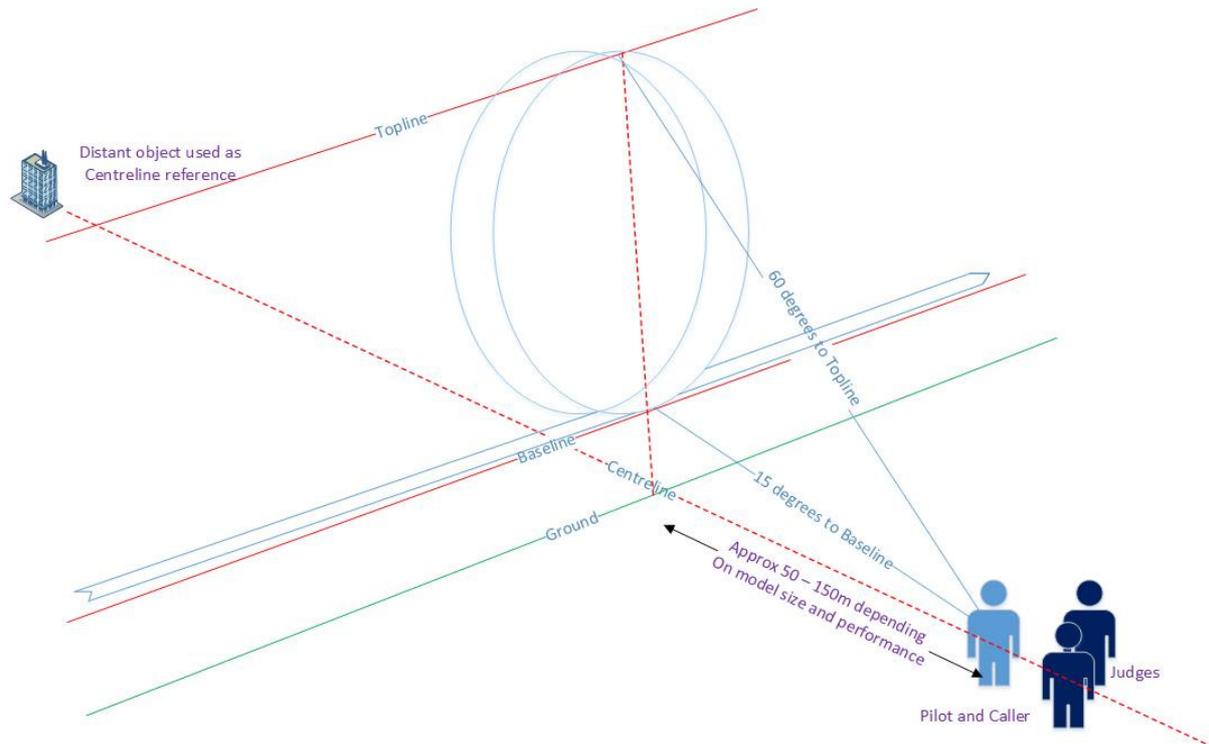


## Pick5 & Pick7 Descriptors

### The Aerobic Area

For clarity, the following describes the Aerobic Area that will be used when judging a UKCAA Aerobatic Event



All dimensions and angles shown in the diagram are approximate and shown for guidance and these can be changed slightly to suit an individual Pilot's preference. However, once the first manoeuvre has completed, the distance out, position of topline and baseline should remain constant for the remainder of the flight.

The Judges will inform the pilot (and caller) of the centerline and the distant reference point.

The Pilot (and caller) should stand immediately in front of the judges so that there is a common centerline.

The roll of the caller is to inform the pilot of the next manoeuvre on the schedule and optionally, (at the pilot's request), provide a countdown to center.

Models should be flown so that the trajectory should follow the shape of the manoeuvre. The model's attitude needs to be adjusted to compensate for wind strength and direction. The exception to this is the Spin manoeuvre which should start on the centerline but will drift during the spin phase due to the wind strength and direction.

Note: It is the pilot's responsibility to provide a completed schedule/score sheet for the judges and calling card for the caller



## Upwind Manoeuvres

### 2 Consecutive Inside Loops

#### **Two Consecutive Inside Loops (U) K2**

##### **Pick 5 & Pick 7**

From upright, (on the baseline), pull 2 consecutive inside loops to exit upright. Both loops shall be round and superimposed.

