

2014 IMAC Basic Sequence

10 figures

We will work on the first 5

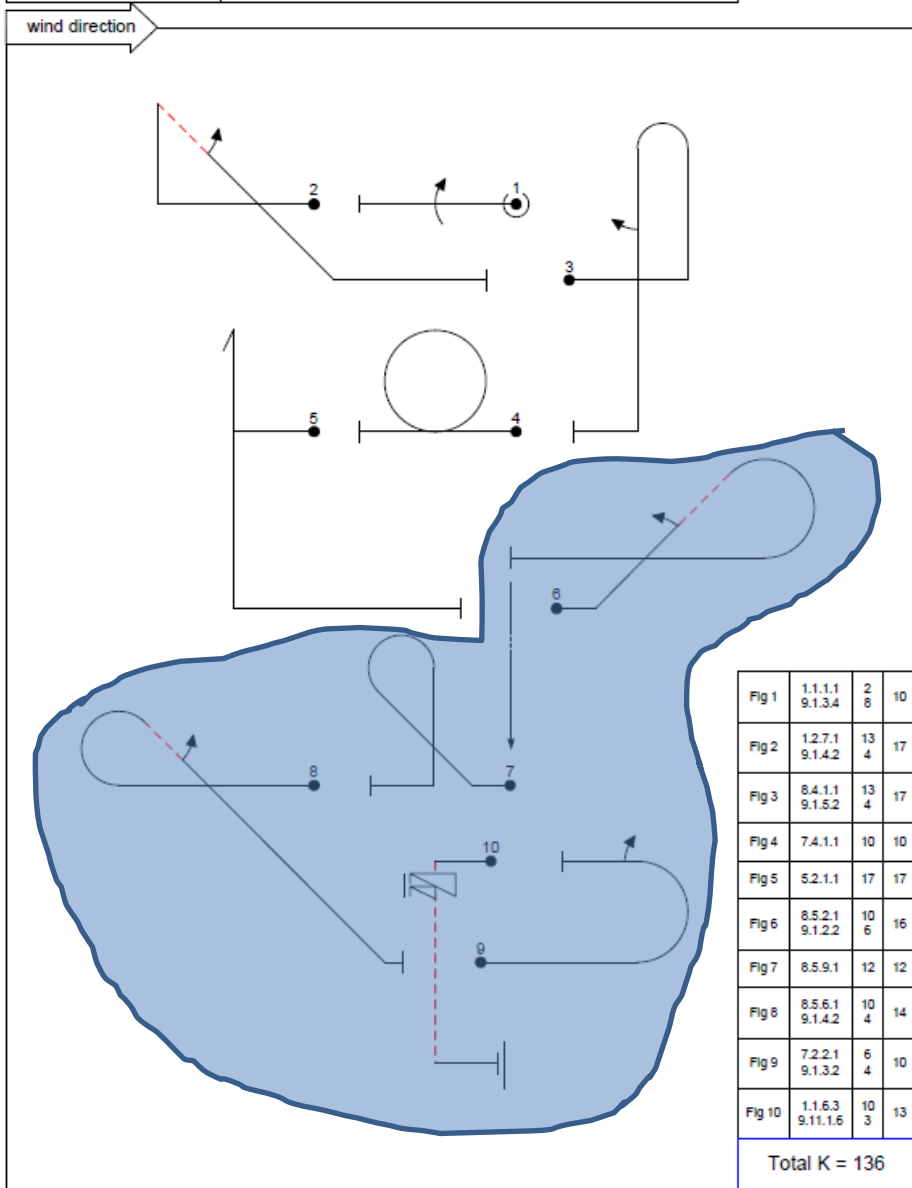
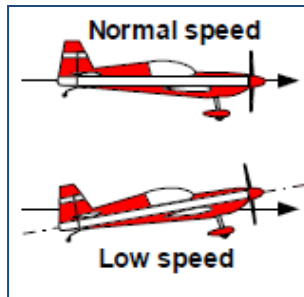
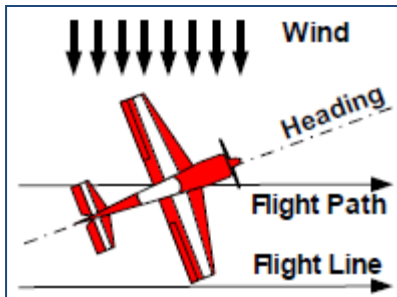
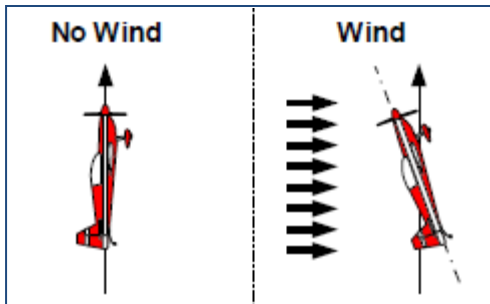


