



CARFF Wings Program



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PURPOSE OF THE PROGRAM

- 1 To provide a safe, interesting, and challenging flying achievement program that will encourage individual club members to improve their overall flying skills and ability.
- 2 To develop a membership of competent flyers to assist new club members regarding all aspects of the sport that pertain to powered flight.
- 3 To minimize safety hazards and accidents by encouraging all club members to develop better and more proficient flying habits,
- 4 To make radio control flying a more meaningful and satisfying experience for all club members.

FLYING PROFICIENCY LEVELS

There are four flying proficiency levels, as indicated below. After successful examination at each level, beginning at Level "A", a candidate will receive a certificate for the appropriate wings level.

The following is a list of proficiency levels and flyer status:

- PILOT 'A' – Entry Level
- PILOT 'B' - Intermediate
- PILOT 'C' - Intermediate advanced
- PILOT 'D' - Advanced

The current flying proficiency level attained by each club member will be recorded on a membership list.

GENERAL RULES AND CONDITIONS

- 1 Qualified instructors, instructor helpers, and examiners of the club will be appointed for the purpose of qualifying Wings recipients. All other members wishing to participate in the judging are welcome and are encouraged to qualify.
- 2 To qualify as an Official "**Instructor**", the member must attain a minimum PILOT 'C' level Wings. To qualify as an Official "**Examiner**", or as a "**Chief Instructor**", the member must attain a minimum PILOT 'D' level Wings. "**Instructor Helpers**" are appointed by the club at the recommendation of the Chief Instructor.
- 3 The Examiner qualification is good for marking "A" and "B" levels only. To mark "C" and "D" levels one of the two examiners must hold a "D" level.
- 4 Two examiners are required for "B", "C" and "D" levels. To ensure that all members have an opportunity to obtain the required "A" level one qualified examiner will suffice if two are not available. However, the candidate's instructor cannot be the sole examiner.
- 5 Examinations may be taken at any time, however, to ensure that an examiner will be on hand a candidate should contact the Chief Instructor so that arrangements can be made. During an examination no other aircraft shall be flying or running in the pits. This is to ensure every advantage to the candidate.
- 6 All maneuvers will be judged out of 5 points. A minimum of 60% is required to pass.

- 7 Judging for "A" levels will tend to be softer than for the other categories. This is to account for trainer type aircraft and nerves. However, the other 3 categories will be marked in the same manner as at a contest. When you qualify for your other level of wings you can be proud of them!
- 8 Candidates may, if they wish, have an assistant to aid them in the pit area and call the maneuvers out during the flight.
- 9 If there are 6 or more planes waiting to fly approval from all pilots is required before test may commence.

PILOT 'A' LEVEL BASIC WINGS

Before taking the PILOT 'A' level Wings test the prospective pilot must demonstrate to their instructor that they are capable of flying the test from either direction, and have demonstrated knowledge of dead stick landing procedures. While these capabilities are not suitable to be demonstrated in a "test" situation they are viewed as important capabilities for competent pilots.

Candidates must demonstrate on two successive attempts during their examination period his/her ability to:

- 1 Take off and land unassisted.
- 2 Maintain straight and level flight parallel to the runway, using a rectangular circuit pattern.
- 3 Perform a figure eight with the center of the eight flying towards themselves.
- 4 Perform two unusual attitudes with a Roll and a vertical Loop.
- 5 Rectangular Approach (circuit).
- 6 Land under power.

PILOT 'B' LEVEL INTERMEDIATE CONTROL

Candidates must demonstrate on two successive attempts during the examination period their ability to:

- 1 Take off.
- 2 Straight flight out.
- 3 Procedure turn.
- 4 Straight flight back (Downwind).
- 5 One Vertical Loop (Upwind).
- 6 One Immelmann (Turn).
- 7 Split "S" (Downwind)
- 8 One horizontal role.
- 9 Half Reverse Cuban Eight (turn)
- 10 Straight and Level Flight (downwind)
- 11 Half Cuban Eight (turn)
- 12 Straight and Level Flight (upwind)
- 13 Stall Turn
- 14 Rectangular approach.
- 15 Landing under power.

PILOT 'C' LEVEL INTERMEDIATE ADVANCED

Candidate must demonstrate on two successive attempts during the examination period his ability to:

1. Take off.
2. Straight flight out.
3. Procedure turn.
4. Straight flight back (Downwind).
5. Stall turn.
6. Two consecutive horizontal rolls.
7. Immelman Turn.
8. Cuban 8.
9. Straight inverted flight.
10. One outside loop.
11. Rectangular approach.
12. Landing under power.

PILOT 'D' LEVEL ADVANCED

Candidate must demonstrate on two successive attempts during the examination period their ability to:

1. Take off.
2. Straight flight out.
3. Procedure turn.
4. Straight flight back (Downwind).
5. Stall turn with 1/2 rolls.
6. Three horizontal rolls.
7. Three reverse outside loops.
8. Horizontal 8.
9. Four point roll.
10. Three turn spin.
11. Rectangular approach.
12. Landing under power.

PILOTS INSTRUCTIONS

- 1 The pilot must stay within the **designated pilot area** for all maneuvers.
- 2 The pilot or their aid must **call his maneuvers** prior to execution.
- 3 At no time should the aircraft fly behind the flight line.
- 4 The candidate must perform all maneuvers and/or procedures parallel to, but beyond the designated runway.
- 5 Candidates will maintain a **reasonable height and range** while being judged.
- 6 Candidates are **allowed only two free passes per flight**.

