



GENERAL

1. I will not fly my model aircraft in competition or in the presence of spectators until it has been proven to be airworthy by having been previously successfully flight tested.
2. I will not fly my model higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right of way to, and avoid flying in the proximity of full scale aircraft. Where necessary an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full scale aircraft.
3. Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless, and/or dangerous manner.

RADIO CONTROL

1. I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.
2. I will not fly my model aircraft in the presence of spectators until I become a qualified flyer, unless assisted by an experienced helper.
3. I will perform my initial turn after takeoff away from the pit, spectator, and parking areas, and I will not thereafter perform maneuvers, flights of any sort, or landing approaches over a pit, spectator, or parking area.

FREE FLIGHT

1. I will not launch my model aircraft unless at least 100 feet downwind of spectators and automobile parking.
2. I will not fly my model unless the launch area is clear of all persons except my mechanic and officials.
3. I will employ the use of an adequate device in flight to extinguish any fuses on the model after it has completed its function.

CONTROL LINE

1. I will subject my complete control system (including safety thong, where applicable) to an inspection and pull test prior to flying.
2. I will assure that my flying area is safely clear of all utility wires or poles.
3. I will assure that my flying area is safely clear of all non-essential participants and spectators before permitting my engine to be started.

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U.S. POSTAGE
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 Non-Profit Org.
 Melrose Park, IL
 Permit No. 132

**OFFICIAL
 AIRCRAFT
 REGULATIONS**

1978

Issued by the
 Contest Boards
 of the
 Academy of
 Model
 Aeronautics
 under the
 franchise of
 National
 Aeronautic
 Association
 and
 Federation
 Aeronautique
 Internationale

**Governing Sporting
 Model Aviation
 in America**

37. RC PATTERN

1. **Applicability.** All pertinent AMA regulations (see sections 1-12) Sanctioned Competition, Records, Selection of National Champions, and General) shall be applicable, except as specified below.

2. **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. RC competition shall be based on the excellence of performance of the model's maneuvers compared to similar maneuvers performed by a full size plane. Maneuvers shall be judged according to the AMA Radio Control Judges Guide.

3. **Licensing Requirements.** 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.

4. Model Aircraft Requirements.

4.1. **Power.** Models shall be powered by reciprocating or rotary piston internal combustion engine(s) or electric motor(s). Total displacement of a reciprocating or rotary piston internal combustion engine in a single-engine model shall not exceed .6102 cubic inch (10cc). In a model powered by two or more reciprocating or rotary piston internal combustion engines, the total displacement shall not exceed .8060 cubic inch (13.20cc), and none of these individual engines shall exceed .6102 cubic inches (10cc). Sixty percent of the actual piston displacement (volume swept by the piston) of four-stroke cycle engines shall be taken for determining maximum displacement allowed.

4.1.1. Each reciprocating or rotary piston internal combustion engine shall be equipped with a muffler.

4.2. **Weight.** No model may weigh more than 15 lbs. gross, ready for takeoff.

4.3. **Controls.** There shall be no radio equipment or aircraft control function limitations in any pattern class. *Radio equipment is only limited by F.C.C. regulations.*

4.4. **Number of Airplanes.** Two airplanes may be entered by a contestant and are to be numbered "1" and "2". The contestant may choose to enter either plane at the beginning of the meet and shall continue to use such plane unless, and until, said plane shall be damaged to the extent that it cannot be readily repaired. Contestant may then, upon approval of the Contest Director, substitute the second plane for the balance of the meet without penalty. Once this has been done, the contestant may not re-submit the first plane later in the same contest.

4.4.1. Substitution of basic components of the two entered aircraft, i.e., wings, fuselage, or tail surfaces, will be considered the same as switching airplanes, and therefore will only be allowed one time. In this connection, each basic, detachable component of each aircraft must be marked as "1" and "2". Substitution rule does not apply to radio and engine.

4.5. **The Builder of the Model Rule** shall not apply to the pattern events.

4.6. **Identification.** All models shall be identified by the contestant's AMA license number permanently affixed to the upper side of the right-hand lifting surface or to each side of the fuselage or ventral stabilizer. Height of the numerals must be at least one inch. Both stroke and width shall be such as to enable ready recognition. It is suggested that the letter "N" be placed front of the license number when the number is affixed to the side of the fuselage or ventral stabilizer.

5. **Safety Requirements.** Considerations of safety for spectators, contest persons, and other contestants are of the utmost importance in the event, and the following safety provisions must be observed.

5.1. All models must pass a general safety inspection by the Event Director or his representatives before they are allowed to compete.

5.2. The "Flight Line" shall be defined as a straight line, infinitely long in both directions in front of which all flying is done, and in back of which all officials, contestants, and spectators are positioned. The judges shall be positioned on the "Flight Line," and in fact the line shall be established by the judges' position. If at any time during a flight, including the takeoff and landing, the plane goes behind the flight line, the maneuver being executed, or the previous maneuver (if the plane is between maneuvers) shall be scored zero. If two zeros are earned during the same flight for flight line infractions, the remainder of that flight shall be scored zero, and the pilot shall be ordered to land the plane. Continued flying behind the flight line shall result in disqualification of the contestant by the Contest Director.