Fig 1	1.1.1.1 9.1.3.4	2 8	10
Fig 2	1.2.7.1 9.1.4.2	13 4	17
Fig 3	8.4.1.1 9.1.5.2	13 4	17
Fig 4	7.4.1.1	10 10	
Fig 5	5.2.1.1	17 17	
Fig 6	8.5.2.1 9.1.2.2	10 6	16
Fig 7	8.5.9.1	12 12	
Fig 8	8.5.6.1 9.1.4.2	10 4	14
Fig 9	7.2.2.1 9.1.3.2	6 4	10
Fig 10	1.1.6.3 9.11.1.6	10 3	13
Total K = 136			

Created Using Area 6™ software. ACOnak@ind.com

Aresti System

- The pictures describe the path of the plane.
- For RC aerobatics, the path is wind corrected. The CG of the plane must trace the path shown, even if the fuselage is not aligned with that path.



C Contest: **Official 2014 Basic Known**

Date: _____ Program: **Basic Known**



wind direction →

Fig 1	1.1.1.1 9.1.3.4	2 8	10
Fig 2	1.2.7.1 9.1.4.2	13 4	17
Fig 3	8.4.1.1 9.1.5.2	13 4	17
Fig 4	7.4.1.1	10	10
Fig 5	5.2.1.1	17	17
Fig 6	8.5.2.1 9.1.2.2	10 6	16
Fig 7	8.5.9.1	12	12
Fig 8	8.5.6.1 9.1.4.2	10 4	14
Fig 9	7.2.2.1 9.1.3.2	6 4	10
Fig 10	1.1.6.3 9.11.1.6	10 3	13
Total K = 136			

