

## The Aerobatic Box

All competition aerobatics are flown in a box that has four elements. A centre line, two lines at 60 degrees to the left and right of the centre line and a vertical line not to exceed 60 degrees to the horizontal. The standard distance out is 150 -175 meters for a standard FAI 2 meter class models, but this can be reduced slightly for smaller models. If the model is flown outside this box, then no marks are awarded for the portion of the manoeuvre flown outside the box.

## Marking

Each manoeuvre is awarded a difficulty level – K factor - (usually 1 to 5) and is then scored out of 10. Points are deducted for each error made e.g. entry without wings level, geometry not right (loop not round), roll rate not constant and so on. The bigger the error the greater the number of points deducted e.g. spin stops less than 15 deg off heading deduct 1 point for more than 15 deg deduct 2 points. Where a wrong manoeuvre is flown no points are awarded.

Please note these are only meant as a quick guide and you should read and be familiar with the full marking and competition criteria as described in the FIA sporting code, as well as information under our judging tab on the website.

### C-01 Rectangular Take-off Sequence (K = 2)

The take-off is possibly the most important manoeuvre of all, as it is the first manoeuvre you fly in front of the judges, so it is up to you to show us how good you are. The take-off should be flown with the same precision and grace as all the other manoeuvres in the schedule. All turns should be as flat as possible to give a good impression in the judges' eye of smoothness and gracefulness.

See separate Take-off and landing document.

### C-02 Two inside Loops: (K = 3)

From upright on the baseline at the centre line pull through two inside loops to exit upright at baseline height.

Judging notes.

Loops to be concentric and of equal size.

Constant radius.

Entry and exit should be same height.

Loop should be centred on the centre line.

**C-03 Immelmann Turn with Half Roll: (K= 2)**

From upright pull into a half loop and immediately perform a half roll to exit upright.

Judging notes.  
Constant radius through half loop.  
Half roll should immediately follow half loop.  
Must remain in the Box to avoid deductions.

**C-04 One Outside Loop: (K= 2)**

From upright on the top line at the centre line push through one outside loop to exit upright at top line height.

Judging notes.  
Constant radius.  
Entry and exit should be same height.  
Loop should be on the centre line.

**C-05 Split S: (K= 2)**

From upright on the top line perform a half roll immediately followed by half an inside loop to exit upright on the baseline.

Judging notes.  
Half loop immediately follows half roll.  
Constant radius through half loop.  
Must remain in the Box to avoid deductions.

**C-06 Cuban Eight with no Rolls: (K= 3)**

From upright on the baseline fly past centre and pull through 5/8 of an inside loop into a 45° down line. Push through 3/4 of an outside loop into a 45° down line. Pull through a 1/8 loop to exit upright on the baseline.

Judging notes.  
All radii equal.  
Entry and exit should be same height.  
Crossover on 45 degree down lines must be over centre line.

**C-07 Stall Turn: (K= 1)**

From upright on the baseline pull through a  $\frac{1}{4}$  loop into a vertical up line, followed by a stall turn into a vertical down line. Pull through a  $\frac{1}{4}$  loop to exit upright.

Judging notes.

If the stall turn is between half and 1 wing span then minus 1 point.

If the stall turn is between 1 wing span and a 1.5 wing spans then minus  $\frac{2}{3}$  points.

If the stall turn is between 1.5 wing spans and a 2 wing spans then minus  $\frac{4}{5}$  points.

If the stall turn is greater than 2 wing spans then minus 10 points.

If the aircraft exhibits a pendulum effect after exiting the stall turn then minus 1 point.

Must remain in the Box to avoid deductions.

**C-08 Slow Roll: (K = 3)**

From upright on the baseline perform a slow roll to exit upright on the baseline.

Judging notes.

Constant roll rate.

Roll should take 3 to 5 seconds as a guide

Model should be inverted on centre line.

**C-09 Half Square Loop, half roll on exit: (K = 2)**

From upright on the baseline pull through a  $\frac{1}{4}$  loop into a vertical up line. Pull through a  $\frac{1}{4}$  loop followed by a half roll to exit up right on the top line.

Judging notes.

All radii equal.

There should be a short pause /inverted line between  $\frac{1}{4}$  loop and half roll.

Must remain in the Box to avoid deductions.

**C-10 Two Turn Spin: (K = 3)**

From upright on the top line, on the centre line of the box perform two consecutive spins followed by a vertical down line. At the bottom of the vertical down line, pull through a  $\frac{1}{4}$  loop followed by a well-defined, straight line to exit upright on the baseline.

Judging notes.

Climbing on entry into spin, downgrade 1 point per 15 degrees.

Yawing before entry into spin, downgrade 1 point per 15 degrees.

Snap-roll entry, zero points.

Forced entry, severe downgrade.

Spin under or over rotation, downgrade 1 point per 15 degrees.

**C-11 Landing Sequence (K = 2)**

See separate Take-off and landing document.