##### **Downgrades:**

- Wings not level at beginning or end of sequence. Apply “One Point per 15 Degree” Rule.
- Loops not round.
- Loops not superimposed.
- Wings not level during loops.
- Changes in track during loops.
- Exit not at same altitude and track as entry.

### Square Inside Loop

#### **Square Loop (U) K2**

##### **Pick 5 & Pick 7**

The aircraft starts from straight and level flight (on the baseline), and pulls through a  $\frac{1}{4}$  of a loop, continuing on an upward track. After establishing a straight line for a short distance, the aircraft pulls through a further  $\frac{1}{4}$  loop on a further horizontal straight line equal in length to the vertical line. The aircraft then pulls through a further  $\frac{1}{4}$  loop into a vertically downward path for a distance equal to the other straight portions of the manoeuvre. The aircraft pulls through a final  $\frac{1}{4}$  loop back onto the original baseline height. The manoeuvre is positioned equally either side of centre.

##### **Downgrades:**

- Wings not level at beginning or end of sequence. Apply “One Point per 15 Degree” Rule.
- Corner radii not equal.
- Loop not square
- Loop not centred on centerline
- Straight line trajectories not vertical or horizontal.
- Entry and exit not on same altitude

## Triangle Loop

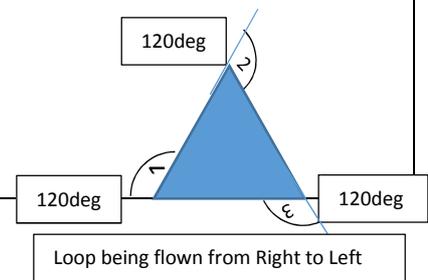
### Triangle Loop (U) K2

#### Pick 7

The aircraft starts from straight and level flight (on the baseline), and pulls through 120 degrees of a loop, continuing on a 60 degree upline track towards the centreline. After establishing a straight line for a short distance, the aircraft pulls through a further 120 degree partial loop (to be inverted at the intersection between the centreline and the topline) to a further 60 degree downline equal in length to the upline. The aircraft then pulls through a further 120 degree loop onto the original baseline height. The manoeuvre is positioned equally either side of the centreline. The internal angles of the triangle are 60 degrees each

#### Downgrades:

- Wings not level at beginning or end of sequence. Apply “One Point per 15 Degree” Rule.
- Corner radii not equal.
- Straight line trajectories not at 60 degrees or horizontal.
- Loop not symmetrical
- Loop not centered on centerline
- Entry and exit not on same altitude



## Avalanche

### Avalanche (U) K3

#### Pick 7

From upright, (on the baseline), fly slightly past center and perform an inside loop. At the apex of the loop, perform a snap roll, then continue with the remaining ½ inside loop. Exit level

#### Downgrades:

- Wings not level at beginning or end of sequence. Apply “One Point per 15 Degree” Rule.
- Loop not round.
- Loop halves not semi circular
- Loop halves of different size
- Wings not level during ½ loops.
- Changes in track during loops.
- Snap roll not a snap – aircraft should be seen to stall – downgrade for barrel or normal roll.
- Manoeuvre not centered
- Exit of snap not horizontal or altitude as entry of the snap
- Exit not at same altitude and track as entry.



## Double Immelman with ½ Rolls

### Double Immelman with half rolls (U) K2

#### Pick 5 & Pick 7

From upright (on the baseline), pull through a 1/2 inside loop, then immediately perform a half roll to level upright flight, hesitate, then push into a 1/2 outside loop to return to the entry altitude, immediately perform a half roll to exit upright.

The horizontal legs must be equal to the diameter of the half loops, thus forming a square encompassed by half loops.

#### Downgrades:

- Wings not level at beginning or end of sequence. Apply “One Point per 15 Degree” Rule.
- Half loops not round with constant and equal radius.
- Half loops not completed exactly above or below point of commencement of half loops.
- Horizontal legs not equal to diameter of half loops.
- Rolls not executed immediately after completion of half loops.
- Roll rates not constant and equal.
- Changes in track during half loop, rolls
- Entry and exit not at same altitude or not level.
- Under or over rotation of prescribed roll elements. Apply “One Point per 15 Degree Rule”.