Created Using Aresti Pro™ software. ACCorale@ind.com

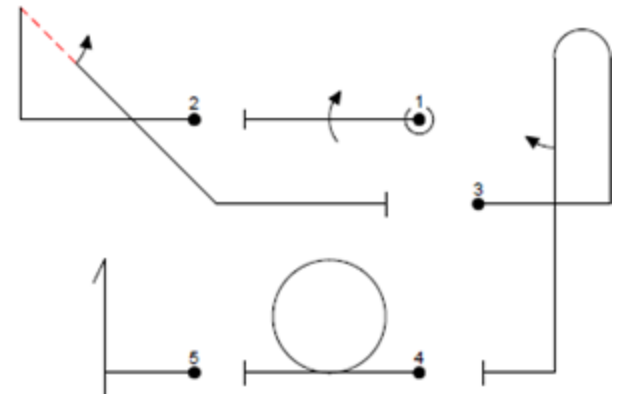
General Tips for Precision Flying

- Practice a lot – but practice right
 - Get advice from an experienced pilot.
 - Repeat a figure as many times as it takes to get it right.
 - Use all the controls – the left stick is as important as the right stick.
 - Don't stay on the ground when it's windy. If you can land safely, get up and practice!
- Set up your plane correctly
 - Adequate power is a must
 - Choose a propeller that gives you adequate thrust in the up lines, braking in the down lines. Top speed in level flight is not helpful for a precision aerobatics plane. Being able to maintain a constant speed through each figure is much more important.
 - Think small with control throws – the setup you use for 3D will not allow for the maximum smoothness that is rewarded in precision flying.
 - Make control linkages tight and with the best mechanical advantage for smaller throws.
 - A small amount of “push” inverted is usually desirable and indicates that the CG location is approximately correct.
 - Aside from the push in an inverted orientation, the plane should go where it's pointed and stay pointed that way with minimal inputs. If it doesn't, adjust thrust line, CG, angles of incidence, etc (there's too much to discuss here). Use of mixes should be minimal. Better to get the mechanical setup correct.
 - Get the plane set up right but don't let that get in the way of practice. A 90% plane is good enough if the pilot has practiced. A 100% plane is no good if the pilot has no skill!
- Think ahead – each figure sets you up for the next figure.
- Be smooth – jerking the sticks around will lose you points.

Flying straight and level

Why worry about it?

1. Every figure begins and ends with a horizontal line.



2. Horizontal lines connect the figures.

3. Judging starts when you enter the box and continues until you exit the box. You lose points if you're not actually straight and level between figures.

Straight and Level Common Errors

- Having the near wing pointed down – if wings are level you can see the bottom – remember the plane is above you

- Gaining or losing altitude 

- Not wind correcting – corrections are made with rudder, NOT with ailerons

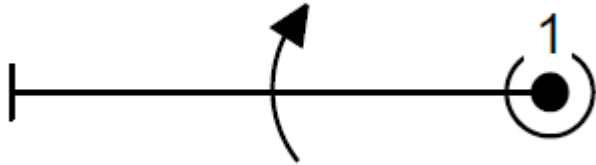


- “Hunting” in any axis – pitch, roll, yaw – every deviation is a deduction



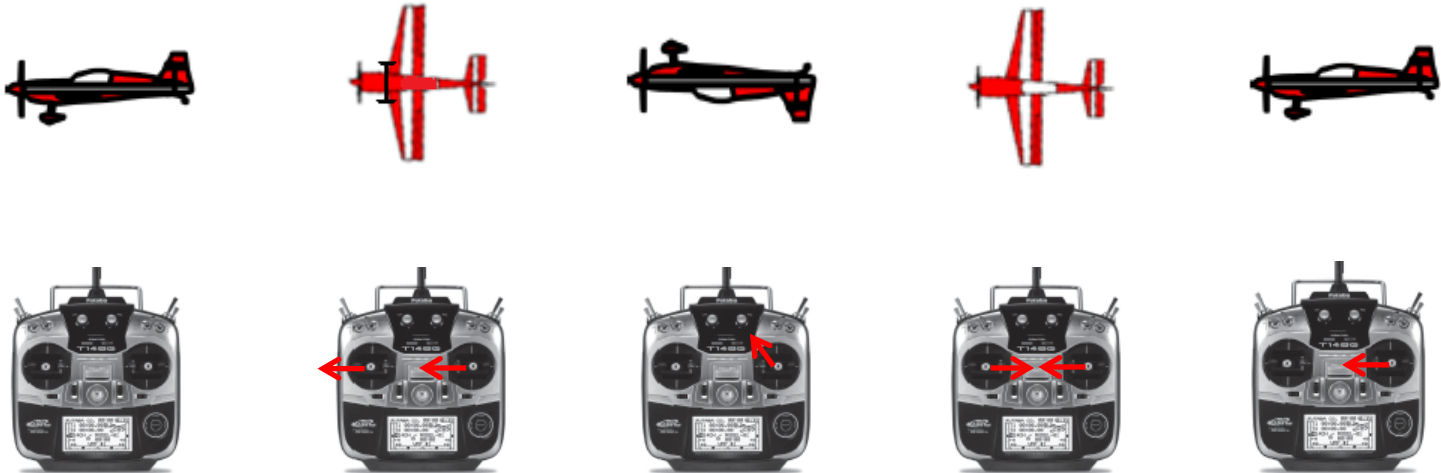
- Flying at full throttle – hurts noise score and forces you to rush the sequence