GENERAL DOWNGRADING

A general downgrading of the total score will be made due to the following:

- 5 points for each time the aircraft crosses the flight line.
- 2 points for each time a maneuver is not clearly called.
- 5 points for each free pass made over the allowed limit of two,
- 5 points for flying too far away.

NOTE: See description of maneuvers for individual downgrading.

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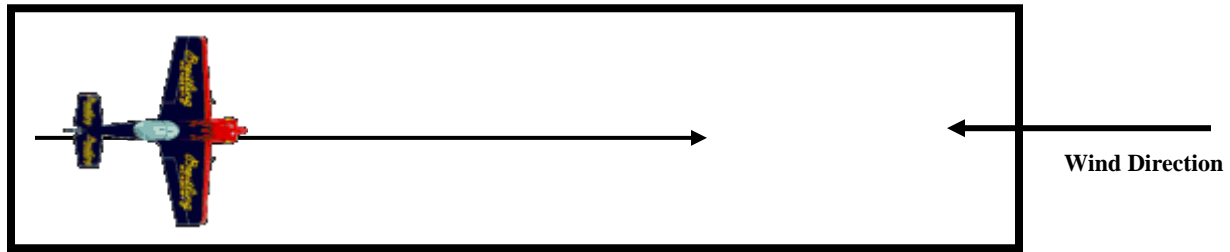
Take Off:

From a dead stop, model travels straight down the center of the runway. Model lifts off and climbs out straight with wings level. maneuver complete two meters off the ground.

Downgrades:

- Take-off not straight.
- Lift-off is not smooth.
- Climb-out too steep or erratic.
- Model pulls left or right during climb.

Diagram



Top View



Side View

Wings Level A B C D

Applies to: X X X X

Straight Flight

Straight Flight Out

The model will attain altitude and must be flown parallel to the runway in an absolutely straight and level path into the wind for three to five seconds. The maneuver must be centered directly in front of the judges.

Straight Flight back

The model flies straight and level on the same line and altitude as the Straight Flight Out and finished in front of the judges

Downgrades:

- Model makes change in altitude during straight and level flight.
- Model deviates left or right.

- Maneuver not held for at least three seconds.
- Maneuver not centered in front of judges.
- Model is flown at a distance greater than twenty-five meters away from in front of the judges.

Diagram



Side View

Wings Level A B C D

Applies to: X X

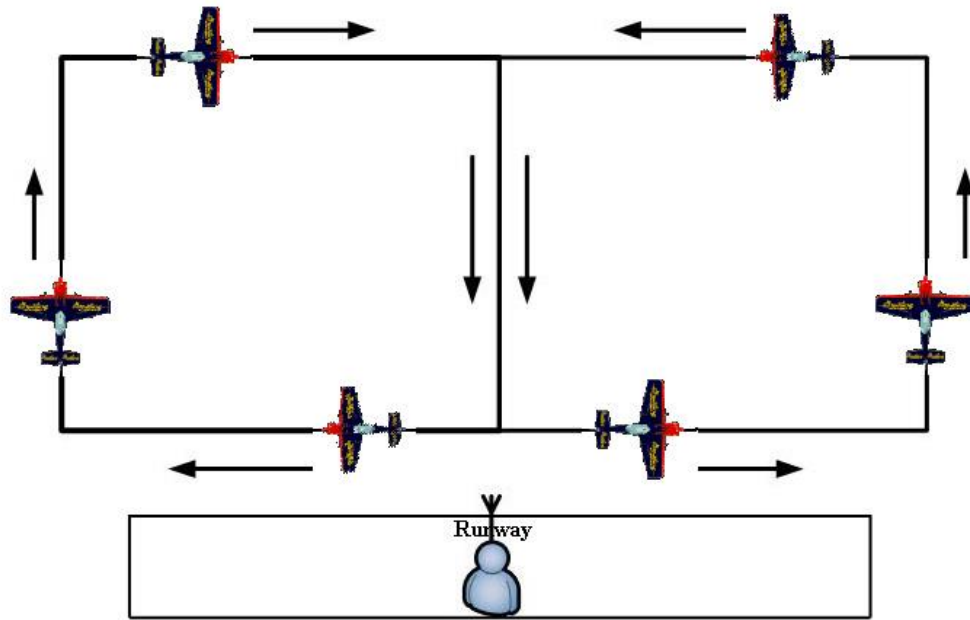
Flat Figure Eight

The model will attain altitude and must be flown parallel to the runway to a point at the center-line of the judges. Model then makes a ninety degree turn in a direction away from the judges, levels its wings, and then makes a 360 degree flat turn to the right or left.

When the model returns to its original heading away from the flight line, it makes a second 360 degree flat turn in the opposite direction to the first 360 degree turn. The maneuver is complete when the model levels its wings after the second 360 degree turn.

Downgrades:

