

Expert Class Manoeuvres - 2019

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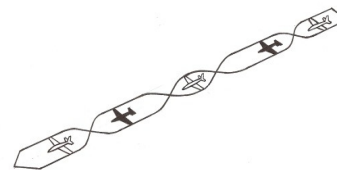
Abbreviations

1. **S & L:** straight and level

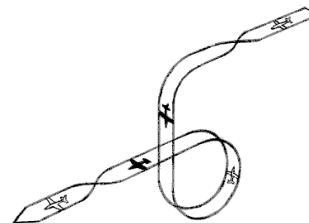
List A

1. **Alternating Roll.** The model flies S & L then performs a $\frac{1}{2}$ roll to inverted, hesitates then performs a full 360° roll in the opposite direction back to inverted, hesitates and then performs a $\frac{1}{2}$ roll in the original direction back to wings level and upright and exits flying S & L. Half way through the 360° roll must be on the centre line.

K12



2. **Downward Six.** Flying S & L near the top of the box, halfway along the top leg, $\frac{1}{2}$ roll to inverted. At the end



of the leg, pull to a vertical downline on the centre line. Before reaching the bottom of the box, pull $\frac{3}{4}$ of a loop exiting inverted. After crossing the centreline, $\frac{1}{2}$ roll to upright and finish S & L. **Note:** The top radius must be the same radius as the $\frac{3}{4}$ loop.

K12

3. **Slow Roll.** The model flies S & L, performs one slow roll then flies S & L. The roll should be at a uniform rate and should take approximately five seconds. **Note:** A significantly faster roll should be downgraded proportionately.

K12

4. **Four Point Roll.** The model flies S & L, performs a $\frac{1}{4}$ roll to a knife-edge attitude, hesitates briefly before repeating $\frac{1}{4}$ rolls and hesitations back to a wings-level attitude, then flies S & L.

K13

5. **Ching - Ching - Chong - Chong.** The model flies S & L then performs two points of a four point roll with hesitations at 90° and 180° , then rolls in the opposite direction to perform another two points of a four point roll with a hesitation at 90° to bring the model back to the upright position then flies S & L.

K14

6. **Four Point TOSS Roll.** The model flies S & L then performs two points of a four point roll, on the centre line the model performs an outside loop followed by the remaining two points of the four point roll. Model exits flying S & L.

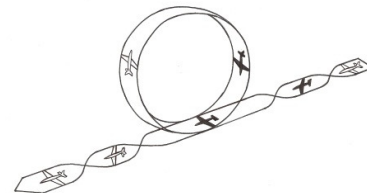
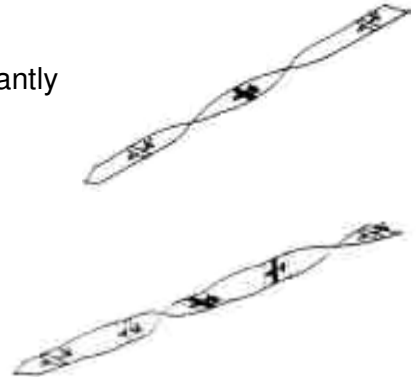
K14

7. **Two Opposite Rolls.** Model flies S & L then performs one complete roll followed by a second complete roll in the opposite direction without hesitation between the two rolls. The centre of the manoeuvre is between the two rolls with the model in the upright position.

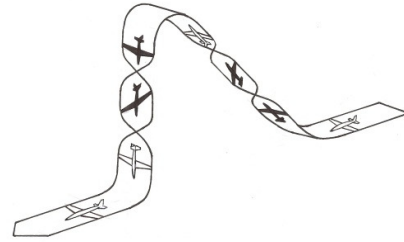
K14

8. **Figure M.** The model flies S & L, performs a $\frac{1}{4}$ inside loop, continues to fly vertically upwards for a short distance, yaws into wind through 180° (stall turn), flies vertically downwards for a short distance, performs $\frac{1}{2}$ outside loop, continues to fly vertically upward for a short time, yaws into wind through 180° (stall turn), flies vertically downward for a short distance, performs $\frac{1}{4}$ inside loop, then flies S & L at the same altitude and heading as the start of the manoeuvre. **Note:** A score of zero should be awarded if, in either stall turn, the model falls more forward or backward than sideways.

