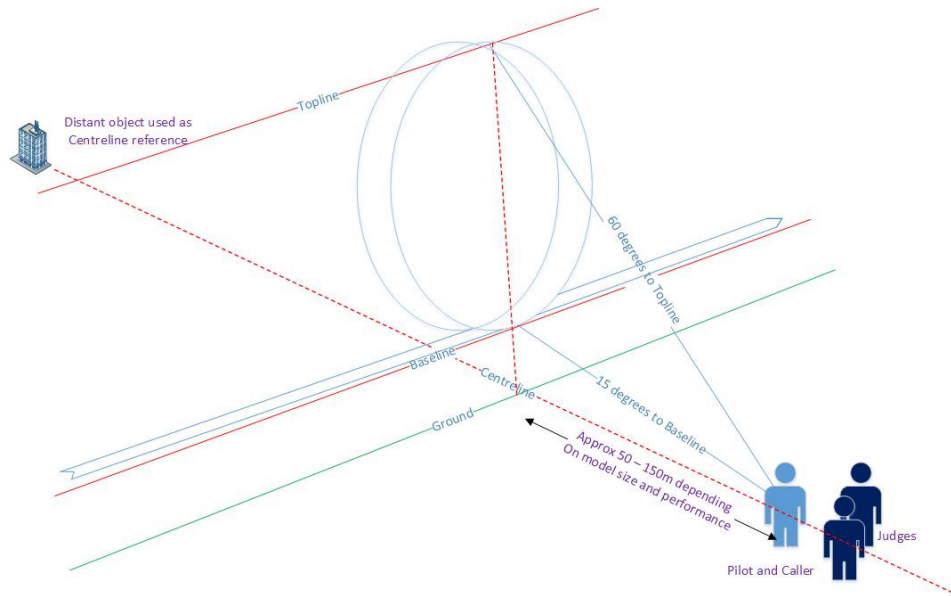


UKCAA 2024-25 Rules

1 The Aerobic Area

For clarity, the following describes the Aerobic Area that will be used when judging a UKCAA Aerobic 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 and height of topline and baseline should remain constant for the remainder of the flight.

The Judges will inform the pilot (and caller) of the centreline and the distant reference point before the flight commences.

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

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 centre or other significant points on the selected manoeuvre.

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 centreline 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.



Note that the ribbon diagrams have been discontinued and replaced with Aresti Figures. A students guide to Aresti Figures can be found here:

<https://www.sunshinecoastflyingschool.com.au/wp-content/uploads/2018/11/Student-Notes-Common-Aerobatic-Figures.pdf>

2 Model Specification

UKCAA contests are for F3A Aerobatic Aircraft designed and published prior to the 1st of January 1996.

The maximum dry mass of the model is 5kg. If the model is electric powered, then this includes the mass of the battery.

Designs may be scaled up or down from the original as the pilot wishes.

Construction methods must be sympathetic to the construction methods of the era. Materials may be substituted, for example a glass fibre fuselage used instead of a built up wooden fuselage or a built up wing used instead of a foam wing (or vice versa). Local reinforcement of high wear areas using modern materials such as Kevlar or Carbon Fibre is permitted.

The outline plan and side view of the aircraft must be accurate to the original plan with only minor changes permitted such as a change in nose length or shape to accommodate different power plants. There should be no change to the wing planform or fin shape. The relationships between the flying surfaces must match those of the original plan. (For example, no change in relative moment arm distance).

Electric conversions from IC are encouraged. Maximum battery voltage is 6S or equivalent. There are no limits on capacity or 'C' rating.

Regarding IC engine sizes, the primary ethos of the association is to fly these historic designs. With so many more modern power plants available selection of sufficiently proportioned power output is encouraged. Models considered 'overpowered' will be unacceptable for competition entry. However, there is an upper limit of 20cc swept volume at UKCAA events regardless of whether a model is used in competition or not.

Models must comply with the 82dBa at 7m noise limit or published site rules if they differ.



3 Manoeuvre Downgrades (General)

This section covers the typical downgrades that can be applied to each manoeuvre and applies to both Pick5 and Pick7. Not all are relevant to all manoeuvres.

1. Failure to maintain correct track in vertical, diagonal, and horizontal lines.
2. Loops are not round.
3. Corner radii are not equal.
4. Rolls are not axial and where appropriate not at a constant rate.
5. Under or over rotation of prescribed roll elements. Apply "One Point per 15 Degree Rule".
6. Top line and base line heights are inconsistent across several manoeuvres.
7. Wings not straight and level at start and end of manoeuvre - Downgrade One Point per 15 Degrees.
8. Change in track or other tracking errors during manoeuvre.
9. Manoeuvre not centred correctly.
10. Aircraft does not finish on same height as entry.

