Third	6	4	2	0

19. *Knife-edge Flight.* Model must fly straight with wing tips in a plane vertical to ground, for at least 200'. No loss of altitude best.....21 14 7 0

20a. *Landing.* Shall be judged upon perfection as follows:

Smooth approach, smooth landing with no bounce.....	12	—	—	—
Smooth landing, but some bounce	—	8	—	—
Rough landing but no nose-over due to poor control (might be poor surface conditions)	—	—	4	—
Nose Over, Intentional Dive-in, or landing not within clear view of judges.....	—	—	—	0

20b. *Spot Landing. Shall be judged concurrently with 20a.* Spot shall be two concentric circles 100' and 30' diameter. Landing within 100' circle—multiply Perfection points by 2; within 30' circle—multiply Perfection points by 3; Landing outside 100' circle—perfection points as specified under 20a. Point where wheels or tail skid first touch determines multiplier. Engine may be running during landing, but plane may make only one pass at spot.

21. *Proto Landing.* After touching down, model is taxied over and brought to a stop at point from which it started Proto Take-off. Must be accomplished within 10 minute flight limit..... 9 6 3 0

22.13 FIELD PROCEDURE. The procedures listed below are suggested, and may be altered by the Event Director to fit local conditions.

22.14 All R/C contestants shall be set up in "pits" at spot assigned by Event Director, so they will be under his immediate control.

22.15 There will be no testing of transmitters or receivers during the flying period. Transmitters may be impounded at discretion of Event Director. Any person causing interference will suffer immediate disqualification. The Event Director will provide a monitor receiver to check for interference.

22.16 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. Contestant shall have his name on List only once at any one time; names may be moved to bottom of 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.

22.17 Event Director shall carry out following procedure:

a. Numbers 1, 2, and 3 on Flight List shall be on flight line with their models, equipment, and one helper if desired. No. 1 is contestant flying or ready to fly, No. 2 is next man to fly, etc.

b. The No. 1 man shall have 3 minutes from completion of preceding flight in which to release 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 responsibility of Event Director or his representative to notify contestant of start and end of 3-minute period.

c. 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 requested 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 representatives shall be responsible for notifying contestants when they are to move to ready box or flight line.

22.18 When technically possible and when judges and space are available, it is strongly recommended that two or more flights be flown simultaneously, under the following conditions:

a. Separate take-off and landing areas sufficiently spaced cross wind from each other to minimize engine noise and flight path interference.

b. Contestants flying simultaneously shall carefully check receiver and transmitter operation before take-off, to be sure no interference between them is possible.

c. Contestants flying simultaneously must be no more than three positions apart on the Flight List. Event Director or representative shall, where possible, select contestants at top of Flight List so that contestants flying on compatible frequencies are on flight line together.

d. Should a contestant oppose flying simultaneously with someone else, he may cancel his turn and re-sign at the bottom of the Flight List.

22.19 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.

22.20 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 consultation between them. There should be enough judges available to establish a rotational procedure which will average out variations in judging.