Full Roll on a Horizontal Line – “Proper” Method



Common errors:

- Roll not axial (straight line)
- Change in roll rate
- Stopping too soon or too late



Neutralize
controls

Add rudder
in other
direction

Down elevator
(push) to maintain
altitude inverted

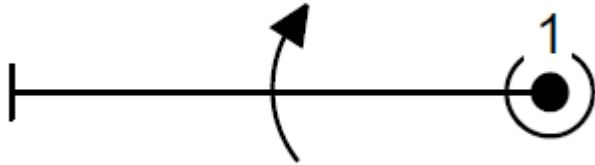
Add rudder to
hold altitude
in knife edge

Aileron to
begin roll



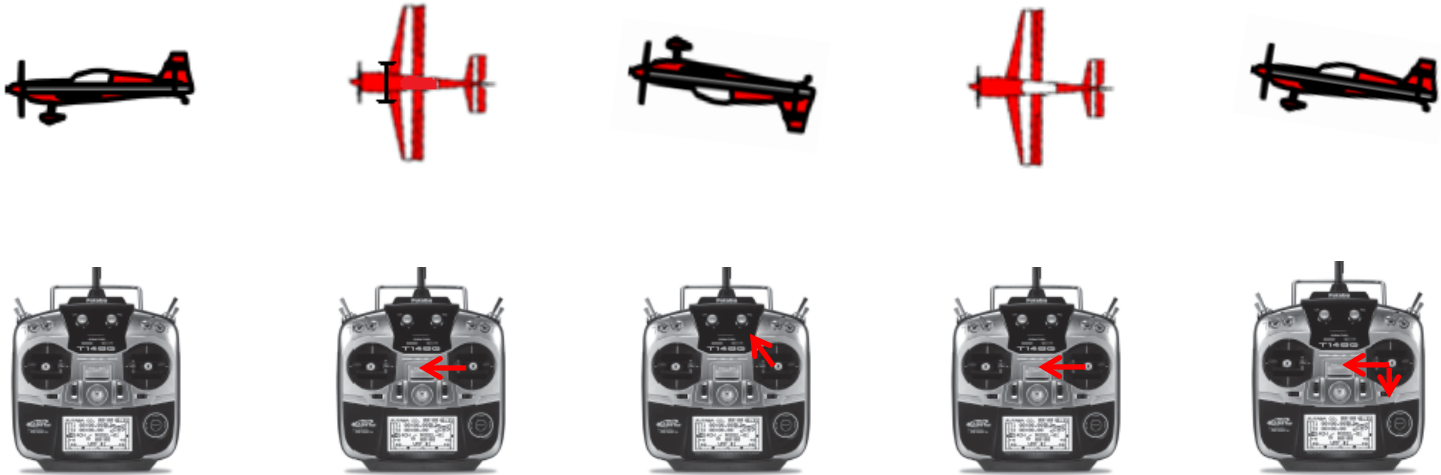
Aileron input remains same through maneuver. Rudder & elevator are increased & decreased smoothly to maintain altitude.

Full Roll on a Horizontal Line – Practical Method for Beginners



Common errors:

- Roll not axial (straight line)
- Change in roll rate
- Stopping too soon or too late



Neutralize controls

Down elevator (push) to maintain altitude inverted

Small pull on elevator then release and immediately follow with aileron



Aileron input remains same through maneuver. Elevator is used to pitch nose up imperceptibly before each knife edge position. Roll must be fast enough so that plane does not fall off in knife edge and judges don't catch elevator "bump."

Shark Tooth

Common errors:

- Roll not centered
- Change in roll rate
- Stopping roll too soon or too late
- 45° too shallow
- Not pulling out of 45° level

Reduce power to idle AFTER you are past the top of the maneuver – exact time depends on plane.