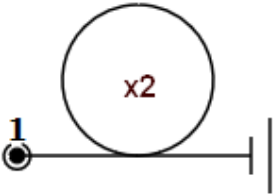
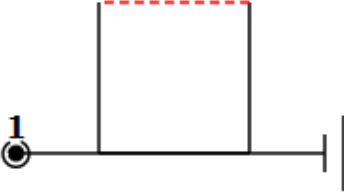
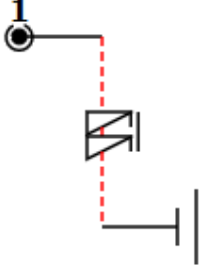
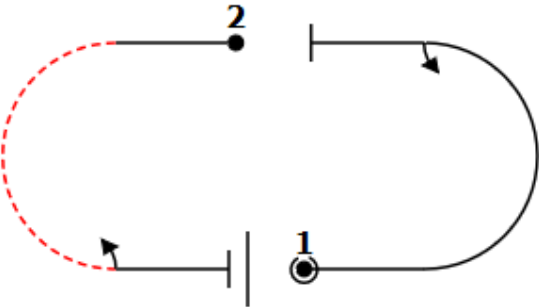
Other downgrades are listed within the manoeuvre descriptors.

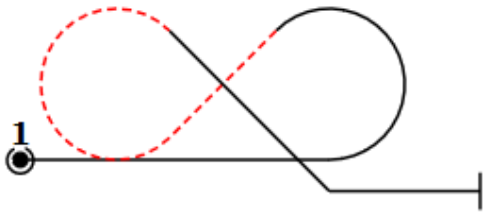
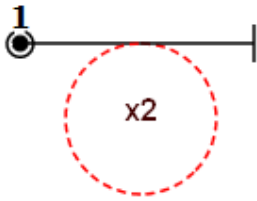
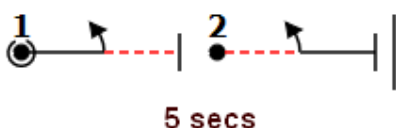

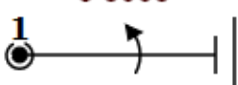
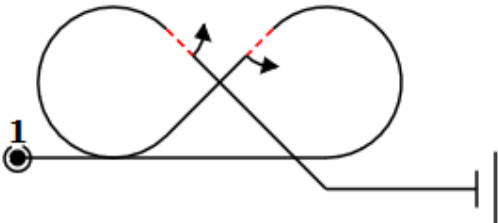
4 UKCAA Pick5 Rules

4.1 Introduction

1. The Pilot must select a maximum of 3 manoeuvres to be performed Upwind and 2 manoeuvres to be performed Downwind.
2. The Pilot will produce a personalised Schedule listing the selected manoeuvres in the order UDUDU.
3. These manoeuvres must be 2 of with a K factor of 2 and 3 of with a K factor of 3.
4. The manoeuvres must be flown in the order listed on the pilots Schedule.
5. The Pilot must indicate the start and end of a manoeuvre by calling "Start" then "End" respectively.
6. There are no judged turn-around manoeuvres however Pilots are encouraged to select a suitable turn-around to transition the model smoothly to the next listed manoeuvre.

4.2 Manoeuvres List - Pick 5

| Name | K Factor | Aresti Image |
|---|----------|---|
| 2 Consecutive Inside Loops | 2 |  |
| Square Inside Loop | 2 |  |
| 2 Turn Spin | 3 |  |
| Double Immelmann with $\frac{1}{2}$ rolls | 3 |  <p>Note: Half rolls should be performed immediately after the half loop/bunt</p> |

| Name | K Factor | Aresti Image |
|--------------------------------------|----------|--|
| Cuban 8 No rolls | 3 |  |
| 2 Consecutive Outside Loops from top | 2 |  |
| Straight Inverted | 2 |  |
| 2 Consecutive Rolls | 3 |  |
| Slow Roll | 3 |  |
| Cuban 8 with 1/2 Rolls | 3 |  |

5 Pick 5 Manoeuvre Descriptors

Two Consecutive Inside Loops K2

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

Additional Downgrades:

- Loops not superimposed.
- Wings not level during loops.

Square Loop K2

The aircraft starts from straight and level flight (on the baseline), and pulls through a $\frac{1}{4}$ of a loop, continuing 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.