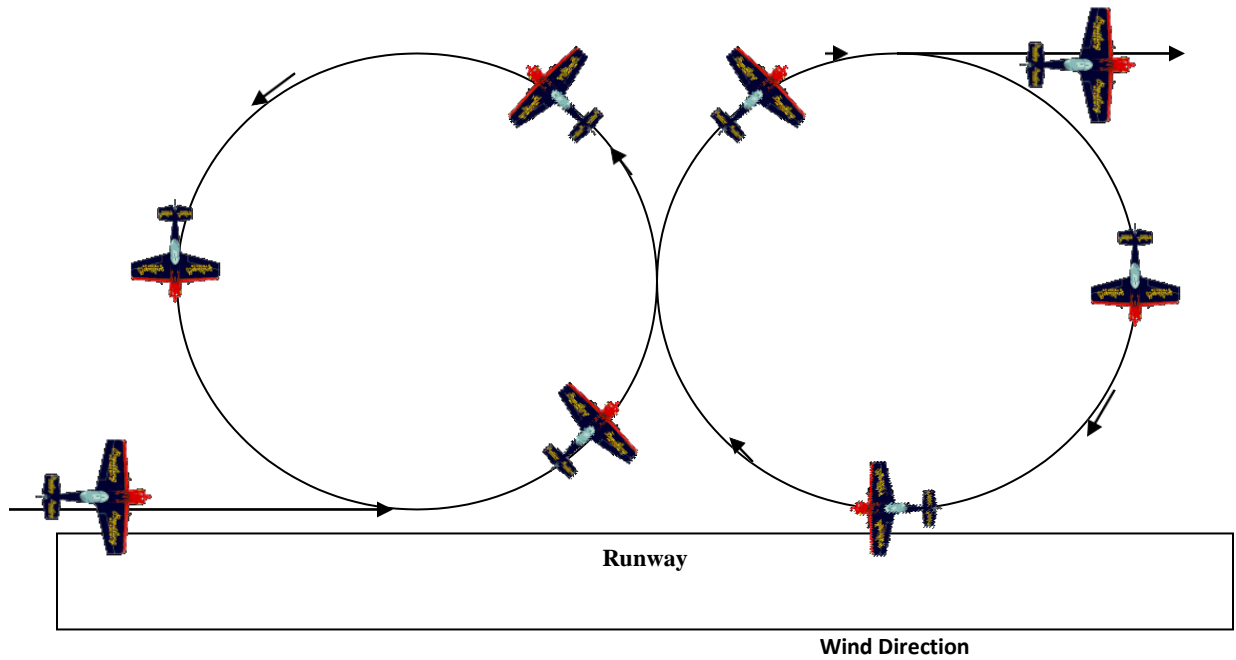
- First turn not exactly 90 degrees.
- 360 degree turns not circular in shape.
- Model makes changes in altitude during 360 degree turns.
- Model does not finish the first and second 360 degree turns at the original start point of the maneuver



Wings Level A B C D

Applies to: X

'A' WINGS – Flight should be in reverse of illustrated where the pilot flies towards themselves on the center of the eight.



Diagram

Top View

Wings Level A B C D

Applies to: X

Rectangular Approach

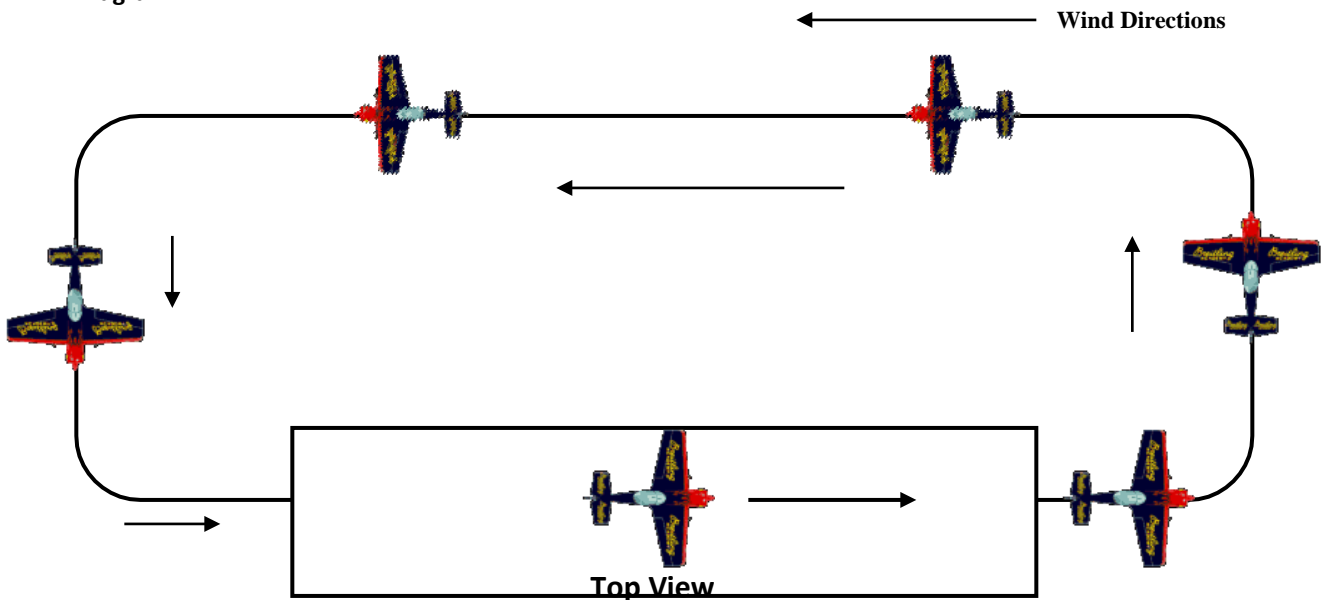
The maneuver begins with the model flying straight and level into the wind parallel to the runway. At the far end of the runway, the model turns 90 degrees away from the flight line for the first cross-wind leg. The model makes a second 90 degree turn into the down-wind leg. The model makes a third 90 degree turn into the second cross-wind leg. The model makes a fourth 90 degree turn into the wind and continues on a descending flight towards the touchdown at the start of the landing strip.

The first three legs are to be held at a constant altitude. The descent will commence after the fourth 90 degree turn has been executed. The maneuver is complete when the aircraft descends to 2 meters off of the ground.

