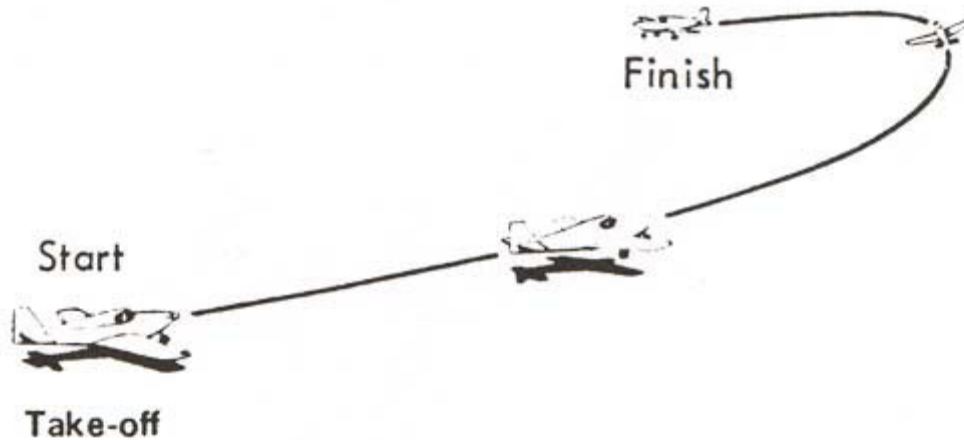


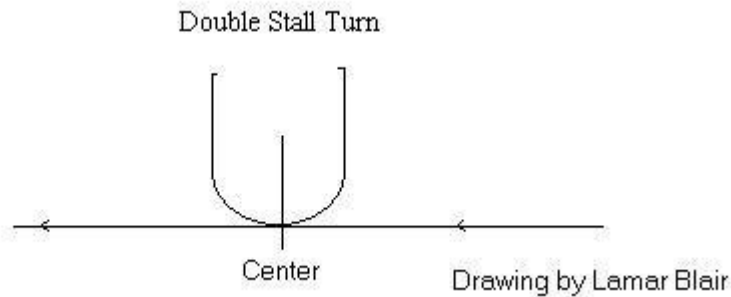
Maneuvers



1. TAKEOFF The model must start from a standstill. Model shall accelerate gradually and the takeoff run shall be in a straight line. Plane shall lift off gently and climb at a gradual angle, continuing in its straight flight path until at least six feet off the ground. Pilot shall call "Takeoff (or maneuver) complete" when model has gained at least six feet of altitude and is still climbing in a straight flight path.

Downgrades:

1. Pushing or assisting the model when released.
2. Change in heading during the takeoff run
3. "Jumping" from the ground
4. Retouching the ground after become airborne
5. Too steep a climb angle
6. Gallops in pitch, roll or yaw during climb
7. Change in heading during climb
8. Dropping a wingtip