Additional Downgrades:

- Loop not square

Double Immelmann with half rolls K3

From upright (on the baseline), pull through a $\frac{1}{2}$ inside loop, then immediately perform a half roll to level upright flight, hesitate, then push into a $\frac{1}{2}$ 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.

Additional Downgrades:

- 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.
- Half Rolls not executed immediately after completion of half loops.
- Manoeuvre not encompassed within a virtual "square".

Two Turn Spin K3

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

Additional Downgrades:

- 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 with no Rolls K3

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

Additional Downgrades:

- Crossover lines not equal.
- Crossover lines not centred at point of crossover.
- Manoeuvre not symmetrical.

Two Outside Loops from Top (K2)

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

Additional Downgrades:

- Wings not level during loops.
- Loops not centred on centreline.
- Loops not superimposed.

Straight Inverted Flight K2

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 in the opposite direction. The manoeuvre is positioned equally either side of centre.

Additional Downgrades:

- 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.
- Rolls not in opposite direction.

2 Consecutive Rolls K2

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.

Additional Downgrades:

{None}

Slow Roll K3

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.

Additional Downgrades:

- Aircraft does not roll exactly 360 degrees. Downgrade One Point per 15 Degrees.
- Duration of roll less than 4 seconds or more than 6 seconds.



Cuban 8 with ½ Rolls K3

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

Additional Downgrades:

- Half rolls not performed on centreline and in middle of 45° lines.
- Lines not 45 degrees.
- Loops not equal size or elongated.
- Loop radii not equal.



5.1 PICK5 SCHEDULE JUDGING SHEET

PICK5 SCHEDULE JUDGING SHEET

Pilot

Judge

Location

Date

| | | | Flight 1 | | Flight 2 | |
|----------|-----------------------|---|-----------|----------------------|----------|----------------------|
| U/D | 2024 Schedule | K | Score /10 | Total (Score x K) | Score/10 | Total (Score x K) |
| | Take off (not scored) | | | | | |
| Upwind | | | | | | |
| Downwind | | | | | | |
| Upwind | | | | | | |
| Downwind | | | | | | |
| Upwind | | | | | | |
| | Landing (not scored) | | | | | |
| | Total | | | | | |

Note: Select 3 upwind and 2 downwind manoeuvres from the Pick 5 manoeuvres listed in the UKCAA 2024-25 Rules



5.2 PICK5 SCHEDULE JUDGING SHEET (Default/Example)

Pilot

Judge

Location

Date

| | | | Flight 1 | | Flight 2 | |
|----------|--------------------------|---|-----------|----------------------|----------|----------------------|
| U/D | 2024 Schedule | K | Score /10 | Total (Score x K) | Score/10 | Total (Score x K) |
| | Take off (not scored) | | | | | |
| Upwind | 2 Inside Loops | 2 | | | | |
| Downwind | 2 Outside Loops from top | 2 | | | | |
| Upwind | Cuban 8 No rolls | 3 | | | | |
| Downwind | Slow Roll | 3 | | | | |
| Upwind | 2 turn Spin | 3 | | | | |
| | Landing (not scored) | | | | | |
| Total | | | | | | |

Note: Select 3 upwind and 2 downwind manoeuvres from the Pick 5 manoeuvres listed in the UKCAA 2024-25 Rules

6 UKCAA Pick 7 Rules

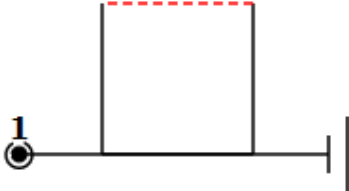
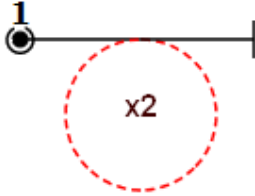
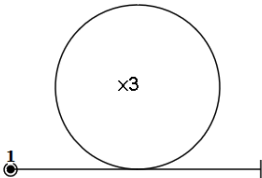
6.1 Introduction

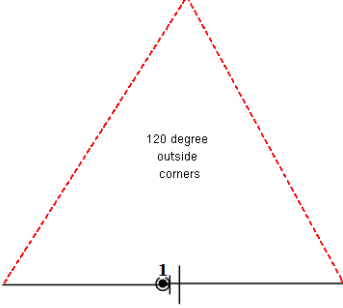


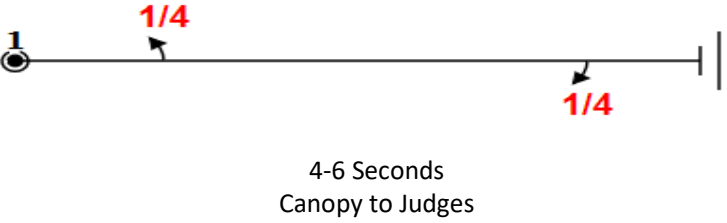
The pilot selects 6 manoeuvres from the list below which are flown in an Upwind/Downwind sequence, finishing on a mandatory 3 turn spin.