Roll must be at mid point of 45° down line

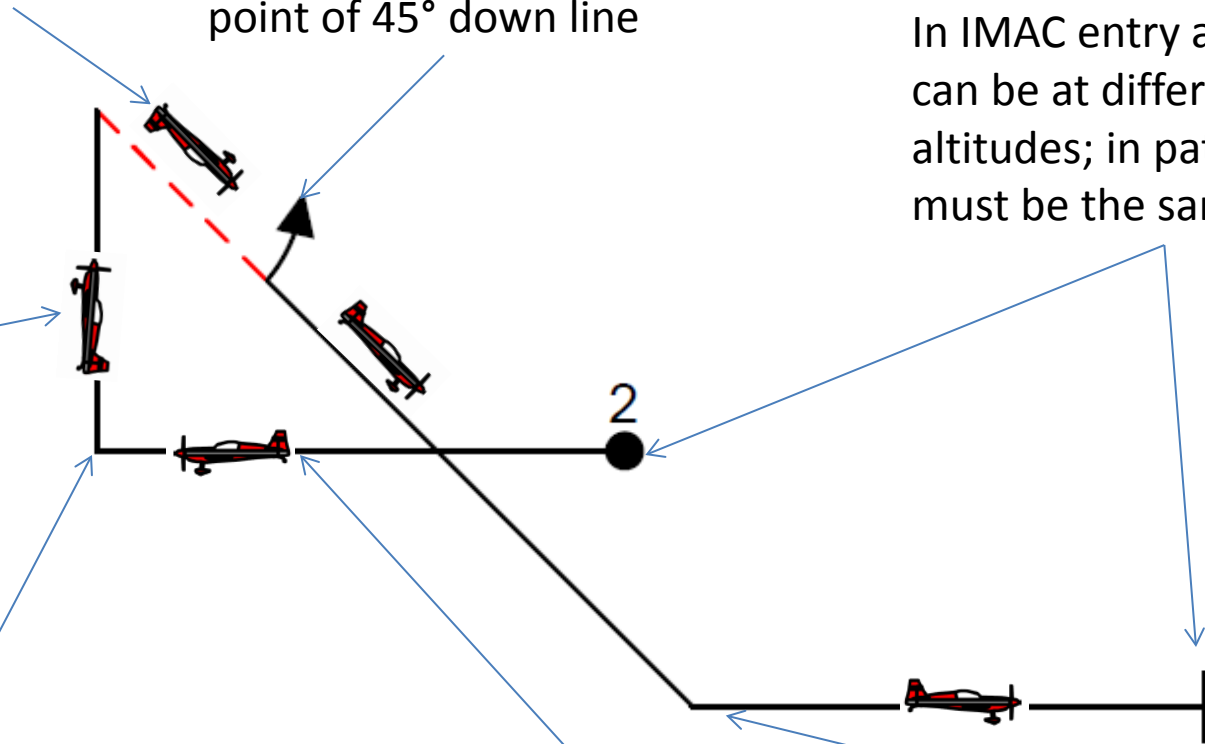
In IMAC entry and exit can be at different altitudes; in pattern they must be the same

Full power

Underpowered plane full throttle BEFORE up line. High powered plane, smoothly add power AS you pull up.

Mid throttle before entry

Back to mid throttle as you pull to level



Humpty Bump

Common errors:

- Roll not centered
- Stopping roll too soon or too late
- Half loop at top not consistent radius (note: full size planes tend to “flop” at the top of this maneuver. RC planes have enough power to make a good radius so use that power)
- Not drawing line – rushing to pull up due to inadequate altitude at top
- Not pulling out level

Reduce power to idle AFTER you are past the top of the maneuver – exact time depends on plane.