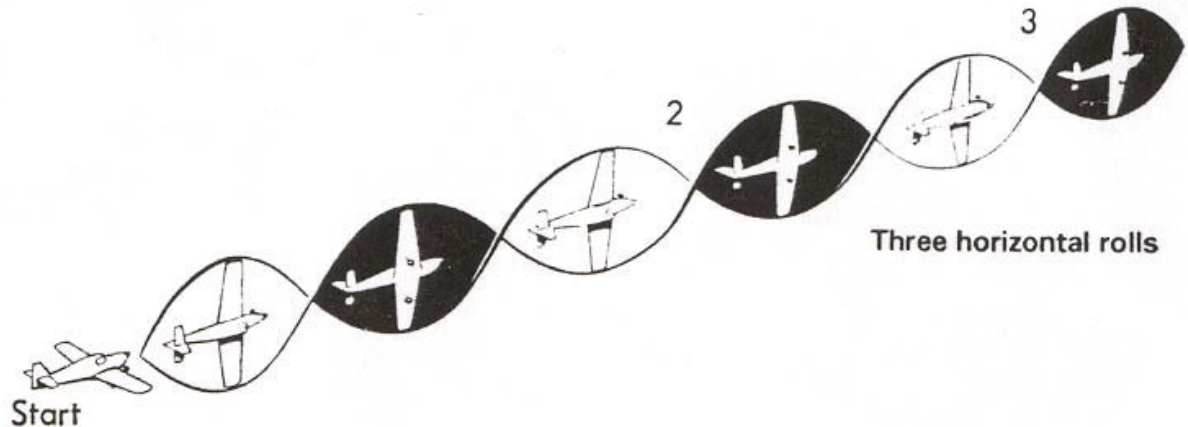


2. DOUBLE STALL TURN Model pulls up into one-quarter (1/4) loop to a vertical track then performs a stall turn through 180 degrees. Model then performs one-half (1/2) loop to a vertical track and performs another stall turn then recovers with another one-quarter (1/4) loop to level flight. The length of the vertical segments is not a judging criterion.

Downgrades:

1. Model not flying straight and level at beginning and end of maneuver
2. Track of model does not become exactly vertical at points of turn.
3. Loop segments not round with same size and radius

4. Bottom of half loop not at same altitude as entry and finish
5. Model turns left or right during pull ups
6. Does not yaw tightly through 180 degrees
7. Return track more than one-half ($1/2$) wingspan from entry path
8. Return paths not parallel to entry path
9. Maneuver not finished at same altitude as entry
10. Vertical segments not equal



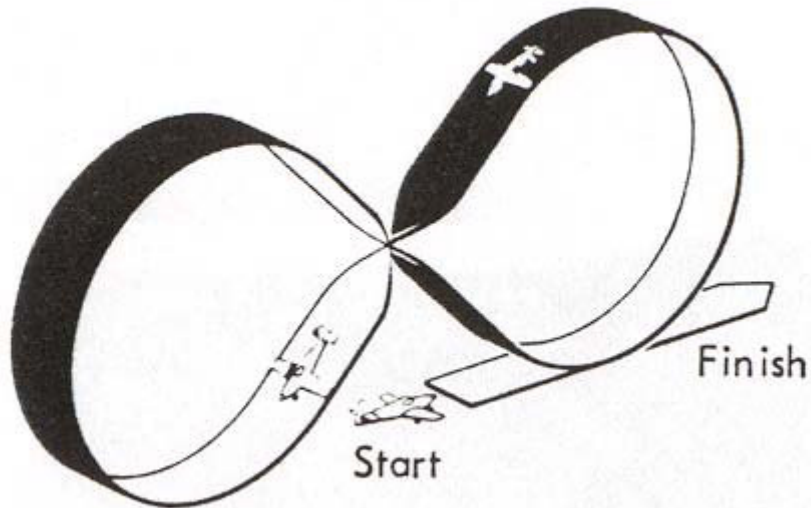
left until three complete rolls are performed. The recovery must be on the same heading and altitude as the entry.
Downgrades:

1. Model not level at the start of the rolls
2. The path traced out by the model is not a straight line. i.e. the plane does barrel rolls or suffers changes in heading
3. Roll rate not uniform throughout three rolls
4. Pause between rolls
5. Sudden changes in heading between rolls
6. The axis of the fuselage veers out at an angle to the flight path
7. Plane changes altitude during rolls
8. Plane does not do exactly three rolls
9. Plane is not level at end of rolls
10. Plane fails to do level flight at end of rolls

4. TOUCH AND GO After a smooth and gradual descent on a straight line path into the wind, the model lands and slows down to taxi speed (approximately $1/4$ the normal flight speed), but must not stop. Following this, the model must accelerate and take off on the same heading as entry.

Downgrades:

1. Approach during landing is too steep
2. Gallops in pitch, yaw or roll during approach
3. Model impacts or thuds onto ground due to lack of flare-out
4. Model bounces on landing
5. Model deviates left or right while rolling on ground
6. Model fails to slow down to distinct taxi or "unairborne" condition
7. Model stops on ground
8. Changes in heading during the takeoff run
9. "Jumping" from the ground
10. Retouching the ground after becoming airborne
11. Too steep a climb angle.
12. Gallops in pitch, yaw or roll during climb
13. Changes in heading during climb
14. Dropping a wing tip
15. Model is too far away to be seen clearly at any time during the maneuver