1. Select **6 manoeuvres** from the tables below, 3 to be performed upwind, 3 to be performed downwind, finish upwind on a 3 turn spin.
2. The 6 manoeuvres consist of a minimum of 2 manoeuvres from Group 2, up to 4 manoeuvres from Group 3 and a maximum of 1 Manoeuvre from Group 4. The sequence ends on a 3 turn spin. The manoeuvres can be flown in any order with the constraints of (1) above. The group number defines the K (difficulty) multiplier. For example, a novice pilot may select only Group 2 manoeuvres ending on a spin with a total K factor of 14, or an expert pilot may select 2 manoeuvres from Group 2 (the minimum), 3 manoeuvres from Group 3 and 1 manoeuvre from Group 4 (the maximum), ending on a spin with a total K factor of 19. Alternatively, a pilot may exchange a Group 4 manoeuvre for a Group 3 manoeuvre ending on a spin for a total K factor of 18.
3. Manoeuvres can be flown in any order with the constraints set in 1 above.
4. Pilot or caller must call the name of the manoeuvre to be flown.
5. Pilot must call 'Start' and 'End' at the beginning and end of each manoeuvre respectively.

6.2 Manoeuvres List - Pick 7 Group 2 Manoeuvres

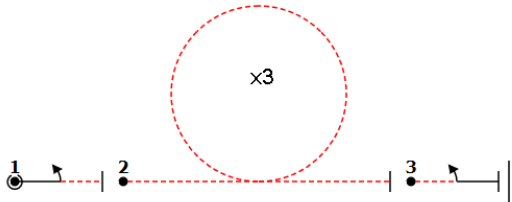
Group 2 (K = 2)

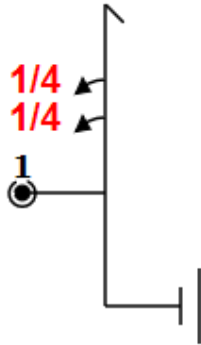
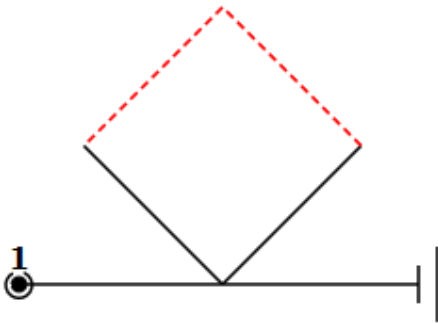

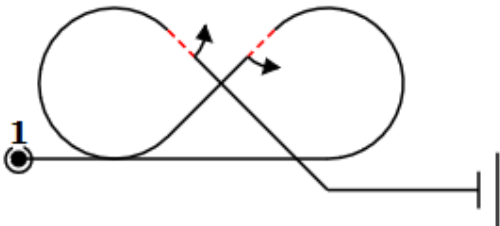
| | |
|--|--|
| Square Inside Loop |  |
| Two Consecutive Outside loops from top |  |
| Three Consecutive Inside Loops |  |

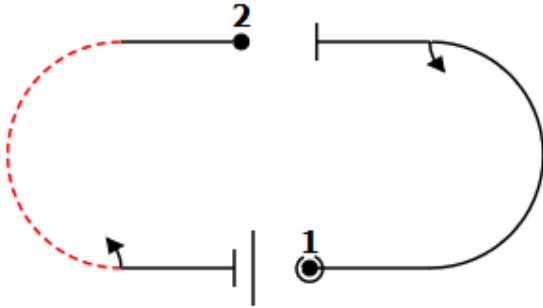
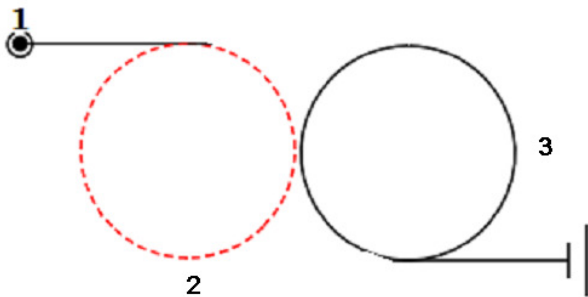
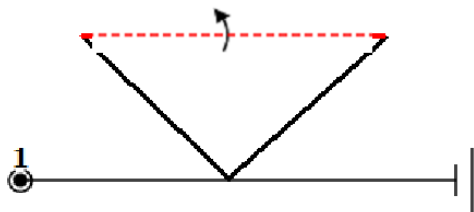
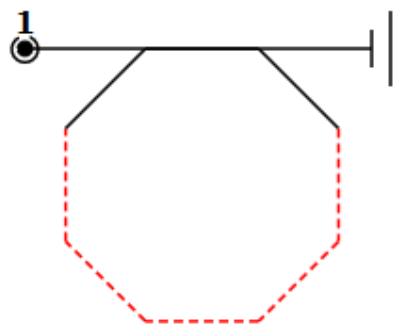
| | |
|---|---|
| Equilateral Triangle Loop – Base at bottom |  |
| Slow Roll |  |
| Three Horizontal Rolls |  |
| 5 Seconds Knife Edge |  |