## Square Loop on a Corner

### Square Loop on Corner (U) K3

#### Pick 7

The aircraft starts from straight and level flight (on the baseline), and pulls through 1/8<sup>th</sup> of a loop, continuing on an upward track, 45 degrees to the horizontal. After establishing a straight line for a short distance, the aircraft pulls through a further ¼ loop followed by a further straight line. The sequence continues until the aircraft pulls back on to the base line. The manoeuvre positioned equal side of center.

#### Downgrades:

- Wings not level at beginning or end of sequence. Apply “One Point per 15 Degree” Rule.
- Corner radii not equal.
- All square lines are equal length
- Straight line paths not at 45 degrees to horizontal or vertical.
- Loop not centred on centerline
- Entry and exit not on same altitude



## Top Hat with Half Rolls up and down

### Top Hat with Half Rolls up and down (U) K3

#### Pick 7

The aircraft starts from straight and level flight (on the baseline), and pulls up to a vertical position prior to the centre line. Halfway up the vertical line perform a half roll. At the top of the line, the model pulls through a quarter of a loop to inverted flight and follows high level inverted straight and level flight, past centre for a distance equal to that prior to centre. The aircraft then pulls through another quarter loop into a vertical downward path. Halfway down the downline, perform another half roll. Just prior to the baseline height, the aircraft pulls into level flight in the same direction as which it started the manoeuvre.

#### Downgrades:

- Wings not level at beginning or end of sequence. Apply "One Point per 15 Degree" Rule.
- Looping radius not constant
- Rolls not central in vertical line
- Change of track during up and down lines
- Manoeuvre not symmetrical either side of center
- Aircraft doesn't finish on same height as entry

## Stall Turn $\frac{1}{4}$ Roll Up and Down

### Stall turn with $\frac{1}{4}$ Roll up and down (U) K3

#### Pick 7

The aircraft starts from straight and level flight (on the baseline), and pulls through  $\frac{1}{4}$  loop to a vertical line on the centre line. Halfway up the vertical line performs a quarter roll (either direction). At the top of the line, the aircraft performs a stall turn in the direction of travel. Halfway down the downline, the aircraft then performs another quarter roll (opposite direction). Just prior to the baseline height, the aircraft pulls into level flight in the same direction as which it started the manoeuvre.

The stall turn may be performed either canopy to judges or wheels to judges.

#### Downgrades:

- Wings not level at beginning or end of sequence. Apply "One Point per 15 Degree" Rule.
- Looping radius not constant
- $\frac{1}{4}$  Rolls not central in vertical line
- Stall turn not stalled, wing over performed instead
- Stall turn forced
- Change of track during up and down lines
- Manoeuvre not symmetrical either side of center
- Aircraft doesn't finish on same height as entry



## 2 or 3 Turn Spin

### Two Turn Spin (U) K3 Pick 5

### Three Turn Spin (U) K3 Pick 7

From upright on the topline, on the center line of the box perform (two) / (three) 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.

#### Downgrades:

- Wings not level at beginning or end of sequence. Apply "One Point per 15 Degree" Rule.
- Climbing on entry into spin, downgrade 1 point per 15 degrees.
- Yawing before entry into spin, downgrade 1 point per 15 degrees.
- Snap or forced entry, zero points.
- Spin under or over rotation, downgrade 1 point per 15 degrees.

## Cuban 8 No rolls

### Cuban 8 with no Rolls (U) K3

#### Pick 5

From upright on the baseline fly past center and pull through  $\frac{5}{8}$  of an inside loop into a  $45^\circ$  down line. Perform a short straight flight in  $45^\circ$  down line. Push through  $\frac{3}{4}$  of an outside loop into a  $45^\circ$  down line. Perform a short straight flight in  $45^\circ$  down line. Pull through a  $\frac{1}{8}$  loop to exit upright on the baseline.

#### Downgrades:

- Wings not level at beginning or end of roll sequence. Apply "One Point per 15 Degree" Rule.
- Crossover lines not equal
- Crossover lines not centred at point of crossover
- Manoeuvre not symmetrical
- Manoeuvre not centered
- Loop radii not equal.