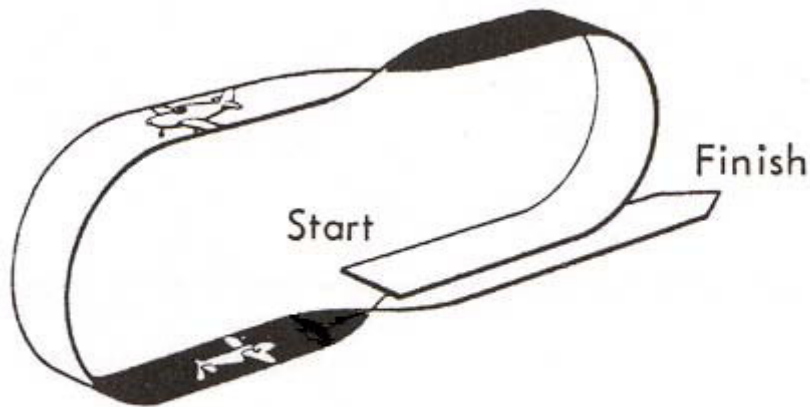


Cuban Eight

5. CUBAN EIGHT Model pulls up and executes an inside loop. When at 45 degrees inverted, model does a half roll followed by another inside loop. Again when at 45 degrees inverted, the model does another half roll and recovers to level flight.

Downgrades:

1. Loops not round and same size
2. Model not at 45 degrees before commencement of rolls
3. Changes in heading in loops or rolls
4. Rolls not centered in the 45 degree descents and on each other



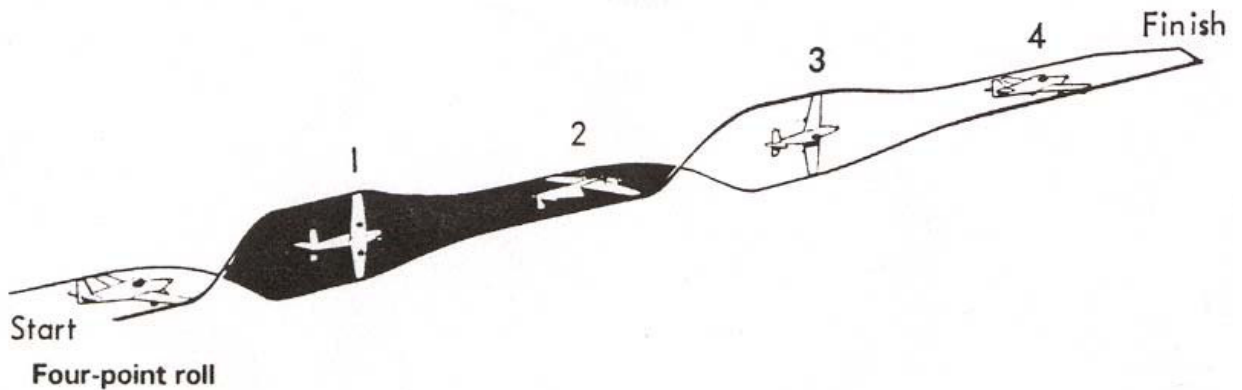
Double Immelman

6. DOUBLE IMMELMANN Model commences in straight and level flight, pulls into half an inside loop followed by a half roll to upright, does approximately 1 second of level flight followed by 1/2 outside loop, then followed by a half roll to upright, recovering in straight and level flight on the same heading and at the same altitude

as the entry.

Downgrades:

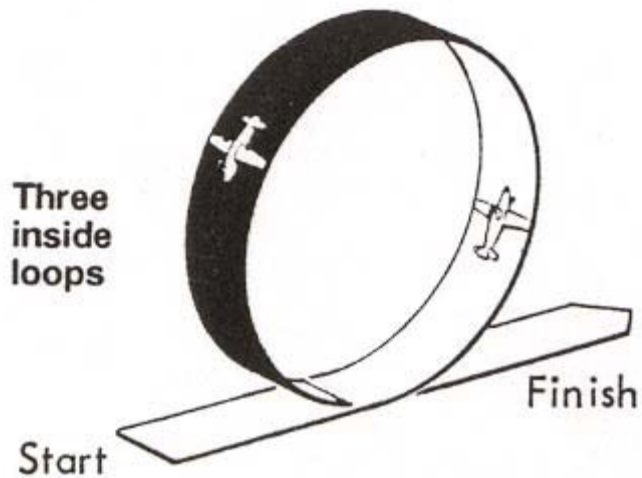
1. Entry not straight and level
2. First half loop not round
3. Model deviates left or right during half loop
4. Half loop not completed exactly above starting point
5. Half roll does not start immediately after half loop
6. Roll is not on a straight line and 180 degrees heading from entry
7. Plane goes immediately into outside loop upon completion of half roll
8. Plane holds straight flight too long before going to outside loop
9. Half outside loop not round or same size as first half loop
10. Model deviates left or right during half loop
11. Half outside loop not completed exactly below starting point
12. Final half roll does not start immediately after half outside loop
13. Final half roll longer or shorter than first half roll
14. Model does not finish on same heading and at same altitude as entry
15. Plane fails to do straight and level flight at end of maneuver



7. **FOUR POINT ROLL** From a straight and level flight path, the model is rolled 90 degrees and holds this attitude, with the wings in a vertical position, long enough for it to be clearly defined. The model is then rolled another 90 degrees, in the same direction of rotation and holds the inverted attitude long enough for it to be clearly defined. This is followed by another 90 degree roll in the same direction, bringing the ship to another knife edge position. Following a similar pause in the roll, the ship finally rolls another 90 degrees to upright and level flight.

Downgrades:

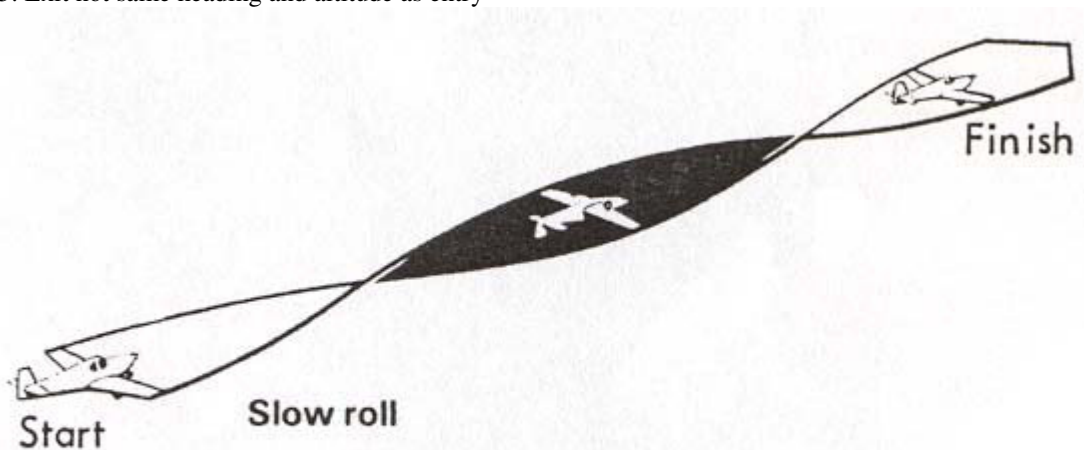
1. Model not level at start of roll
2. The path traced by the model is not a straight line. (The plane does barrel roll segments or suffers changes in heading.)
3. Sudden correction in heading between roll segments.
4. Plane changes altitude during roll
5. Plane does not pause long enough between each segment of roll
6. Wings are not exactly vertical at 1/4 and 3/4 positions
7. Plane fails to do level flight at end of roll.



8. **THREE INSIDE LOOPS** The model starts the maneuver flying straight and level, then pulls up into a smooth, round loop, followed by a second loop, and a third loop in exactly the same path with a straight and level recovery finish.

Downgrades:

1. Loops not round and smooth
2. Loops not superimposed
3. Wings not level during loops
4. Changes in heading during loops
5. Exit not same heading and altitude as entry

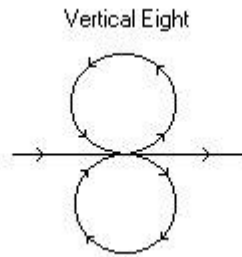


9. **SLOW ROLL** Model commences from straight and level flight and rolls slowly at a uniform rate through one complete rotation. The approximate time of the roll to be five seconds. Note: No downgrade for slight overtime.

Downgrades:

1. Model not level at entry
2. Plane deviates from a straight line during roll
3. Roll rate not uniform
4. Plane does not roll through exactly one revolution
5. Plane changes altitude during roll

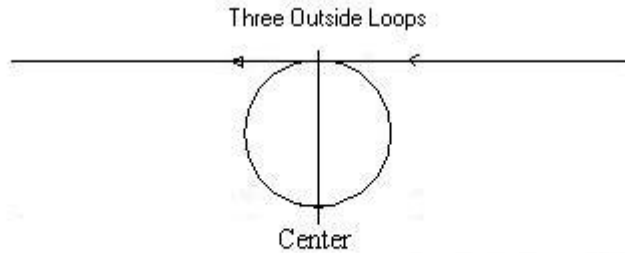
6. Plane changes heading
7. Roll rate is too rapid resulting in less than five seconds elapse during roll
8. Plane is not level at finish of roll



10. VERTICAL EIGHT Model pulls up and executes a complete inside loop. At the bottom, pushes over and completes an outside loop directly under the inside loop.

Downgrades:

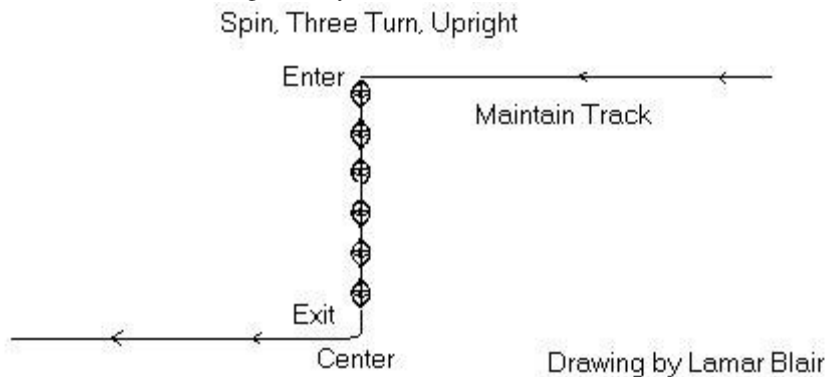
1. Loops not round and same diameter
2. Changes in heading during loops
3. Wings not level during loops
4. Outside loop not directly under inside loop



11. THREE OUTSIDE LOOPS: The model commences the outside loop flying straight and level, then noses down into three outside loops and recovers flying straight and level on the same heading and altitude as the entry.

Downgrades:

1. Loops not round
2. Loops not superimposed
3. Wings not level during loops
4. Changes in heading during loops
5. Exit not same altitude and heading as entry



12. THREE TURN SPIN The plane establishes a heading by flying straight and level, pulls up into a stall and commences the spin through one, two, three turns and recovers to level flight on the same heading as the initial flight direction. The judge must watch carefully to be sure this is a spin and not a vertical roll or spiral dive in the spin, some part of the plane always intersects an imaginary vertical line along the path of descent. In the spiral

dive, the plane circles round, but outside of, the imaginary vertical line.

Downgrades:

1. Initial heading not level
2. Commencement of first spin is sloppy or uncertain
3. Does not do exactly three turns. Less than two or more than four turns shall be scored zero
4. Does not recover on same heading as initial heading
5. If any of the three turns are spiral dives rather than spins, the score is zero
6. Rate of rotation in spin is excessively rapid
7. Does not finish level
8. Does not fly straight and level for 50 feet



13. **LANDING PERFECTION** When the contestant has his plane lined up and on heading for the final approach, and not less than six (6) feet off the ground, he must announce the start of the Landing maneuver. From this point on, the Landing will be judged.

Downgrades:

1. Approach during landing too steep
2. Gallops in pitch, yaw or roll during approach
3. Model impacts or thuds onto ground due to lack of flare
4. Model bounces on landing
5. Model turns left or right while rolling to a stop. Turns unnecessarily to avoid running off the runway may be excused if wind direction and spot location are adverse. However, this leniency applies only if the model lands on the runway and should not be employed in cases where the flyer accidentally lands near the edge of the runway.
6. All landings judged only for 50 feet after touchdown.