6.3 Manoeuvres List - Pick 7 Group 3 Manoeuvres

Group 3 (K=3)

| | |
|---|--|
| Three Reverse Outside Loops (from base) |  |
|---|--|

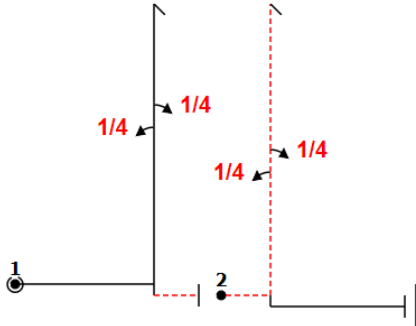
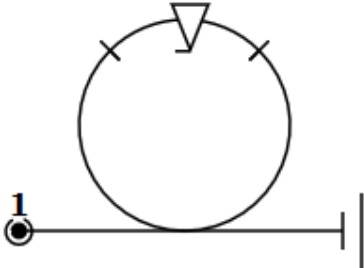
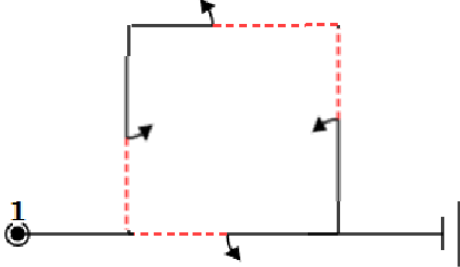
| | |
|---|--|
| <p>Stall Turn, 1/4 roll up and down</p> |  |
| <p>Square Loop on a Corner</p> |  |
| <p>Four Point Roll</p> |  |
| <p>Cuban Eight with 1/2 rolls</p> |  <p style="text-align: center;">1/2 rolls at crossover</p> |

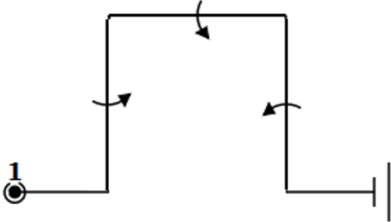
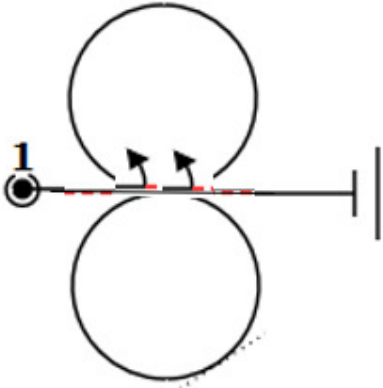
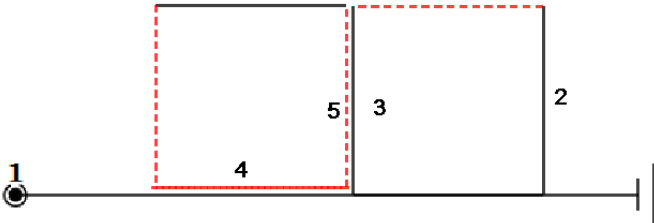
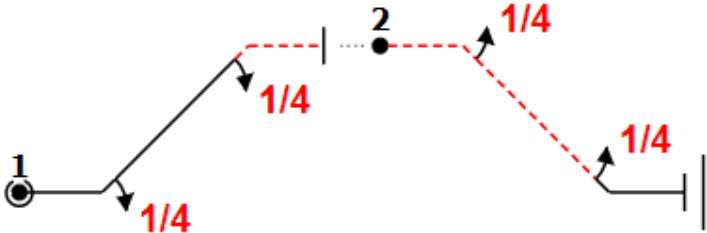
| | |
|--|---|
| <p>Double Immelmann with ½ rolls</p> |  <p>Note: Half rolls should be performed immediately after the half loop/bunt</p> |
| <p>Running Eight</p> |  |
| <p>Right Angle Triangle Rolling Loop</p> |  |
| <p>6 sided outside loop</p> |  |

| | |
|----------------------------------|--|
| <p>Knife Edge with half roll</p> |  |
|----------------------------------|--|