5.3. **Dangerous flying** of any sort, or poor sportsmanship of

any kind, shall be grounds for disqualification of the contestant involved.

5.4. Pilots shall remain near the judges while flying, and in particular shall stay off the runway and/or landing area during maneuvers which call for flying (or taking off or landing) in line with the center of the runway and/or landing circle.

5.5. 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"). Radius of point shall not be less than 1/4 inch.

5.6. Knife-edge wings are not allowed.

6. **Pattern Event Classes.** The pattern event shall be divided into four classes. They shall (in order of increasing difficulty) be referred to as Novice, Advanced, Expert, and Master.

6.1. The Expert class shall fly the 1977 FAI Pattern schedule of maneuvers.

6.2. The Masters class may fly one of two schedule choices: 1) the complete 1978 FAI "ABC" Pattern, or 2) the "Finals" schedule only of the 1978 FAI "ABC" Pattern. The 1978 FAI "ABC" Pattern is the 3-schedule system made official by the FAI in 1978. All contestants fly 2 rounds of Schedule A and 2 rounds of Schedule B. The finalists then fly 2 final rounds of Schedule C, a schedule made up by each finalist which consists of maneuvers selected from Schedules A, B and C.

6.3. For contests where the Masters Class is to be flown, but there is not time and/or person-power to conduct the six required rounds of the 1978 FAI "ABC" Pattern, the "Finals" schedule of the "ABC" Pattern shall be used for all rounds.

6.4. All pre-contest announcements for pattern events that will include the Masters class must clearly specify which Masters Pattern schedule will be used.

6.5. Competitors must also be advised prior to the start of the contest of any planned deviations from standard AMA or FAI rules pertaining to the events they have entered.

7. **Contestant Classification.** At his first pattern contest, a contestant may enter any one pattern class at his own option. *(This decision should be made with care, as no one in any class is once noted in 7-1.2, will be permitted to change to a lower class.)* Once committed to a certain class, a contestant will be allowed to move only to a higher skill class, and no move will come about in one of two ways: (1) voluntary, (2) mandatory.

7.1. A contestant may promote himself voluntarily to a higher class at any time, however, once the move is made, he may not change back to a lower class.

7.1.1. Exception: A contestant may fly in the next higher class at a contest where his class is not being flown without committing himself to promote to the higher class.

7.1.2. Exception: For flier to be reclassified to a lower rank, that person must make an application using a form supplied by AMA (HQ), to be signed by a Contest Director and forwarded to the district, Contest Board member and Vice President for their approval.

7.2. A contestant will be mandatorily advanced through the classes as follows: Upon placing first, second, or third in a sanctioned contest, he will receive 3 points for first place, 2 points for second place, or 1 point for third place. These points will be multiplied by the number of contestants who actually flew officially in the event and class. The resulting Classification Score goes into the contestant's accumulative record. When the accumulated Classification Score meets or exceeds 100 points, the contestant will automatically be advanced to the next competition class at the end of that calendar year.

7.2.1. A contestant may voluntarily move to the next higher class at the time he accumulates 100 points, but will not be required to do so until the end of the calendar year.

7.2.2. Time required to accumulate 100 Classification Points has no limit. A contestant's point accumulation does not start over again at the beginning of each year, but continues ad infinitum until, if ever, 100 points are accumulated.

Note: A contestant who flies in a higher class under the Exception Rule (7.1.1) above, and who places first, second or third, still acquires Classification Points in accordance with 7.2. above.

Examples

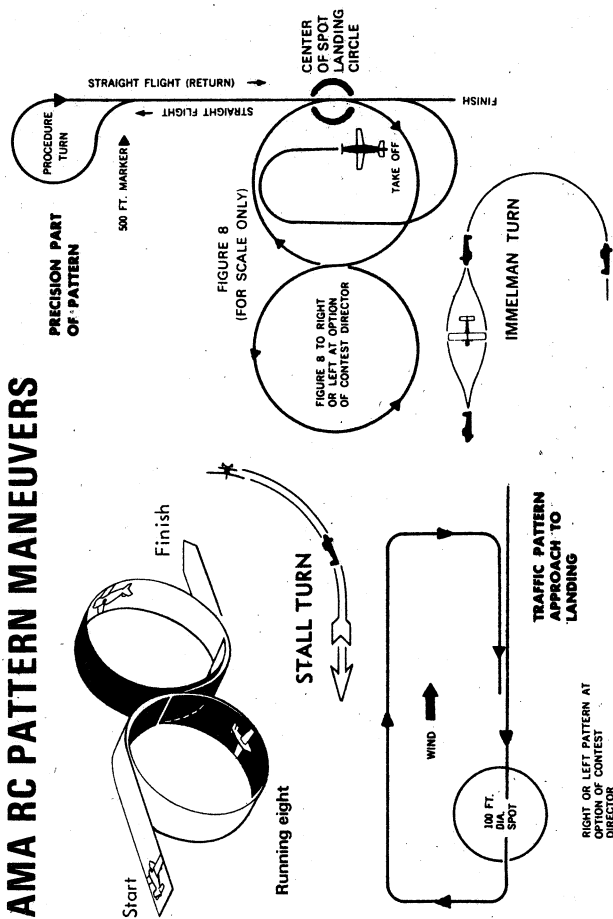
(1) Contestant is one of 8 who flies officially in a given class, and places first. He acquires 3 points times 8 contestants, equaling 24 Classification Points.