K15

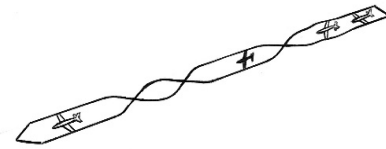


- 9. Sharks Tooth.** The model flies S & L then pulls to a 45° upline. Half way to the top the model performs two points of a four-point roll. At the top of the 45° line, pull a tight radius (as on a square loop) to a vertical downline which must be on the centreline. Half way down the model must perform two points of a four-point roll and then is pulled to wings level and upright on the base line. Model finishes by flying S & L.



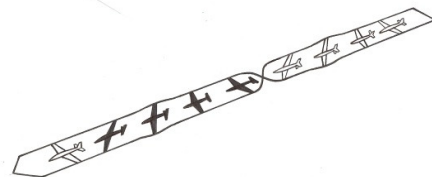
K15

- 10. Damian Roll.** The model flies S & L, performs a 1/4 roll to knife-edge attitude, hesitates briefly before performing a 1/2 roll in the opposite direction to knife-edge attitude, hesitates briefly, then perform 1 1/4 rolls (450°) in the opposite direction to a wings level attitude, then flies S & L.



K16

- 11. Eight Point Roll.** The model flies S & L then performs 1/8th rolls with equal hesitations between each segment, ending with wings level attitude and flying S & L. Plane must be horizontal inverted when on the centre line.



K17

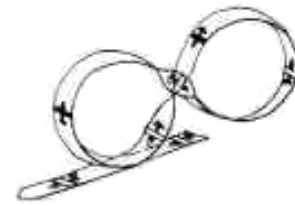
- 12. Rolling Stall Turn.** The model flies S & L on the base line, at the centre it performs a 1/2 roll to inverted, at the end of the base line the model is pushed to a vertical upline. Half way up, the model performs a 1/2 roll, at the top of the vertical line, a stall turn is executed, half way down the vertical line, the model again performs a 1/2 roll. The model is pushed to straight and inverted on the base line and when reaching the centre line, the model performs a final 1/2 roll to exit the manoeuvre flying S & L.

K17

List B

1. **Cuban Eight.** The model flies S & L past the centreline, performs $\frac{5}{8}$ th of a loop to an inverted 45° downline, performs a $\frac{1}{2}$ roll on the centreline, briefly continuing on the 45° downline, performs $\frac{3}{4}$ of a loop to an inverted 45° downline, performs a $\frac{1}{2}$ roll on the centreline, briefly continuing on the 45° downline, performs $\frac{1}{8}$ th of a loop then flies S & L at the same altitude and heading as the start.

K11

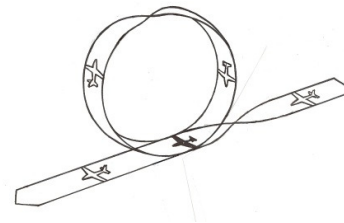


2. **Three Inside Loops.** The model flies S & L, performs three consecutive inside loops on the centreline and then flies S & L.

K11

3. **Rolling Loop.** The model flies S & L then performs a $\frac{1}{2}$ roll to inverted just before the centreline and immediately pushes $\frac{1}{2}$ an outside loop. At the top the model performs a $\frac{1}{2}$ roll to inverted and pulls the second $\frac{1}{2}$ of the loop to exit wings level and upright. Model finishes by flying S & L. **Note:** The loop should be centred on the centreline.