6.4 Manoeuvres List - Pick 7 Group 4 Manoeuvres

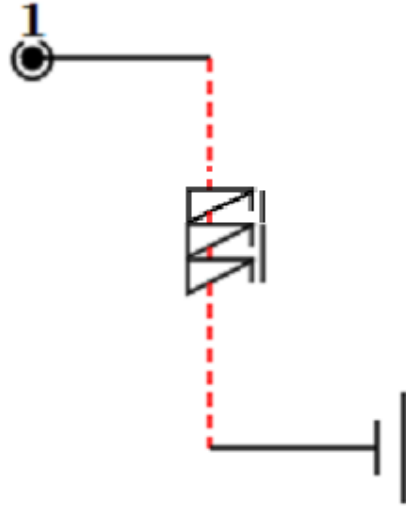
Group 4 (K=4)

| | |
|--------------------------------------|---|
| <p>Figure M with Quarter rolls</p> |  <p>$\frac{1}{2}$ inverted loop at point 2 to link stall turns</p> |
| <p>Avalanche</p> |  <p>Note: Snap can be positive or negative</p> |
| <p>Square Loop with 4 half rolls</p> |  |

| | |
|---|---|
| <p>Top Hat with Full Rolls Up, Top and Down</p> |  |
| <p>Rolling Eight</p> |  <p>Start from the Top line. Half rolls performed in the horizontal plane at crossover</p> |
| <p>Square Horizontal Eight</p> |  |
| <p>Cobra Roll</p> |  <p>Quarter Inverted loop at point 2 linking 2 halves</p> |

Finish

3 Turn Spin



7 Pick 7 Manoeuvre Descriptors

7.1 Group 2 Manoeuvres

Square Inside Loop

Group 2 (K=2)

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.

Additional Downgrades:

- Loop not square

Three Consecutive Inside Loops

Group 2 (K=2)

From upright, (on the baseline), pull 3 consecutive inside loops to exit upright. Loops shall be round and superimposed.

Additional Downgrades:

- Loops not superimposed.
- Wings not level during loops.

Slow Roll

Group 2 (K=2)

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

Centre is middle of inverted flight.

Additional Downgrades:

- Duration of roll less than 4 seconds or more than 6 seconds.

Equilateral Triangle Loop

Group 2 (K=2)

The aircraft starts from straight and level flight (on the baseline), flies past centre and pulls through 120 degrees of a loop, continues on a 60 degree upline track towards the centreline and top line. 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 top line) to a further 60 degree downline equal in length to the upline. The aircraft then pulls through a further 120 degree partial 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. All line lengths are equal.

Downgrades:

- Corner radii not equal.
- Straight line trajectories not at 60 degrees or horizontal.
- Loop not symmetrical

Two Outside Loops from Top

Group 2 (K=2)

Aircraft enters from the top line 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

Additional Downgrades:

- Wings not level during loops
- Loops not superimposed

Three Consecutive Rolls

Group 2 (K=2)

From upright, (on the baseline), roll at a uniform rate through 3 complete revolutions in either direction to exit upright. Centre is that point when the aircraft is inverted on the second roll between the rolls.

Additional Downgrades:

{None}

Five Seconds Knife Edge

Group 2 (K=2)

From Straight and Level on the Baseline, quarter roll (canopy to judges) to Knife Edge. Hold Knife Edge for 4-6 seconds. Quarter roll in opposite direction to exit straight and level.

Additional Downgrades:

- Knife edge flown with wings not vertical, downgrade 2 points per 10 degrees.
- Model does not track straight.
- Canopy not to judges.
- Quarter rolls not of equal duration.
- Quarter rolls not a quarter.

7.2 Group 3 Manoeuvres

Three Reverse Outside Loops from Base

Group 3 (K=3)

Aircraft enters from the baseline, performs half roll to inverted before the centreline then immediately pushes down to execute an outside loop (starting on the centreline), performs 2 further outside loop on the same track as the first, then immediately performs a further half roll and exits in level flight at same height as entry

Additional Downgrades:

- Wings not level during loops
- Half rolls are of different duration.
- Half rolls are not performed immediately before or after the loops
- Loops not superimposed.

Stall turn with Quarter Roll up and down.

Group 3 (K=3)

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 to present canopy to judges. 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, exiting on the baseline.