Downgrades

- The 90 degree turns are not smooth and precise.
- Turns are more or less than 90 degrees.
- Model deviates from heading on the straight part of any leg.
- Model changes altitude on the straight part of the first three legs.

Diagram



Wings Level A B C D

Applies to: X X

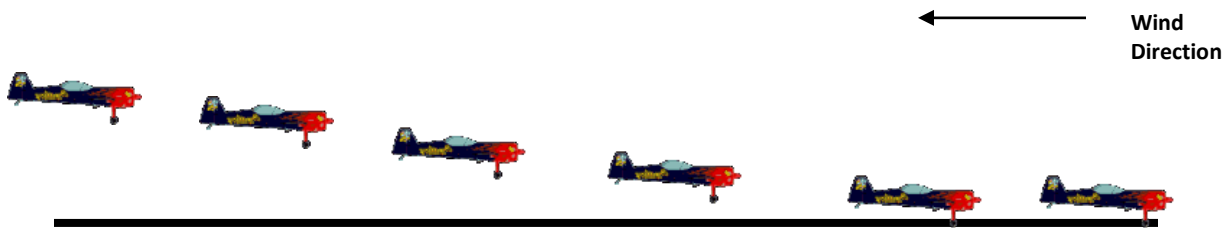
Landing

The maneuver starts when the aircraft descends to two meters above the ground. The model flares smoothly to touch the ground and rolls to a stop with no bouncing or changes in heading.

Downgrades

- Wings not level.
- Model changes heading.
- Model impacts the ground due to lack of flare.
- Model bounces after touchdown.
- Model ends up on its back - automatic 0 points for maneuver.
- Any undercarriage leg collapse or retract on landing - 0 points for maneuver.

Diagram



Side View

Wings Level	A	B	C	D
Applies to:	X	X	X	X

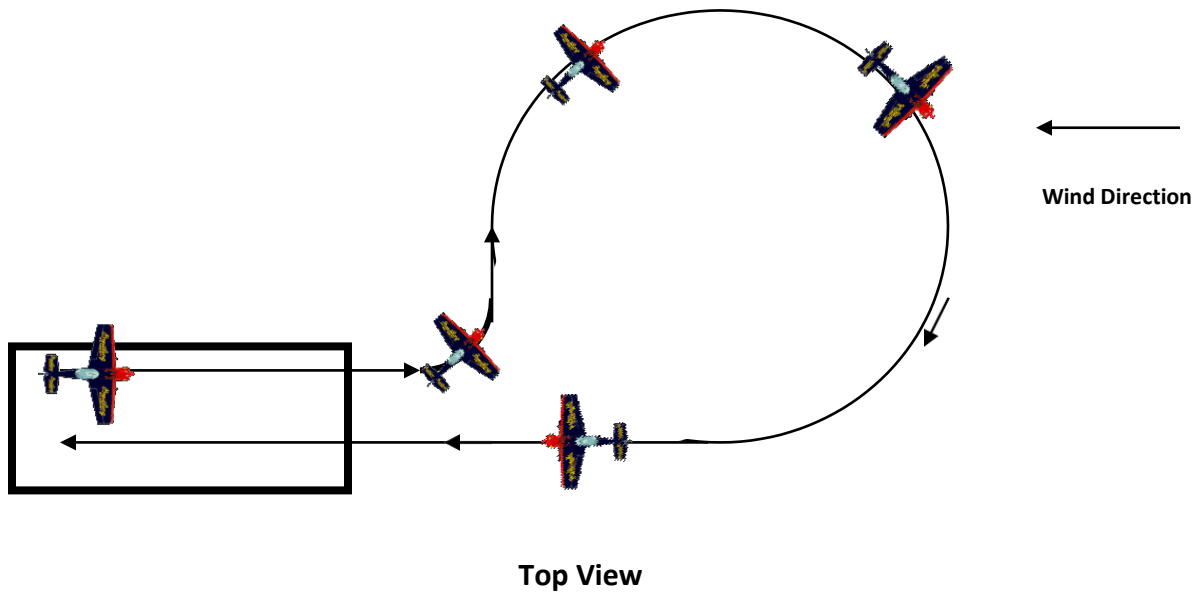
Procedure Turn

After the Straight Flight Out, model makes a 90 degree turn away from the flight line followed by a 270 degree turn in the opposite direction back to the reverse flight path of the Straight Flight Out.

Downgrades

- First turn not exactly 90 degrees.
- Opposite turn not exactly 270 degrees.
- Changes in altitude during turn.
- Turns not smooth and circular.
- Does not head back over exact outgoing path.
- Should not fly down the flightline, but to the far side of the runway.