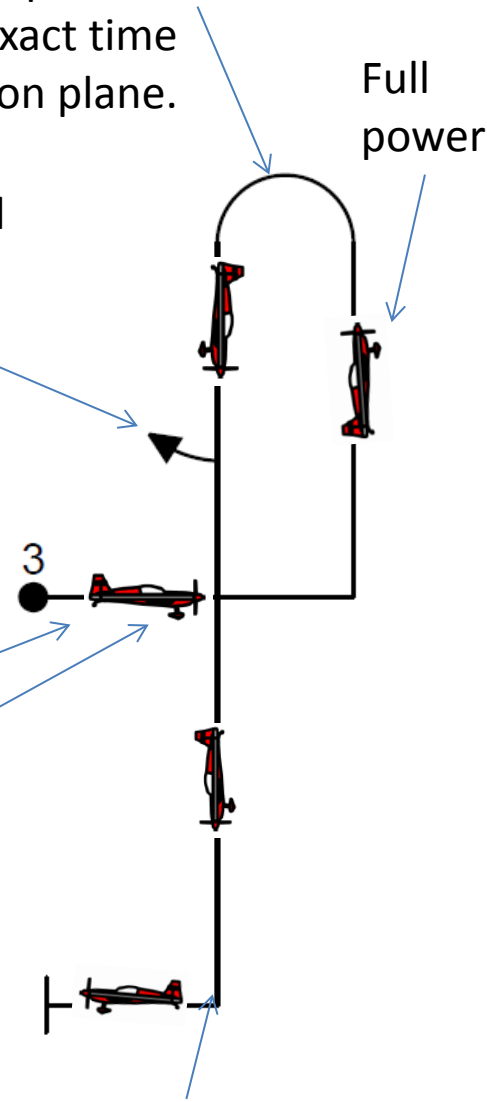
Roll must be at mid point of down line

Full power

Mid throttle before entry

Underpowered plane full throttle BEFORE upline. High powered plane, smoothly add power AS you pull up.

Back to mid throttle as you pull to level



Loop

Common errors:

- Egg shaped, E-shaped, segmented or other non-round shapes
- Entry and exit altitudes don't match
- "Corkscrew" in a crosswind
- Not level on pull out

Begin to ease off of elevator to "float" the top

Full power

Reduce power to idle AFTER you are past the top of the maneuver – exact time depends on plane.