Additional Downgrades:

- Stall turn not stalled, wing-over performed instead.
- Stall turn forced (e.g. Rudder applied before the stall)
- Loop radius not constant
- $\frac{1}{4}$ Rolls not central in vertical line

Rolling Eight

Group 3 (K=3)

The aircraft starts from straight and level flight (on the top line) and performs a single inside loop. At the exit of the loop on the centreline, the aircraft performs a half roll to inverted and then performs a second inside loop with nadir on the baseline. At the exit of the loop on the centreline, the aircraft performs a half roll to upright and exits straight and level.

Additional Downgrades:

- Manoeuvre not symmetrical either side of centre or top line
- $\frac{1}{2}$ rolls are of different duration
- $\frac{1}{2}$ rolls are not centred
- Loops not the same size
- Lower loop nadir not on the baseline

Square Loop on Corner

Group 3 (K=3)

The aircraft starts from straight and level flight (on the baseline), and pulls through $1/8^{\text{th}}$ 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 $1/4$ loop followed by a further straight line. The sequence of $1/4$ loop and straight lines continues until the aircraft pulls back on to the base line. The manoeuvre is positioned equal side of centre.

Additional Downgrades:

- All square lines are not of equal length.
- Straight line paths not at 45 degrees to horizontal or vertical.

4 Point Roll

Group 3 (K=3)

From upright, (on the baseline), $1/4$ roll to knife edge, pause $1/2$ second, $1/4$ roll to inverted, pause $1/2$ second, $1/4$ roll (in same direction) to knife edge, pause $1/2$ second, $1/4$ roll to upright. Exit upright. Note that this manoeuvre cannot be selected in conjunction with the 8 point Roll.

Centre is middle of inverted flight.

Additional Downgrades:

- Aircraft does not pause/hesitate at each of 3 points.
- Pause lengths not $1/2$ second.

Cuban 8 with Half Rolls

Group 3 (K=3)

From upright (on the baseline), fly past centre and pull through $5/8$ of an inside loop into a 45° down line. Perform a half roll in the centre of the 45° down line. Pull through $3/4$ of an inside loop into a 45° down line. Perform a half roll in the centre of the 45° down line. Pull through a $1/8$ loop to exit upright on the baseline.

Additional Downgrades:

- Half rolls not performed on centreline and in middle of 45° lines.
- Loops not equal size or elongated.

Double Immelmann with half rolls

Group 3 (K=3)

From upright (on the baseline), fly through centre, pull through a half inside loop, then immediately perform a half roll to level upright flight, hesitate, then push into a half 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.

Additional Downgrades:

- 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.
- $\frac{1}{2}$ Rolls not executed immediately after completion of half loops.
- Manoeuvre not encompassed within a square.

Running Eight

Group 3 (K=3)

From the topline, perform one and a quarter outside loop immediately followed by a one and a quarter inside loop, exiting on the baseline. Crossover is on the vertical downline following the one and a quarter outside loop.

Additional Downgrades:

- None

Square Horizontal Eight

Group 3 (K=3)

From the baseline, pass through the centreline and perform a square inside loop with the upper edge on the topline. On the downline, push into a square outside loop, the same size as the inside loop. On the downline, pull straight level and exit on the baseline. The crossover is on the centreline.

Additional Downgrades:

- Loops not square
- Radii not equal
- Not centred

Right Angle Triangle Rolling Loop

Group 3 (K=3)

From the baseline, at the centreline, pull up at 45 degrees. At the topline, pull up 135 degrees to inverted straight and level. At the centreline perform a full roll, exiting inverted. Pull 135 degrees to a descent to baseline. At the centre line, pull 45 degrees, exiting straight and level.

Additional Downgrades:

- Incorrect angles for climb and descent.
- Manoeuvre not centred.
- Roll not centred.

Six sided Outside Loop

Group 3 (K=3)

From the topline, push down to 45 degrees decent, pause, push down 45 degrees to vertical, pause, push down 45 degrees inverted decent, pause push down 45 degrees to straight and level inverted on the baseline, pause, push down to 45 degrees inverted climb, pause, push down to vertical climb, pause, push down to 45 degrees climb, pause, push down to straight and level on the topline. Exit on the topline.

Additional Downgrades:

- Incorrect angles for climb and descent.
- Manoeuvre not centred.

Knife Edge with Half Roll

Group 3 (K=3)

From the baseline, straight and level. Quarter roll to Knife Edge – canopy to judges, hold 2 seconds, perform half roll to wheels to judges, hold knife edge for 2 seconds, quarter roll to straight and level, exit.