Diagram



Wings Level A B C D
Applies to: X

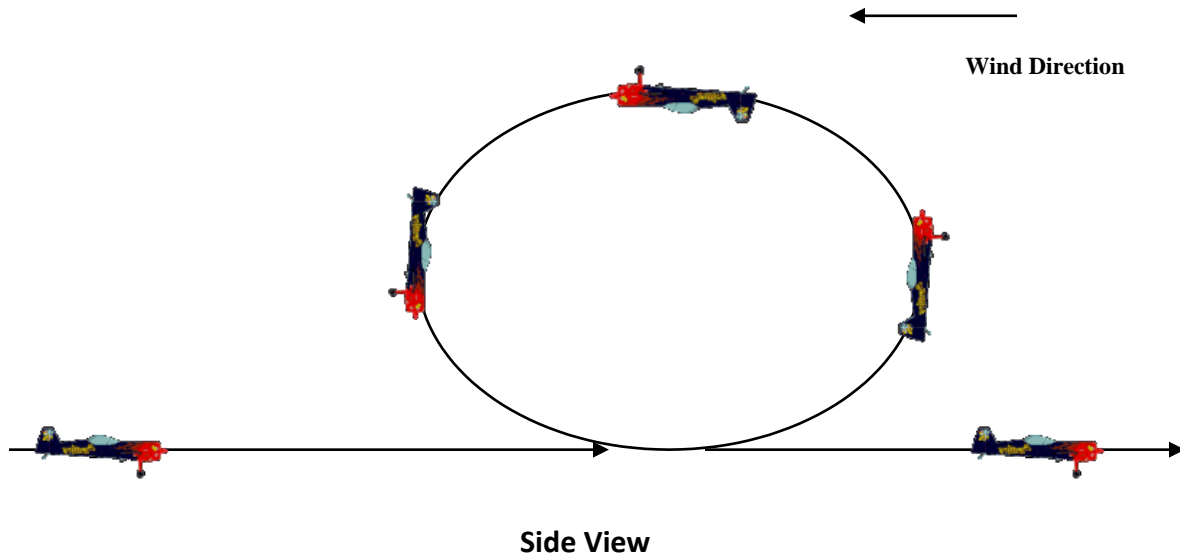
Two Inside Loops

Model pulls up and executes two consecutive loops. Both loops should be round and superimposed.

Downgrades

- Loops not round.
- Loops not superimposed.
- Wings not level during loops.
- Changes in heading during loops.

Diagram



Wings Level A B C D

Applies to: X

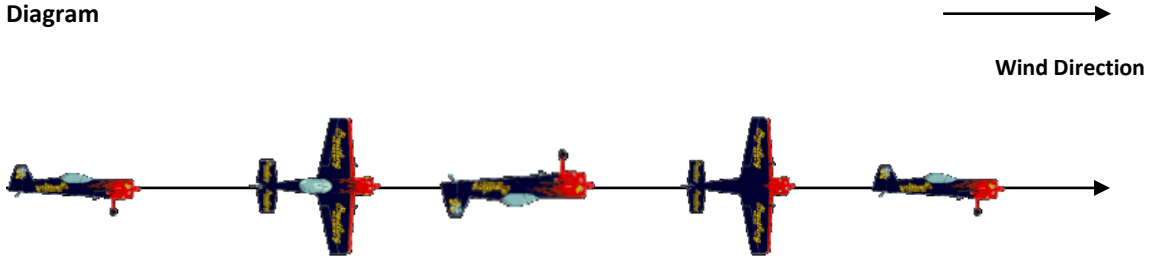
One Horizontal Roll

Model rolls through 360 degrees on a straight and level path.

Downgrades

- Model varies in altitude.
- Model not level on entry and exit.
- Roll not 360 degrees.
- Model changes heading.
- Roll rate not constant

Diagram



SIDE VIEW

Wings Level A B C D

Applies to: X

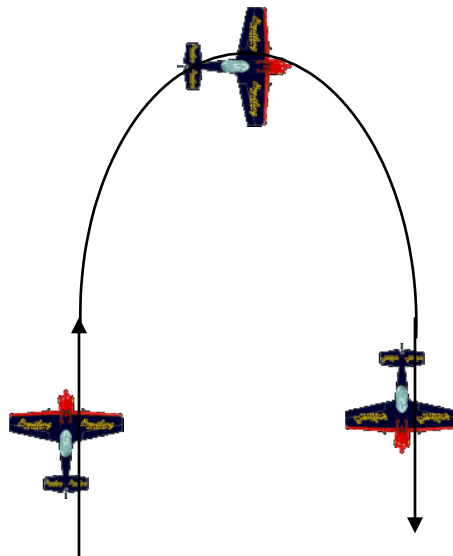
Stall Turn

Model pulls up into a vertical attitude, executes a 180 degree stall turn in either direction, then recovers in level flight.

Downgrades:

- Model not vertical before and after stall turn.
- Stall turn not exactly 180 degrees.

Diagram



Front View

Wings Level A B C D

Applies to: X

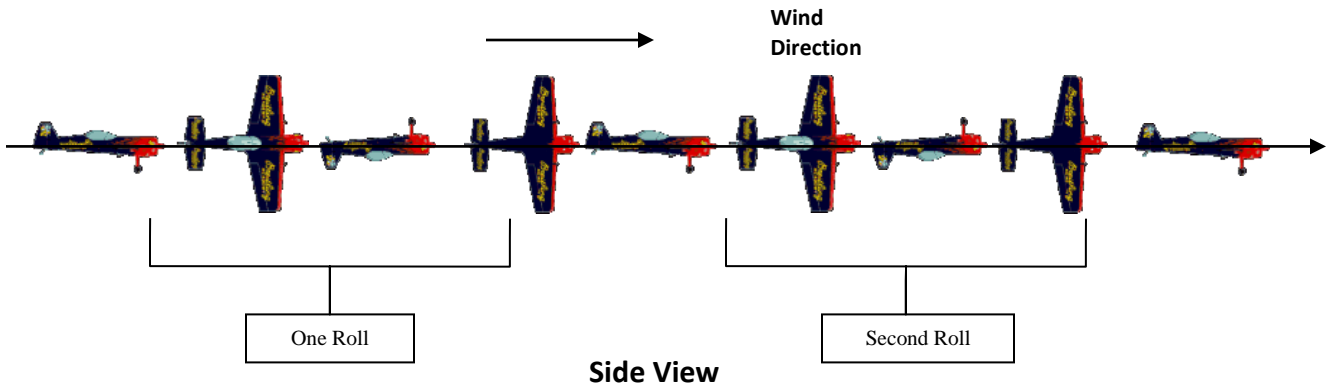
Two Horizontal Rolls

Model rolls at a uniform rate through two complete revolutions in either direction.