K12



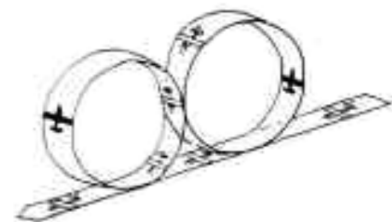
4. **Square Loop.** This is a variation of the basic loop. The two vertical lines and the horizontal line on top should be of the same length. The exit line at the bottom should be at least as long as the other three sides. The $\frac{1}{4}$ loops that connect the four sides should have the same radius at each corner.

K12



5. **Horizontal Eight.** The model flies S & L, performs $\frac{3}{4}$ of an inside loop (to a vertically downward attitude), performs one outside loop (to a vertically downward attitude), performs $\frac{1}{4}$ of an inside loop then flies S & L at the same altitude and heading as the start of the manoeuvre.

K13



6. **Vertical Digital Eight.** The model flies S & L then performs a square loop immediately followed by an outside square loop, ending S & L in the same height and direction as entering the manoeuvre. Both vertical and horizontal lines should be of the same length. The exit line at the centre should be at least as long as the other three sides. The quarter loops that connect the four sides should have the same radius at each corner.

K13

7. Outside Barrel Roll. The model flies S & L then performs a $\frac{1}{2}$ roll to inverted then rotates at a constant roll rate around both the longitudinal and lateral axes, (i.e. outside loop and roll at the same time) causing it to follow a helical path. The model should enter and exit the manoeuvre on the same heading, but should be flying at 90° to this heading when the model crosses the centre line at the highest point of the manoeuvre. The model performs a $\frac{1}{2}$ roll to upright and exits the manoeuvre by flying S & L at the same altitude and heading as the entry.

K14

8. Outside Reverse Cuban Eight. The model flies S & L, performs a $\frac{1}{2}$ roll to inverted before crossing the centreline, performs $\frac{1}{8}$ th of an outside loop to an inverted 45° upline and a $\frac{1}{2}$ roll to upright on the centreline, briefly continuing on the 45° upline performs $\frac{3}{4}$ of an outside loop to an inverted 45° upline, performs $\frac{1}{2}$ roll to upright on the centreline, briefly continuing on the 45° upline performs $\frac{5}{8}$ th of an outside loop then flies level inverted past the centreline before performing a $\frac{1}{2}$ roll to upright and flies S & L to complete the manoeuvre.

K14

9. Humpty Bump with Half Rolls. Model flies S & L then pulls to a vertical upline. Halfway up the line a $\frac{1}{2}$ roll is performed then at the top a $\frac{1}{2}$ inside loop is flown to a vertical downline. Half way down another $\frac{1}{2}$ roll is performed followed by a pull to horizontal on the base line. All radii and half loop must be equal.

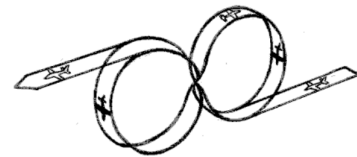
K15

10. Sunny Side Up. The model flies S & L, starts a $\frac{1}{4}$ inside loop then performs a $\frac{1}{2}$ roll as the model approaches vertical and continues to push $\frac{1}{2}$ an outside loop until the model approaches vertical then performs a $\frac{1}{2}$ roll and pulls $\frac{1}{4}$ inside loop then flies S & L to complete the manoeuvre.

K16

11. Horizontal Eight with Centre Rolls. The model flies S & L then before the centre line, pull a $\frac{1}{4}$ of an inside loop and perform a $\frac{1}{2}$ roll on the centre line, continue to push a complete outside loop and again on the centre line, perform a $\frac{1}{2}$ roll followed by $1\frac{1}{4}$ outside loop to exit upright and with wings S & L.

K17



12. Loop with Two Rolls at the Top. Model flies S & L and on the centre line begins to perform a loop. Two consecutive rolls must be performed at the top of the loop being centred on the centre line after which the model completes the loop and exits on the base line.

K18