Additional Downgrades:

- Knife Edge not 2 seconds.
- Knife Edge not vertical (deduction, 2 points per 10 degrees).
- Half roll not centred.

7.3 Group 4 Manoeuvres

Figure M with half rolls.

Group 4 (K=4)

From upright (on the baseline), (before centre), pull through a quarter inside loop to vertical, hesitate, perform a quarter roll so canopy faces judges, hesitate, then stall turn on the top line. On the descent, hesitate, perform a quarter roll at the same height and direction as the ascending quarter roll, hesitate, push into a 1/2 outside loop to vertical, hesitate, perform a quarter roll to wheels face judges, hesitate, then stall turn on the top line in the opposite direction to the first stall turn. On the descent, hesitate, perform a quarter roll at the same height as the ascending quarter roll, hesitate and pull a quarter loop to exit upright on the baseline.

The vertical uplines and downlines must be of equal lengths and the half rolls centred between the baseline and the top line.

Additional Downgrades:

- Quarter loops and outside half loop not round with inconsistent and/or unequal radii.
- Vertical legs not equal length or tracking not vertical.
- Quarter Rolls not centred on the upline or downline.
- Stall turn not stalled, wing over performed instead.
- Stall turn forced – model not vertical at start of stall turn.
- Tail wagging on the downline
- Roll rates not constant and/or equal.

Avalanche.

Group 4 (K=4)

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

Additional Downgrades:

- 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 must be seen to stall – score zero for flick, barrel or normal roll.

Square Loop with 4 half rolls.

Group 4 (K=4)

From upright, (on the baseline), at centre, pause, perform a quarter inside loop to vertical. Pause, perform a half roll, pause perform a quarter outside loop to the top line. Pause, perform a half roll, pause perform a quarter inside loop to the downline. Pause, perform a half roll, pause perform a quarter outside loop to the baseline, pause perform a half roll. Exit level.

Additional Downgrades:

- Loop quarters not round.
- Loop quarters of different size.
- Rolls not at same rate of rotation.
- Rolls not centred correctly.

Top Hat with Full Rolls Up, Top and Down.

Group 4 (K=4)

The aircraft starts from straight and level flight (on the baseline) and perform a quarter inside loop to a vertical line prior to the centre line. On the vertical line performs a 360 degree roll centred midway between the top line and base line. At the top of the line, the model pushes through a quarter of an outside loop to level flight on the top line, pauses, performs a 360 degree roll centred on the centre line, and follows high level straight and level flight for a distance equal to that prior to centre. The aircraft then pushes through another quarter outside loop into a vertical downward path. Halfway down the downline, perform another 360 degree roll. Just prior to the baseline height, the aircraft performs a quarter inside loop into level flight in the same direction as which it started the manoeuvre.

Additional Downgrades:

- All straight legs not same length thus not forming a square.
- Rolls not centred in the vertical lines or the top line.
- Rolls are at a different rate.

Cobra Roll

Group 4 (K=4)

From the baseline, pull up to 45 degrees, pause, then quarter roll, pause, quarter roll to inverted then pull quarter loop to 45 degree descent, pause, quarter roll, pause, then quarter roll to upright. Pull up 45 degrees and exit on the baseline straight and level.

Additional Downgrades:

- Climb or Descent not at 45 degrees.
- Knife edge not centred in up or down lines.
- Quarter loop not centred.
- Quarter loop not on top line.

7.4 Mandatory Finish Manoeuvre

Three Turn Spin (K=2)

From upright on the topline, on the center line of the box stall the aircraft and perform three consecutive spins followed by a short vertical down line to the baseline. 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:

- 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. The aircraft must stall.
- Spin under or over rotation, downgrade 1 point per 15 degrees.



8 PICK7 SCHEDULE JUDGING SHEET Pro-forma

PICK7 SCHEDULE JUDGING SHEET

Pilot

Judge

Location

Date

| | | | Flight 1 | | Flight 2 | |
|----------|-----------------------|---|-----------|--------------|----------|--------------|
| U/D | 2024 Schedule | K | Score /10 | Score * K | Score/10 | Score * K |
| | Take off (not scored) | | | | | |
| Upwind | | | | | | |
| Downwind | | | | | | |
| Upwind | | | | | | |
| Downwind | | | | | | |
| Upwind | | | | | | |
| Downwind | | | | | | |
| Upwind | 3 Turn Spin | 2 | | | | |
| | Landing (not scored) | | | | | |
| | Total | | | | | |

Note: Manoeuvres must be selected from the 2024-25 Pick 7 rules document and entered (with Group K factor) in the Schedule. Ensure that the correct mix of Group manoeuvres and flight direction has been used.