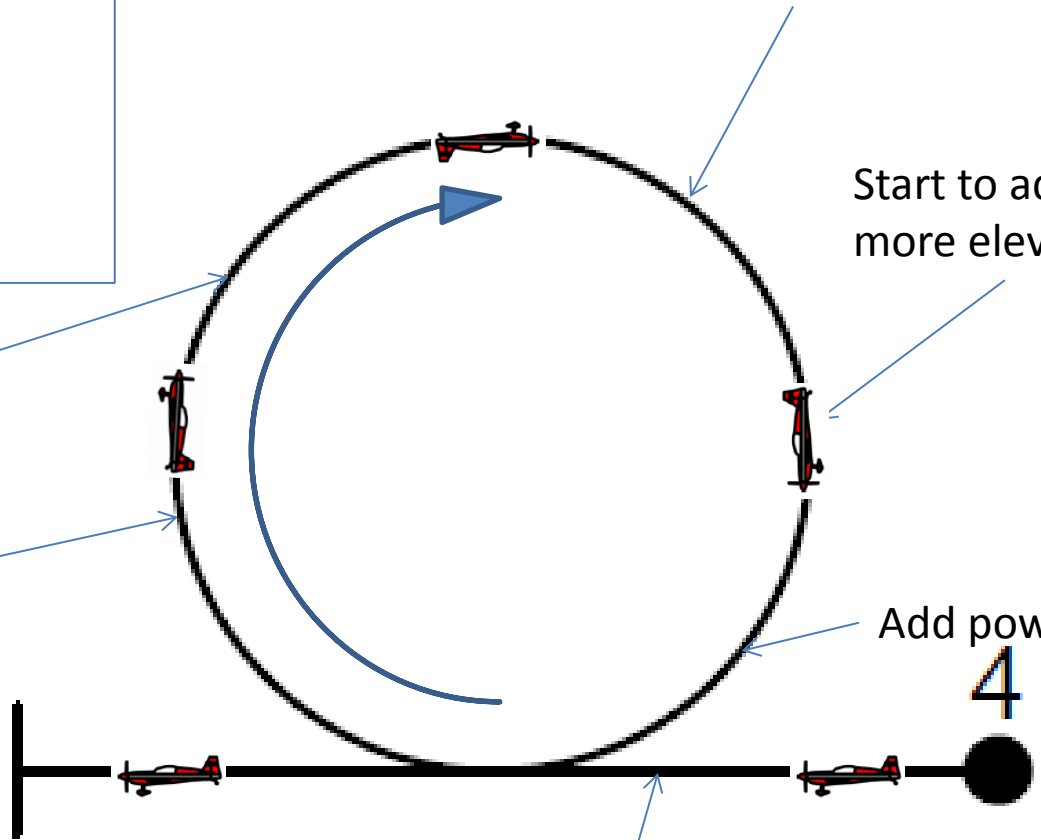
Start to add more elevator

Add power

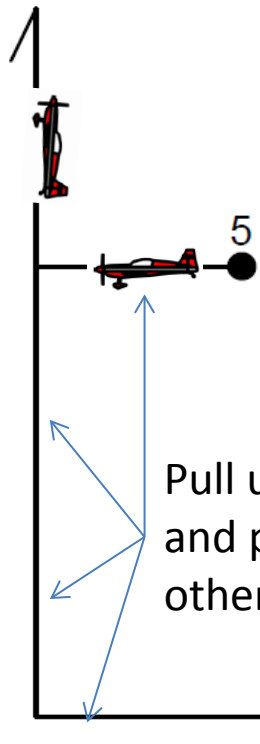
4

MAKE CONTROL INPUTS SMOOTHLY – ABRUPT CHANGES WILL UPSET THE PATH AND CAUSE THE LOOP TO BE SEGMENTED INSTEAD OF ROUND

Underpowered plane full throttle BEFORE start of loop. High powered plane, smoothly add power AS you pull up.

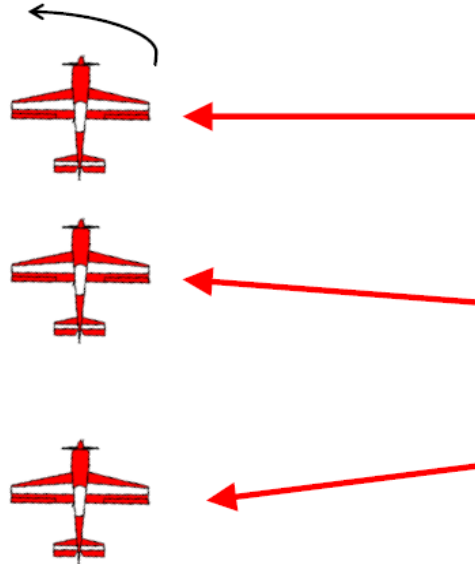


Hammerhead



Make sure you have enough rudder throw for a rapid pivot at the top.

Pull up, vertical up, vertical down and pull out handled the same as other figures.



3. As the plane stops, apply full rudder, keeping the engine at a fast idle or “blipping” the throttle to help the turn. Turning into the wind is preferred. Cut back to idle when the down line is established.

2. Wait for the plane to stop. The flow from the prop will allow you to maintain control despite zero air speed.

1. When you are near your desired altitude (allowing for any down line rolls) cut the throttle to a FAST IDLE.

Common errors:

- Cutting throttle to full idle with no “blip” – plane flops over
- Not cutting throttle enough – performing a fly over – plane must pivot within its wingspan
- Rotation in yaw or pitch

If the judges are honest and thorough, your scores will be low your first time competing.

It is generally harder to judge Basic than the higher classes because the deductions add up so quickly!

Almost everyone scores a zero sometimes. If you don't, you should move up a class.

Don't be embarrassed. Just keep practicing.

<http://www.modelaircraft.org/files/2013-2014RCScaleAerobatics1-1.pdf>

<http://www.modelaircraft.org/files/2013-2014RCAerobatics.pdf>

<http://mini-iac.com/>