Downgrades:

- Changes in heading during rolls.
- Changes in altitude during rolls.
- Roll rate not constant.
- Model does not do exactly two rolls.

Diagram



Wings Level A B C D

Applies to: X

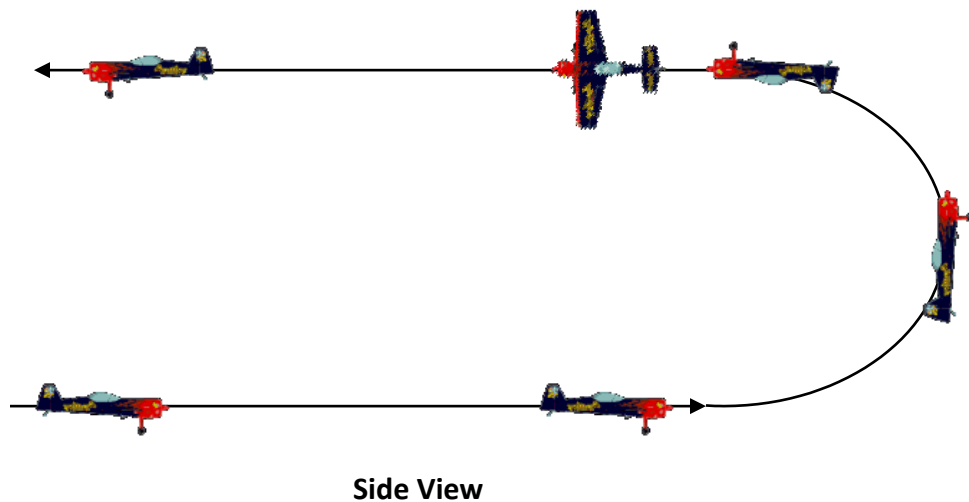
Immelman Turn

Model pulls up and completes 1/2 loop then immediately performs 1/2 roll to recover in level flight at a higher altitude than entry.

Downgrades:

- Change in heading during 1/2 loop or 1/2 roll.
- 1/2 roll not immediately after 1/2 loop.

Diagram



Wings Level A B C D

Applies to: X

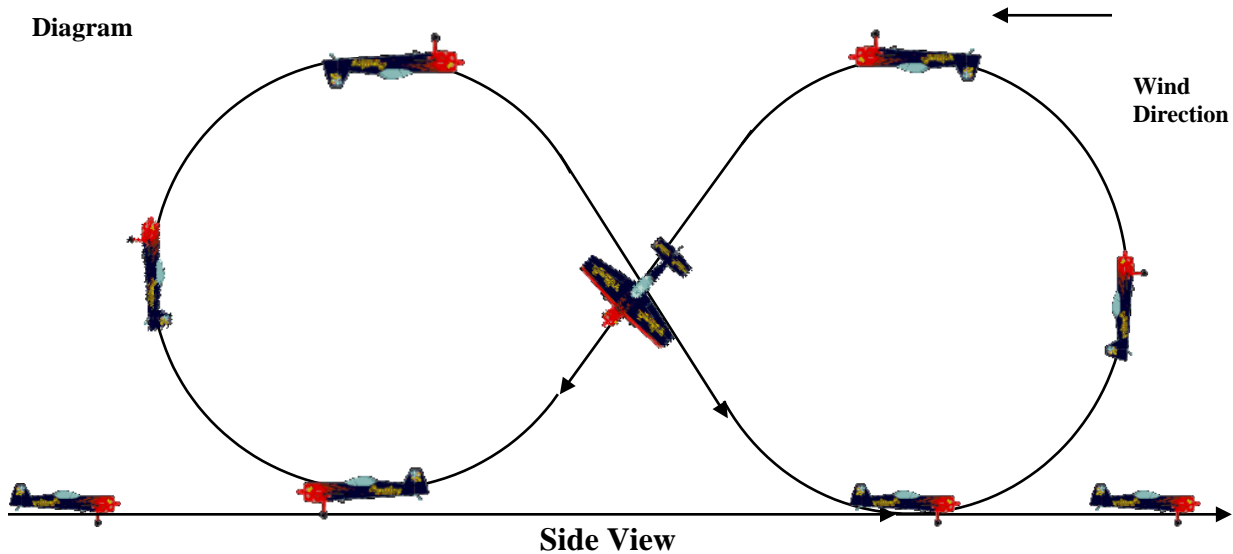
Cuban Eight

Model pulls up and executes an inside loop to a point where it is inverted on a 45 degree down line. Model then performs 1/2 roll followed by an identical 1/2 loop to a 45 degree down-line. Model performs second 1/2 roll to upright and completes first loop to level flight.

Downgrades:

- Loops not round and the same size.
- Model not 45 degrees at time of commencement of 1/2 rolls.
- Changes in heading in loops or rolls.
- Crossover rolls do not occur at the same point.

Diagram



Wings Level A B C D

Applies to: X

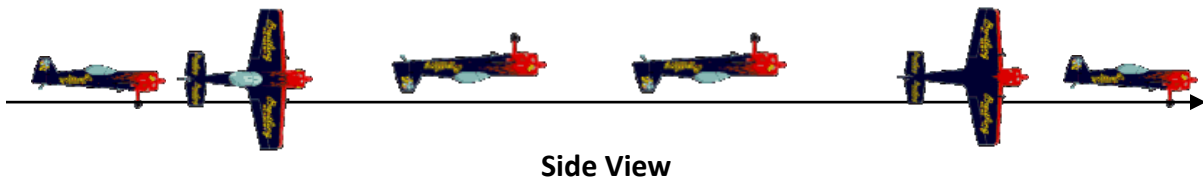
Straight Inverted Flight

Model half rolls to inverted and flies straight and level inverted for a minimum of four seconds, then one half rolls back to level flight.