## Pick5 & Pick7 Descriptors

### Down Wind Manoeuvres

#### 2 Consecutive Outside Loops from top

##### **Two Outside Loops from Top (D) (K2)**

###### **Pick 5 & Pick 7**

Aircraft enters from the topline and pushes down to execute an outside loop, performs 1 further outside loop on the same track as the first, then continuing in level flight at same height as entry

###### **Downgrades:**

- Wings not level at beginning or end of sequence. Apply "One Point per 15 Degree" Rule.
- Loops not round
- Changes in heading during loops
- Wings not level during loops
- Loops not centred on centerline
- Aircraft does not enter and exit manoeuvre at same height
- Exit not same altitude and heading as entry

#### Straight Inverted

##### **Straight Inverted Flight (D) K2**

###### **Pick 5 and Pick 7**

On the baseline, the aircraft performs a half roll to inverted and maintains inverted horizontal flight for between 4 and 6 seconds. The aircraft then performs a further half roll back to upright. The manoeuvre is positioned equally either side of centre.

###### **Downgrades:**

- Wings not level at beginning or end of sequence. Apply "One Point per 15 Degree" Rule
- Manoeuvre not equal either side of centre
- Roll rates not equal
- Rolls not 180 degrees
- Manoeuvre less than 4 seconds or more than 6 seconds



## 2 Consecutive Rolls

### 2 Consecutive Rolls (D) K2

#### Pick 5 & Pick 7

From upright, (on the baseline), roll at a uniform rate through 2 complete revolutions in either direction to exit upright. Center is that point when the aircraft is upright between the rolls.

#### Downgrades:

- Wings not level at beginning or end of roll sequence. Apply "One Point per 15 Degree" Rule.
- Changes in track during rolls.
- Rolls not centred on centerline
- Changes in altitude during rolls.
- Changes in Roll rate during rolls.

## Slow Roll

### Slow Roll (D) K3

#### Pick 5 and Pick 7

From upright, (on the baseline), perform a full roll of at least 4 seconds nor exceeding 6 seconds, exit upright.

Center is middle of inverted flight.

#### Downgrades:

- Wings not level at beginning or end of roll sequence. Apply "One Point per 15 Degree" Rule.
- Changes in track
- Changes in altitude.
- Roll rate not constant.
- Roll not centered
- Aircraft does not roll exactly 360 degrees. Apply "One Point per 15 Degree Rule".
- Duration of roll less than 4 seconds or more than 6 seconds.



## 4 Point Roll

### 4 Point Roll (D) K3

#### Pick 7

From upright, (on the baseline),  $\frac{1}{4}$  roll to knife edge, pause  $\frac{1}{2}$  second,  $\frac{1}{4}$  roll to inverted, pause  $\frac{1}{2}$  second,  $\frac{1}{4}$  roll (in same direction) to knife edge, pause  $\frac{1}{2}$  second,  $\frac{1}{4}$  roll to upright. Exit upright

Center is middle of inverted flight.

#### Downgrades:

- Wings not level at beginning or end of roll sequence. Apply “One Point per 15 Degree” Rule.
- Changes in track
- Changes in altitude.
- Roll rate not constant.
- Aircraft does not pause/hesitate at each of 3 points
- Pause lengths not  $\frac{1}{2}$  second
- Aircraft does not roll exactly 360 degrees. Apply “One Point per 15 Degree Rule”.

## Cuban 8 with $\frac{1}{2}$ Rolls

### Cuban 8 with $\frac{1}{2}$ Rolls (D) K3

#### Pick 5 and Pick 7

From upright (on the baseline), fly past center and pull through  $\frac{5}{8}$  of an inside loop into a  $45^\circ$  down line. Perform a half roll in the center of the  $45^\circ$  down line. Pull through  $\frac{3}{4}$  of an inside loop into a  $45^\circ$  down line. Perform a half roll in the center of the  $45^\circ$  down line. Pull through a  $\frac{1}{8}$  loop to exit upright on the baseline.

#### Downgrades:

- Wings not level at beginning or end of roll sequence. Apply “One Point per 15 Degree” Rule.
- Half rolls not performed on centerline and in middle of  $45^\circ$  lines.
- Manoeuvre not centred
- Loops not equal size or elongated
- Model changes track during manoeuvre
- Loop radii not equal.

## Change Log

|            |  |              |
|------------|--|--------------|
| Version 1  | Initial Release                          | October 2018 |
| Version 1a | Correction (typo) to Cuban 8 description | March 2019   |