(2) Contestant is one of 3, and he places second. He acquires 2 points times 3 contestants, equaling 6 Classification Points.

(3) Contestant accumulates 99 points in 1974, and thus remains in his declared class into 1975. At the first 1975 contest he picks up 12 points. He may fly the rest of 1975 in his declared class, but will be advanced to the next higher class starting January 1, 1976. (He may move up sooner if he so desires.)

7.3. The Contest Director of each AMA sanctioned RC meet having Novice, Advanced, Expert or Master Class events is responsible for upkeep of the classification system. He must require

AMA RC PATTERN MANEUVERS



that they current AMA members be allowed to fly in the meet and that only all have valid F.C.C. licenses. As soon as the first second, and third place winners in each class are determined, the Contest Director shall fill out the appropriate spaces of their Classification Forms, indicating the date and location of the meet, and class, place won, number of contestants who made official flights in that class, and the resulting Classification Score. He will also affix his verifying signature and AMA CD number.

Note: Handy wallet-size Classification Advancement Record forms are available upon request from AMA HQ; please include a pre-addressed and stamped return envelope. Contest Directors of meets having RC Pattern events are also provided with a small supply of such forms.

8. **Number of Flights.** There shall be no limit on the number of land takeoff and landing, have been judged. An attempted maneuver yielding zero points is still considered "judged." A contestant is entitled to two attempts to make an official flight.

9.1. Definition of an Attempt. An attempt shall have been made once the clock starts for the flight.

9. Official Flight. A flight is considered official if two maneuvers, other than takeoff and landing, have been judged. An attempted maneuver yielding zero points is still considered "judged." A contestant is entitled to two attempts to make an official flight.

10. **Time Limits.**

10.1. Novice and Advanced contestants are allotted a total of nine (9) minutes.

10.2. Expert and Master contestants are allotted a total of ten (10) minutes.

10.3. In all AMA classes the contestant must have his engine started and commence his flight within the first two minutes after his time has been started. When he fails to commence within the first two minutes, and is so informed by the timer, he must immediately clear the area for the next contestant.

10.3.1. No engine restarts are allowed after the wheels leave the ground on takeoff. Restarting is permitted within the first two minutes, but only if prior to takeoff.

11. Point System.

11.1. Novice and Advanced maneuvers shall be judged and scored on a zero to ten basis. Flight score is the sum of the individual maneuver scores.

11.2. Expert and Master maneuvers shall also be judged and scored on a zero to ten basis. However, each maneuver score shall be multiplied by a "K" factor. (See maneuver schedules and FAI maneuver descriptions). Flight score is the sum of the extended scores for each maneuver, after the K factor is applied.

12. Determining the Winner.

12.1. In all classes, the winner shall be the highest score if only

one flight is completed; the highest single score; if two flights are completed; the highest total of the best two flights; if three or more flights are completed; and the highest total of the best three flights, if four or more flights are completed. Maneuver points from repeat flights may not be added to earlier flights. Each flight is complete in itself in case of ties, the best non-scored flight of the contestant shall be used to determine the higher place. There is no minimum number of flights which must be scored.

13. **Flight Pattern.** The contestant must fly his entire flight according to the established Flight Pattern for his particular class and in the sequence listed. Maneuvers performed out of order will not be judged.

13.1. Contestant (or his helper) may not touch his plane after it has become airborne until completion of flight; i.e., he may not engine, trim, etc.

13.2. The contestant must call out each maneuver before he attempts to perform it. Call out shall be made just prior to execution. Also, the flyer should use the straight flight time at the end of each maneuver to announce, "maneuver complete." If a contestant fails to call a maneuver before its execution, the maneuver shall be scored zero.

14. Novice Pattern Maneuvers.

1. Takeoff (U)
2. Straight Flight Out (U)
3. Procedure Turn
4. Straight Flight Back (D)
5. Stall Turn (U)
6. Single Immelmann (U)
7. 3 Inside Loops (U)
8. Straight Inverted Flight (D)
9. One Outside Loop (U)
10. 3 Horizontal Rolls (D)
11. Rectangular Approach (U)
12. Landing and Spot (U)

Note: (U) means upwind; (D) means downwind.

15. Advanced Pattern Maneuvers.

1. Takeoff (U)
2. Double Stall Turn (U)
3. Cuban 8 (D)
4. Double Immelmann (U)
5. Four-Point Roll (D)
6. Outside Loops (U)
7. Slow Roll (D)
8. 3 Inside Loops (U)
9. Horizontal Rolls (D)
10. Spin (U)
11. Rectangular Approach (U)
12. Landing and Spot (U)

Note: (U) means upwind; (D) means downwind.