Downgrades:

- 1/2 rolls not level.
- Inverted flight not straight and level.
- Changes in heading during rolls and inverted flight.
- Inverted flight not four seconds.

Diagram



Wings Level A B C D

Applies to: X

One Outside Loop

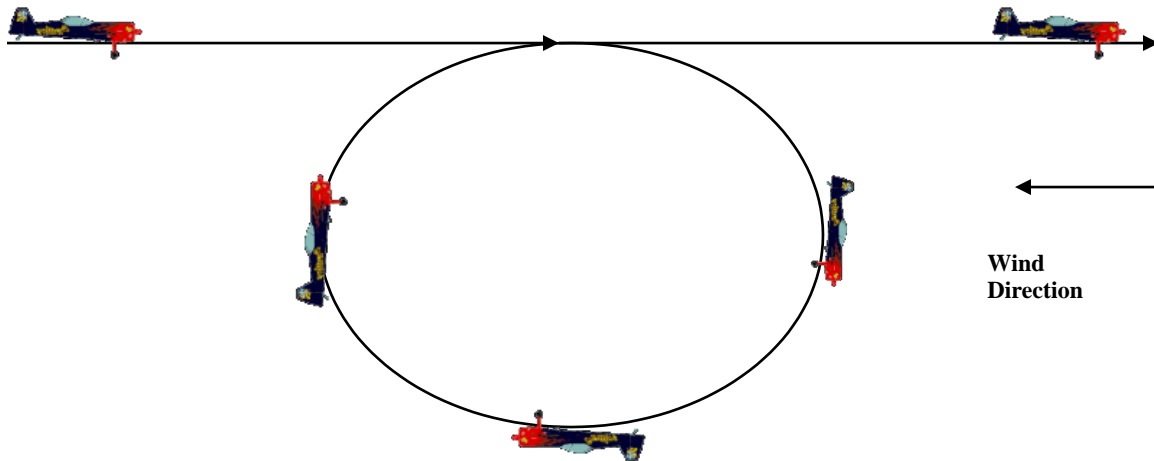
Model pushes over and executes one outside loop.

Downgrades:

- Loop not round.
- Wings not level during loop.
- Changes in heading.

Diagram

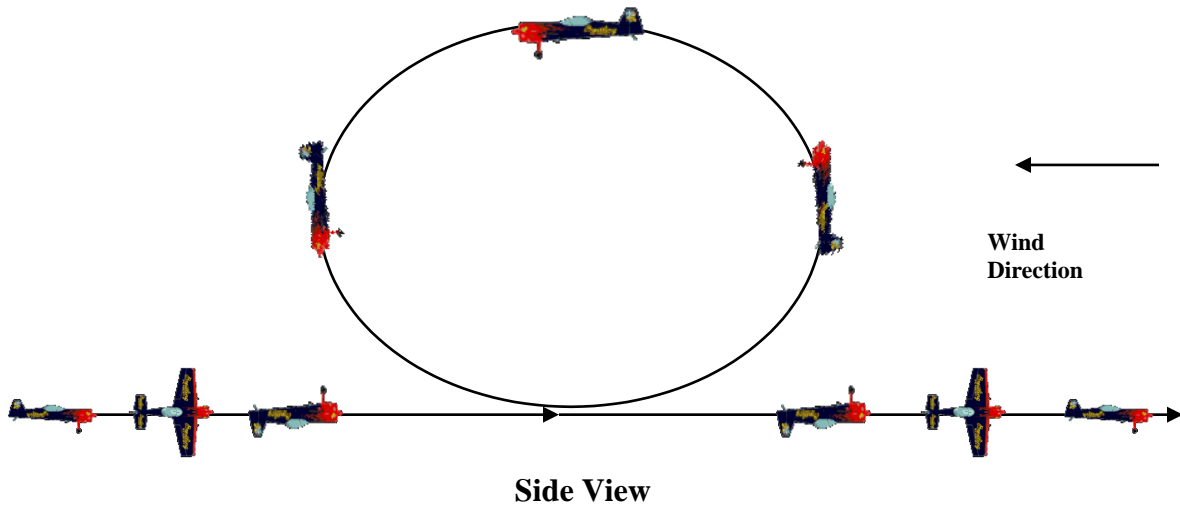
Side View



Wings Level A B C D

Applies to: X

Diagram



Wings Level A B C D
Applies to: X

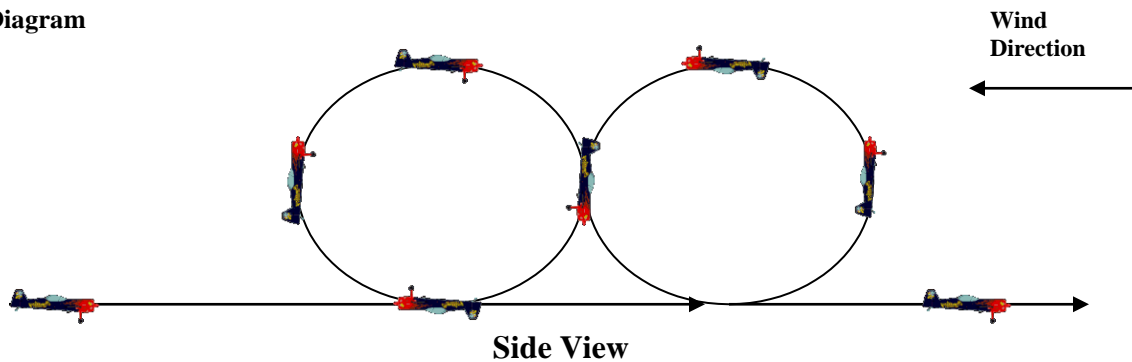
Horizontal Eight

Model pulls up and completes 3/4 of an inside loop to a vertical position then does a complete outside loop to a vertical position again then recovers by completing a 1/4 inside loop.

Downgrades:

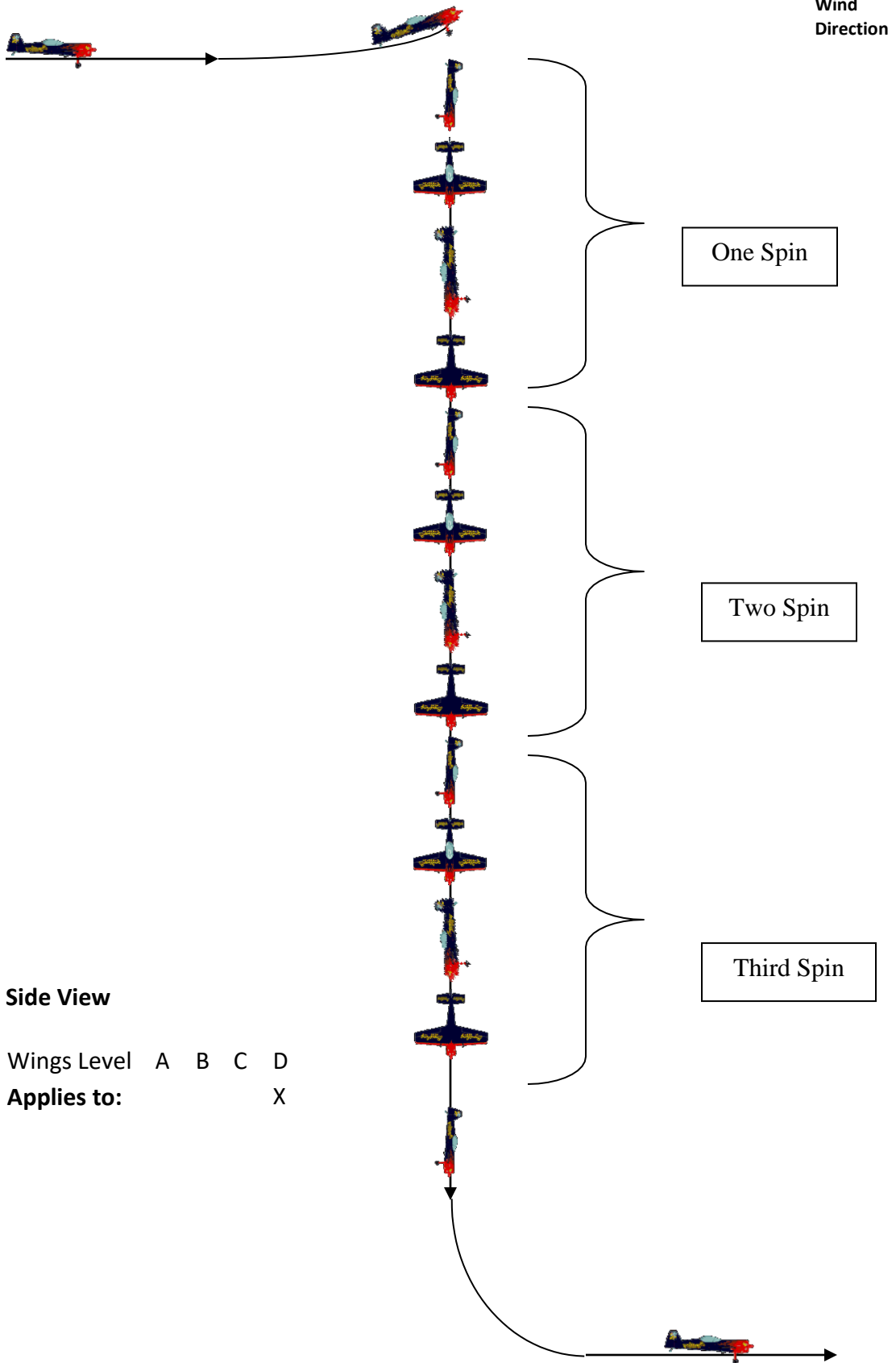
- Loops not round.
- Model not vertical at cross-over points.
- Changes in heading during loops.
- Loops not the same diameter.
- Loops not at same altitude.
- Model does not cross over at same point.

Diagram



Wings Level A B C D
Applies to: X

Diagram



Side View

Wings Level A B C D
Applies to: X

Split S

Model half rolls to inverted then immediately executes half an inside loop to level flight at a lower altitude than entry.

Downgrades:

- Changes in heading during half loop or half roll.
- Half loop not immediately after half roll.

Wings Level	A	B	C	D
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Applies to:		X		
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Half Reverse Cuban Eight

Model pulls into a 45-degree climb, half rolls, and then executes part of a loop back to level flight.

Downgrades:

- Model not at 45 degrees before commencing half roll.
- Changes in heading in roll.
- Half roll not exactly 180°.
- Loop not round
- Half roll not on center of 45-degree line.

Wings Level	A	B	C	D
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Applies to:			X	
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NOTES: