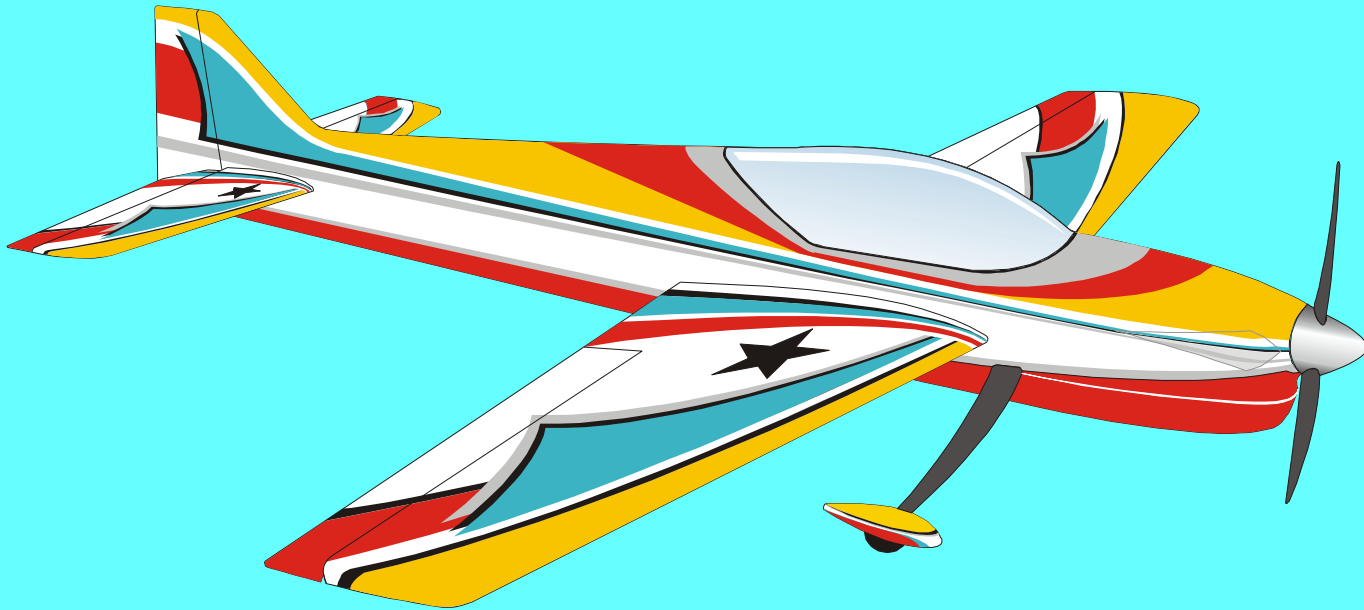
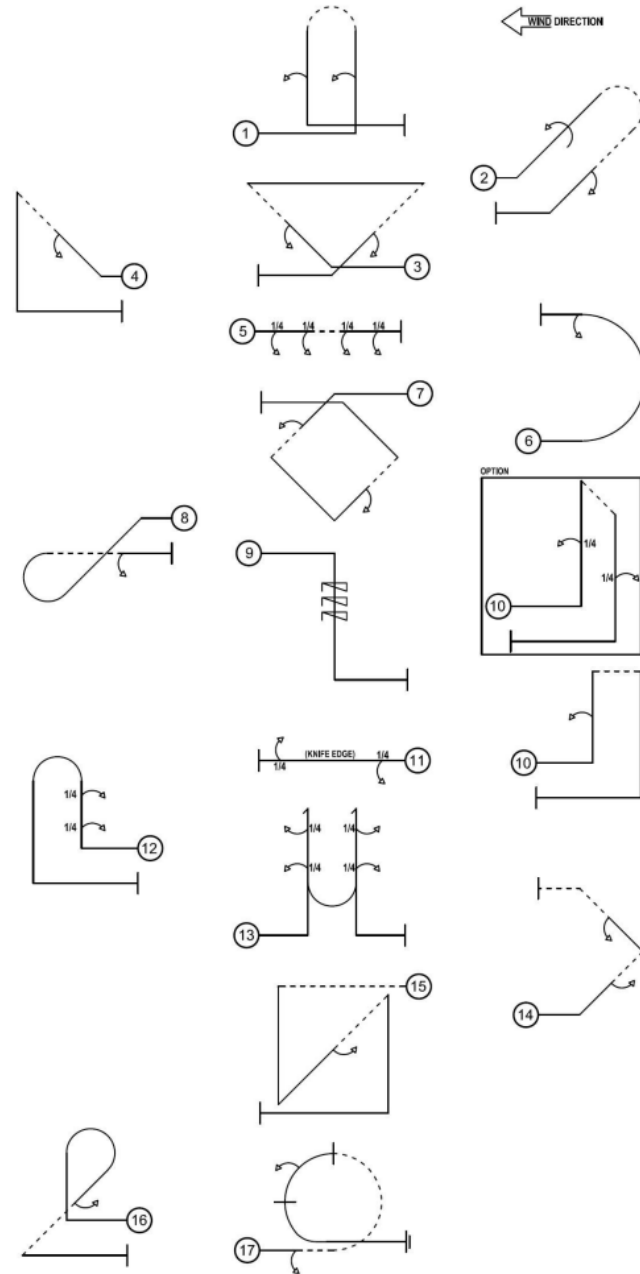


Flying and Judging F3A



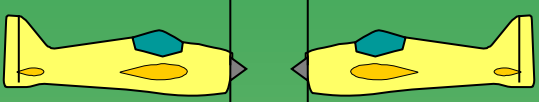
SCHEMATIC MANOEUVRE ILLUSTRATIONS
SCHEDULE N-25

Nordic Schedule N-25

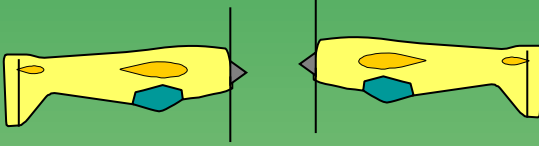




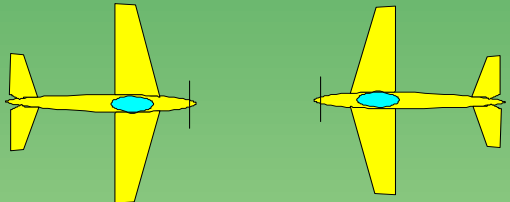
Explanations:



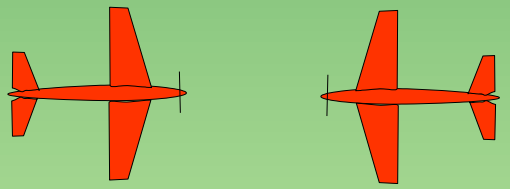
Aircraft upright



Aircraft inverted



Aircraft in Knife-Edge View from Top



Aircraft in Knife-Edge View from Below



part roll



half roll



roll



pos. spin



neg. spin



pos.



neg.

snap rolls

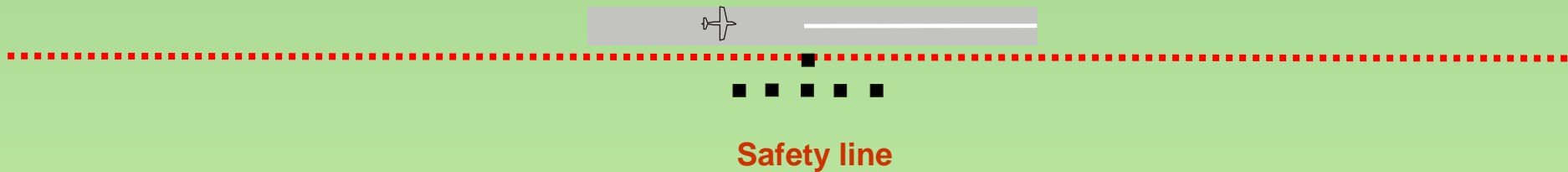


reference points



General

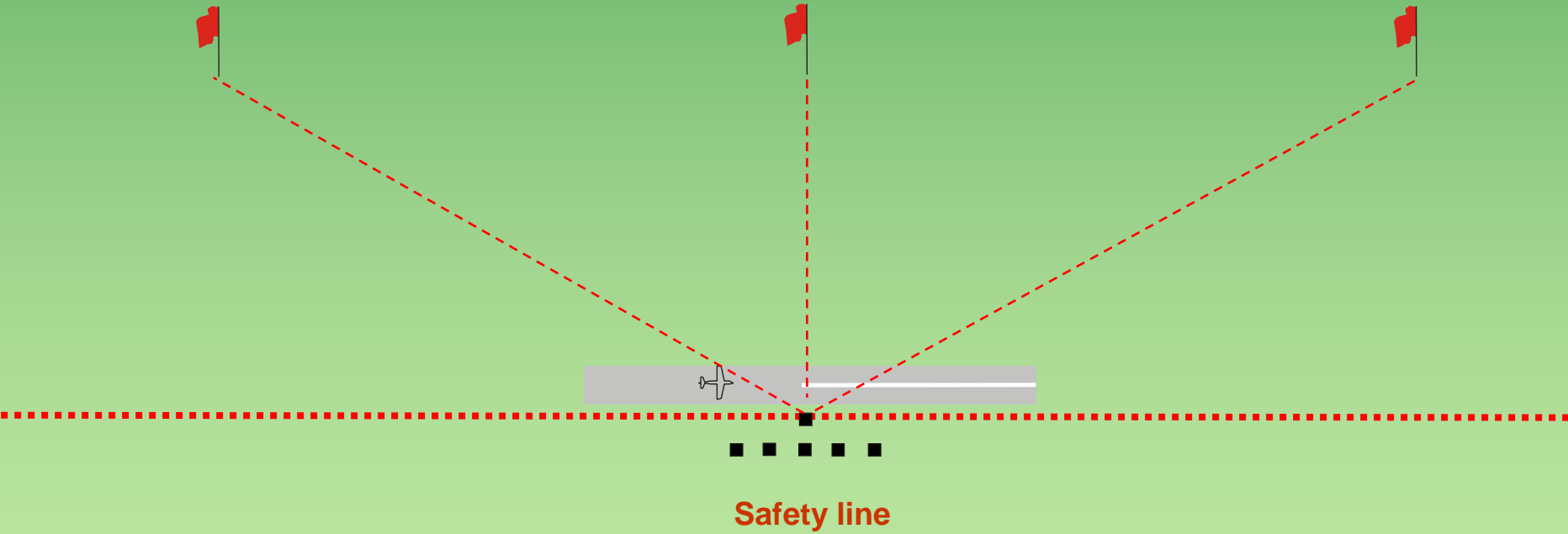
- When appropriate, entry and exit of centre manoeuvres must be at the same altitude, unless specified otherwise.
- Positioning adjustments in altitude are allowed in turn-around manoeuvres.





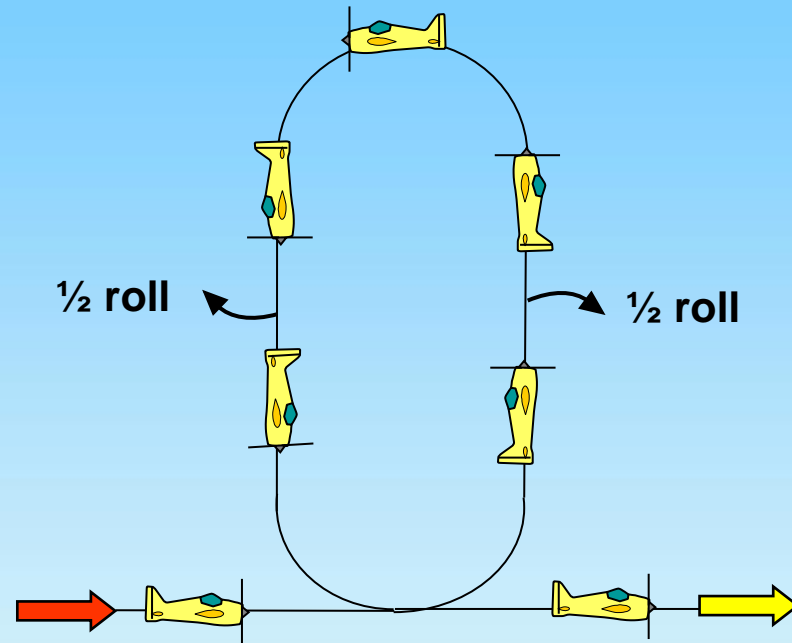
Take-off procedure (not judged, not scored)

 wind





N-25.01 Pull-push-pull Humpty Bump with two 1/2 rolls



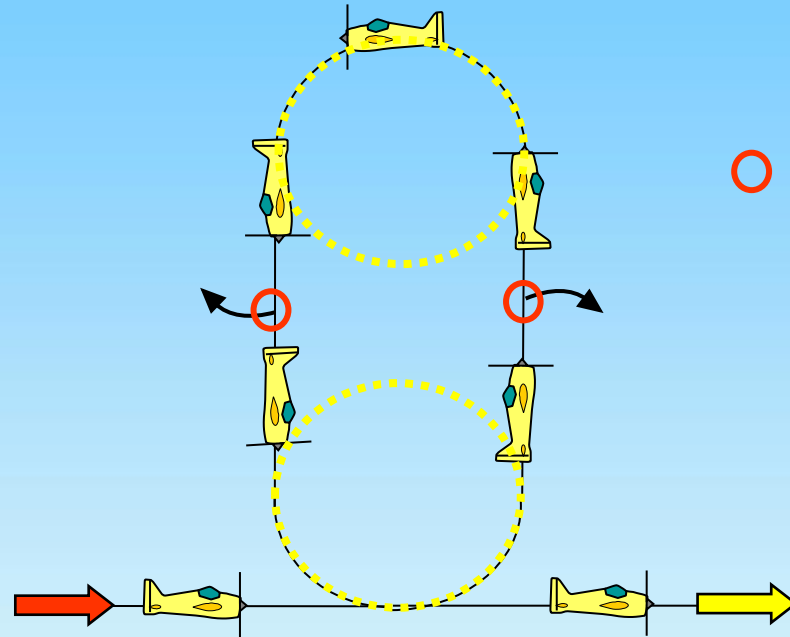
From upright at center, start pull through a 1/4 loop into a vertical upline, perform a $\frac{1}{2}$ roll, push through a half loop into a vertical downline, perform a $\frac{1}{2}$ roll, pull through a 1/4 loop, exit upright.





N-25.01 Pull-push-pull Humpty Bump with two 1/2 rolls

All radii are equal.



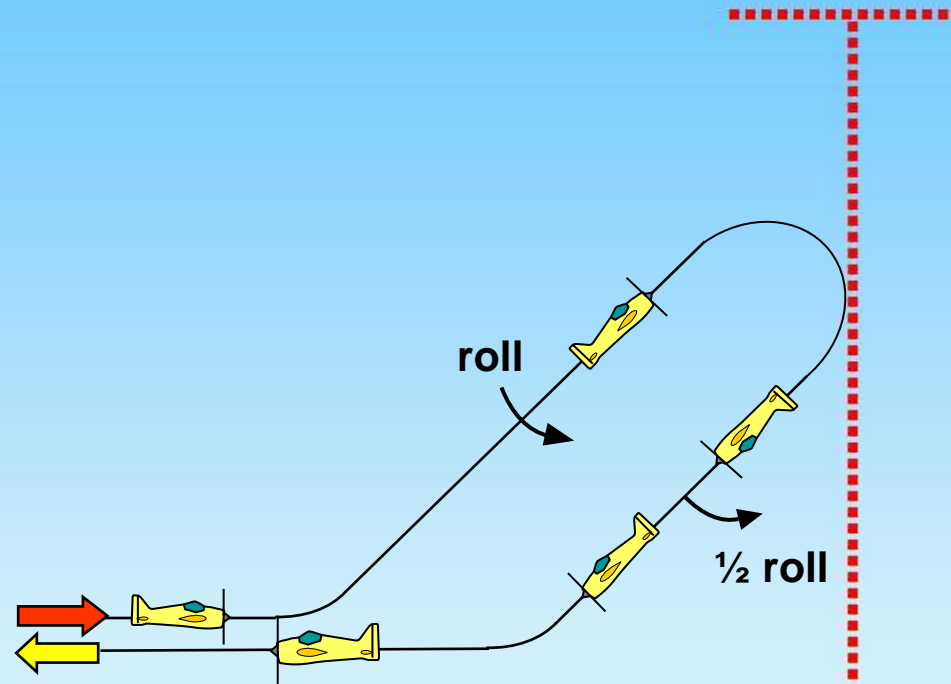
○ 1/2 rolls centered in the middle of the lines.

From upright at center, start pull through a 1/4 loop into a vertical upline, perform a 1/2 roll, push through a half loop into a vertical downline, perform a 1/2 roll, pull through a 1/4 loop, exit upright.





N-25.02 Trombone with roll and 1/2 roll



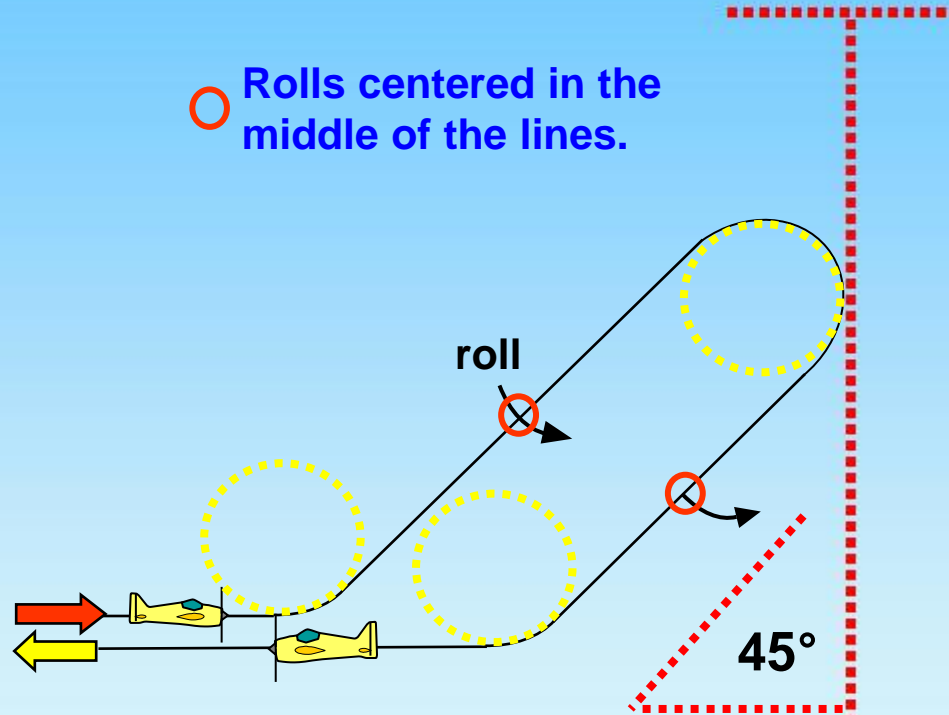
From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform a roll, push through a $\frac{1}{2}$ loop into a 45° downline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{8}$ loop, exit upright.



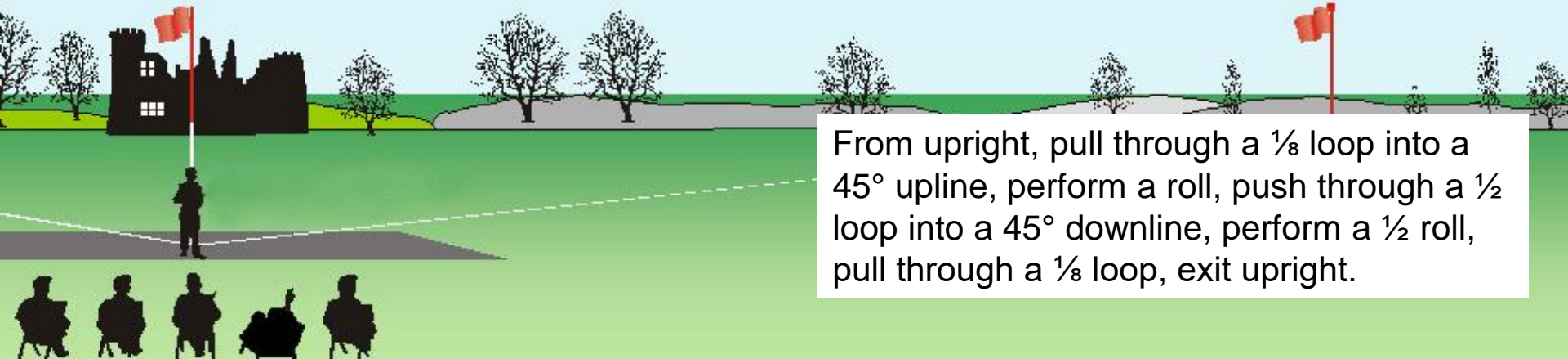
N-25.02 Trombone with roll and 1/2 roll

All radii are equal.

○ Rolls centered in the middle of the lines.

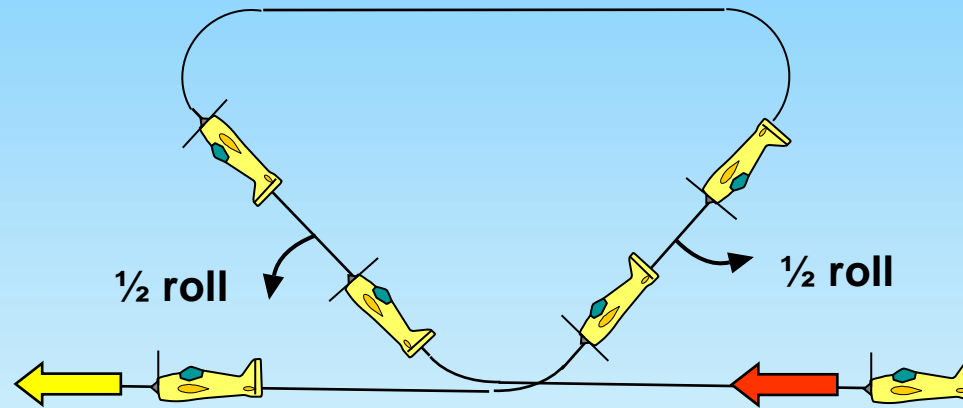


From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform a roll, push through a $\frac{1}{2}$ loop into a 45° downline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{8}$ loop, exit upright.





N-25.03 Triangle with two 1/2 rolls



From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, push through a $\frac{3}{8}$ loop, push through a $\frac{3}{8}$ loop into a 45° downline, perform a $\frac{1}{2}$ roll, push through $\frac{1}{8}$ loop, exit upright.

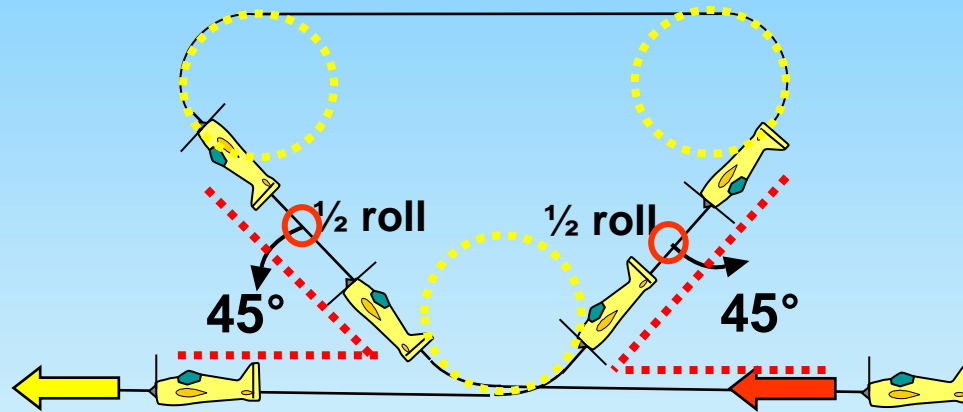




N-25.03 Triangle with two 1/2 rolls

All radii are equal.

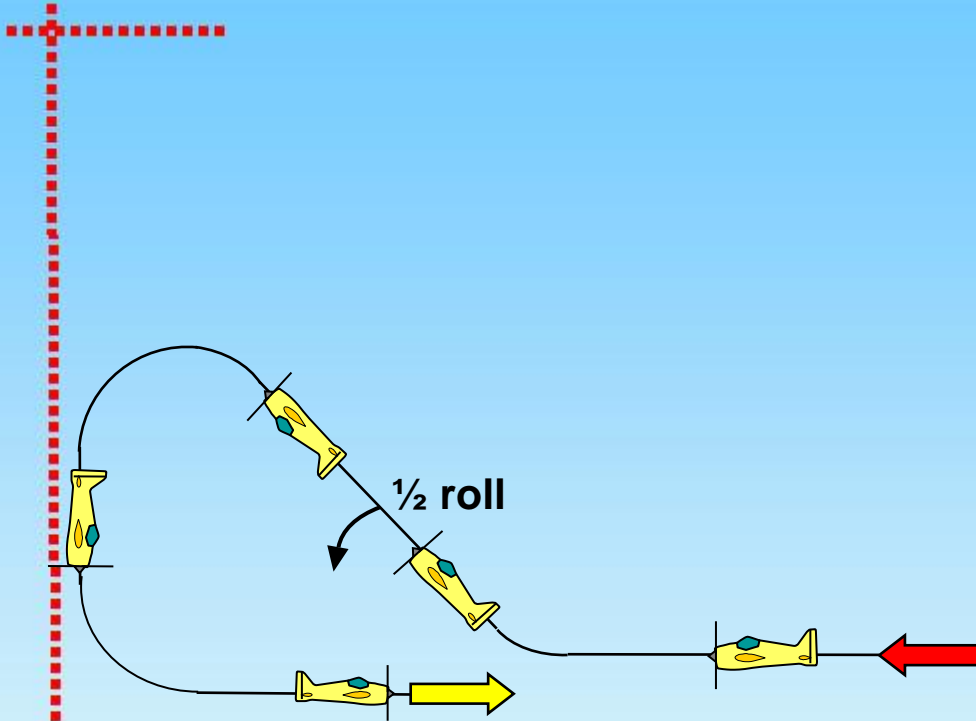
○ Rolls centered in the middle of the lines.



From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, push through a $\frac{3}{8}$ loop, push through a $\frac{3}{8}$ loop into a 45° downline, perform a $\frac{1}{2}$ roll, push through $\frac{1}{8}$ loop, exit upright.



N-25.04 Reverse Shark Fin with 1/2 roll



From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, pull through a $\frac{3}{8}$ loop into a vertical downline, pull through a $\frac{1}{4}$ loop, exit upright

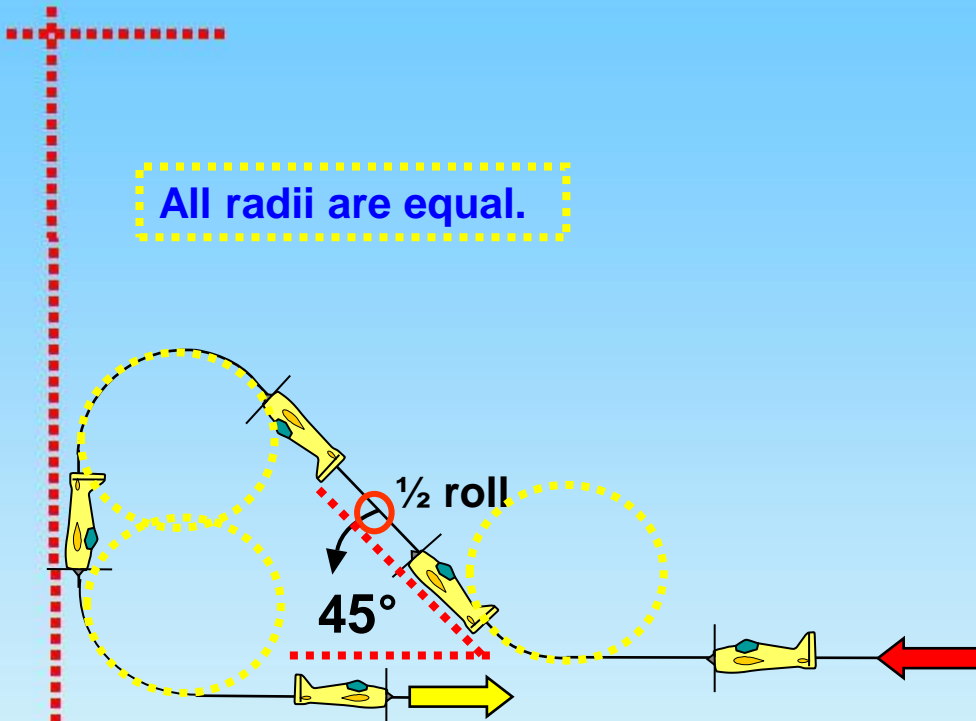




N-25.04 Reverse Shark Fin with 1/2 roll

All radii are equal.

○ Roll centered in the middle of the line.

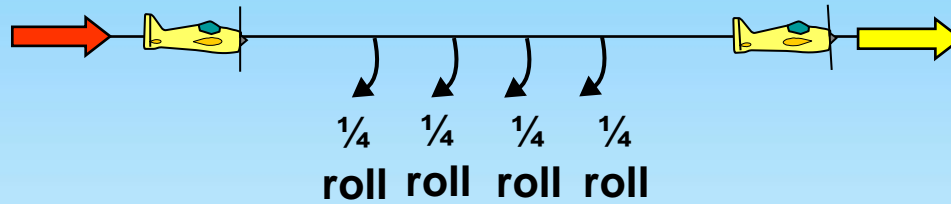


From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, pull through a $\frac{3}{8}$ loop into a vertical downline, pull through a $\frac{1}{4}$ loop, exit upright





N-25.05 Roll Combination with four 1/4 rolls



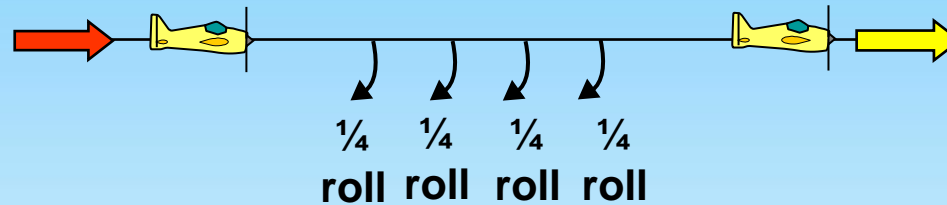
From upright, perform consecutively four $\frac{1}{4}$ rolls, exit upright





N-25.05 Roll Combination with four 1/4 rolls

Lines between part rolls must be short and of equal length.

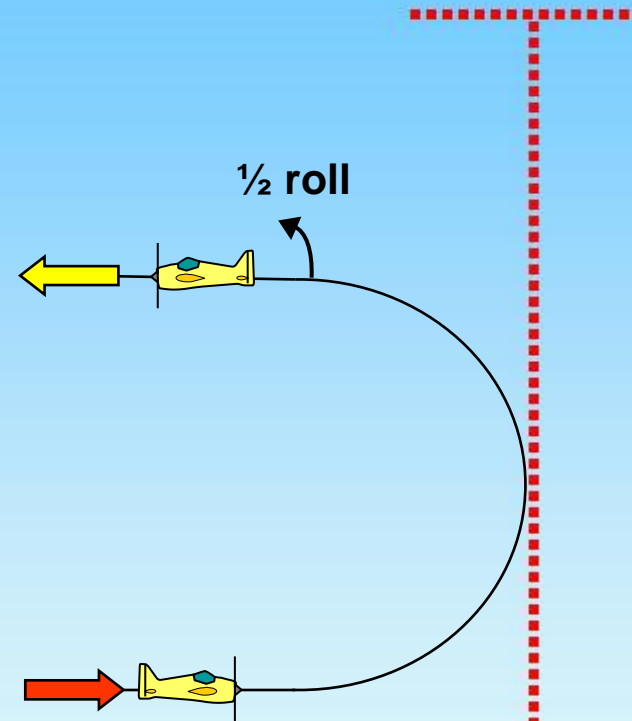


From upright, perform consecutively four $\frac{1}{4}$ rolls, exit upright

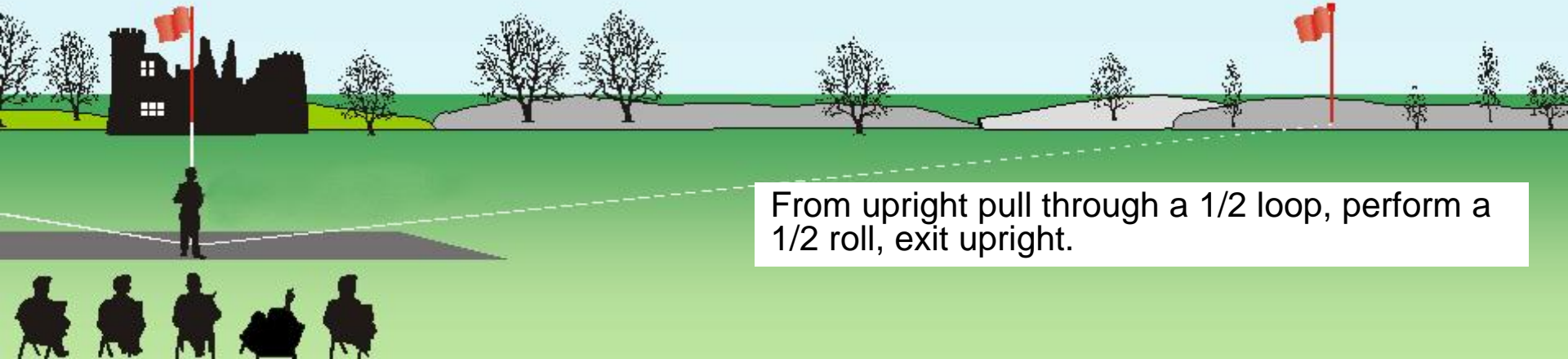
The background of the text box shows a landscape with a castle, trees, and three red flags. Below the text box, a person is standing on a stage, and below that, silhouettes of an audience are visible.



N-25.06 Immelmann



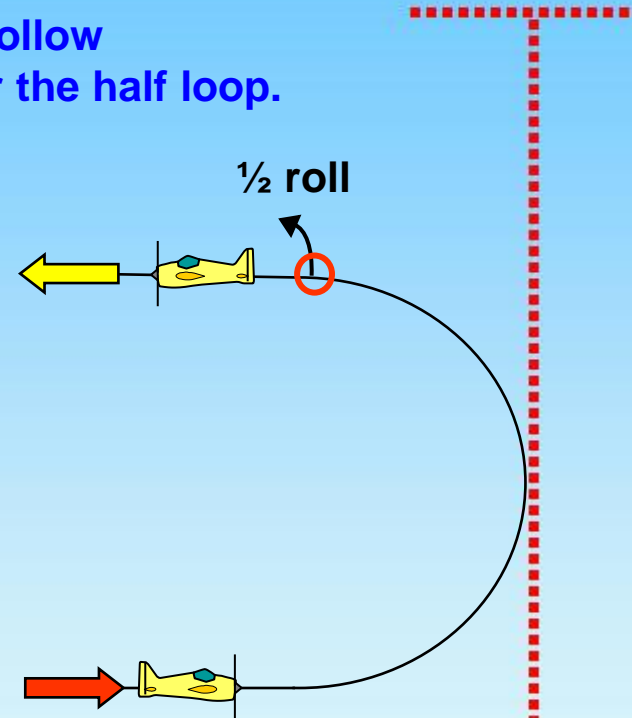
From upright pull through a 1/2 loop, perform a 1/2 roll, exit upright.



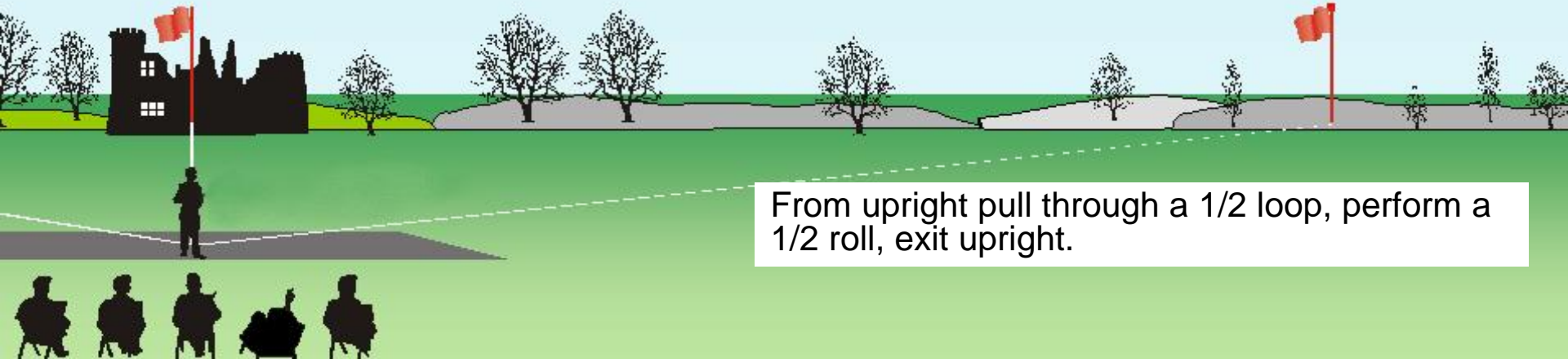


N-25.06 Immelmann

- The $\frac{1}{2}$ roll must follow immediately after the half loop.

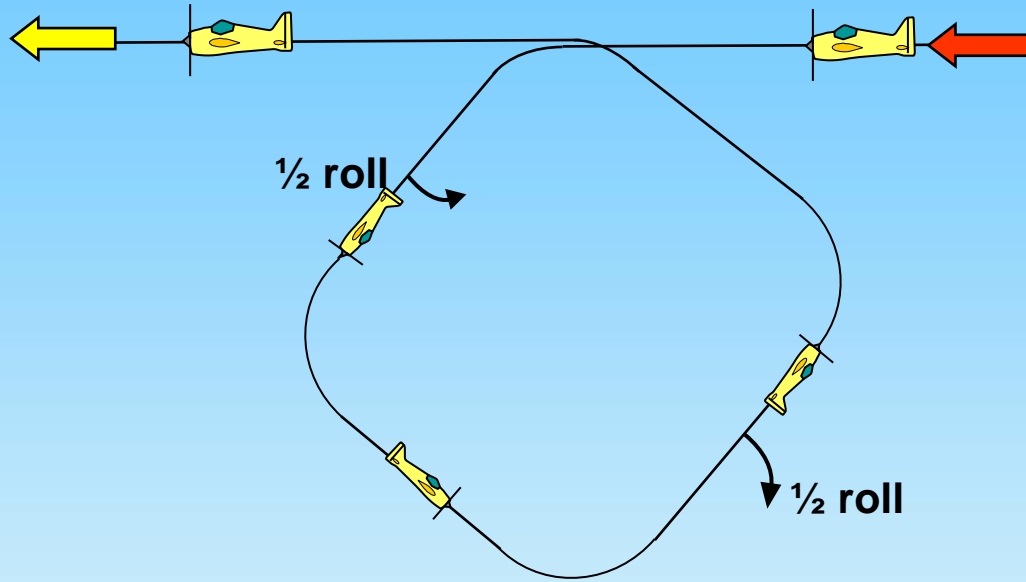


From upright pull through a 1/2 loop, perform a 1/2 roll, exit upright.





N-25.07 Square Loop on corner from top with 1/2 roll



From upright, push through a $\frac{1}{8}$ loop into a 45° downline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop into a 45° downline, pull through a $\frac{1}{4}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, push through a $\frac{1}{4}$ loop into a 45° upline, push through a $\frac{1}{8}$ loop, exit upright.

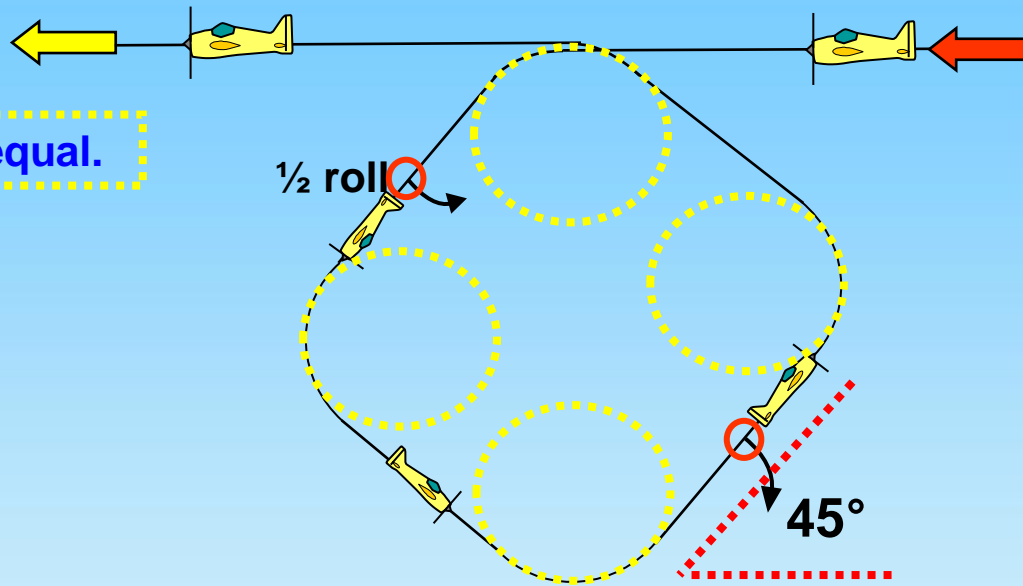




N-25.07 Square Loop on corner from top with 1/2 roll

All radii are equal.

○ Roll centered in the middle of the lines.

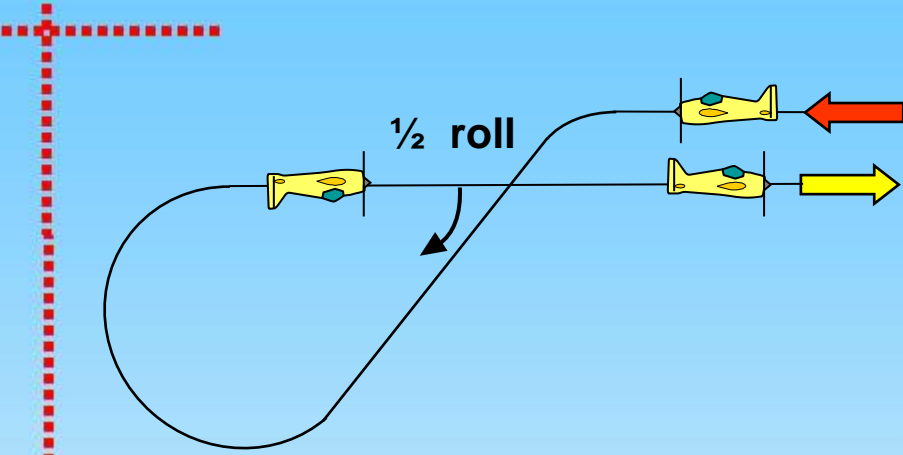


From upright, push through a $\frac{1}{8}$ loop into a 45° downline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop into a 45° downline, pull through a $\frac{1}{4}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, push through a $\frac{1}{4}$ loop into a 45° upline, push through a $\frac{1}{8}$ loop, exit upright.





P-27.08 Half Cuban 8 from top with 1/2 roll.

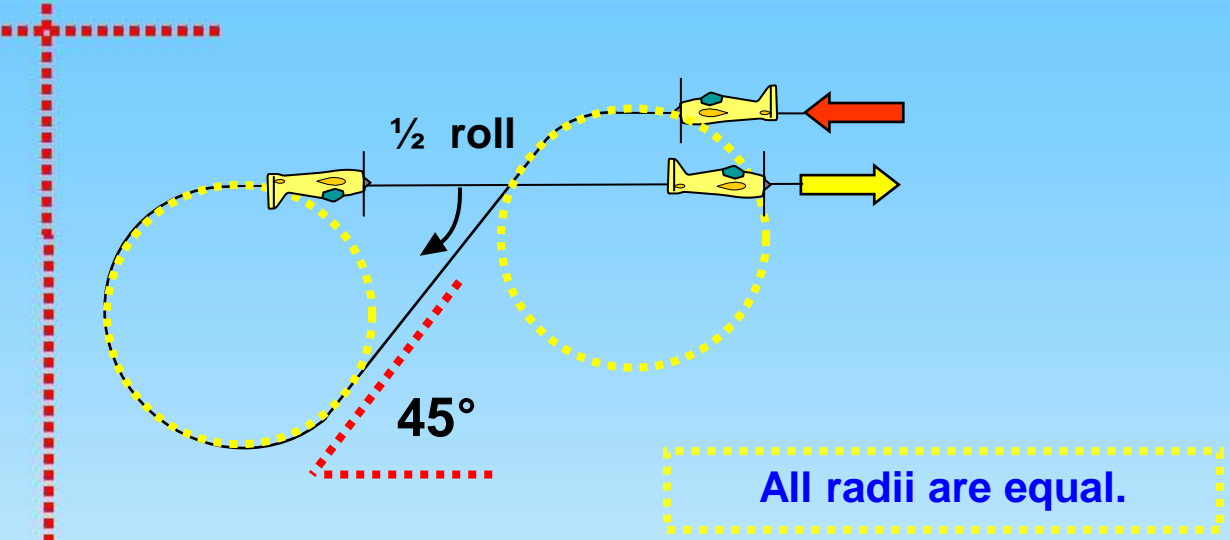


From upright, push through a 1/8 loop into a 45° downline, pull through a 5/8 loop, perform a 1/2 roll, exit upright.





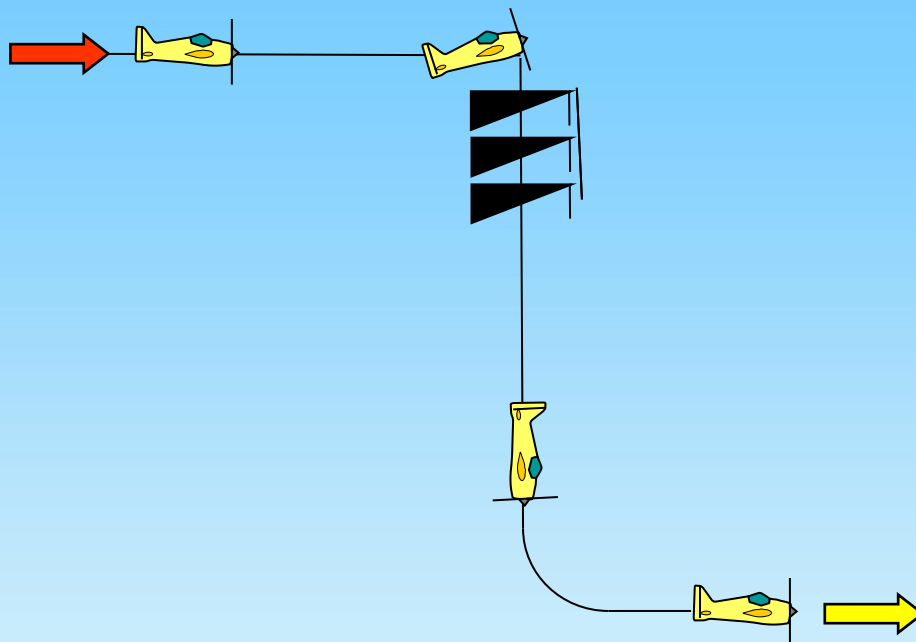
P-27.08 Half Cuban 8 from top with 1/2 roll.



From upright, push through a 1/8 loop into a 45° downline, pull through a 5/8 loop, perform a 1/2 roll, exit upright.



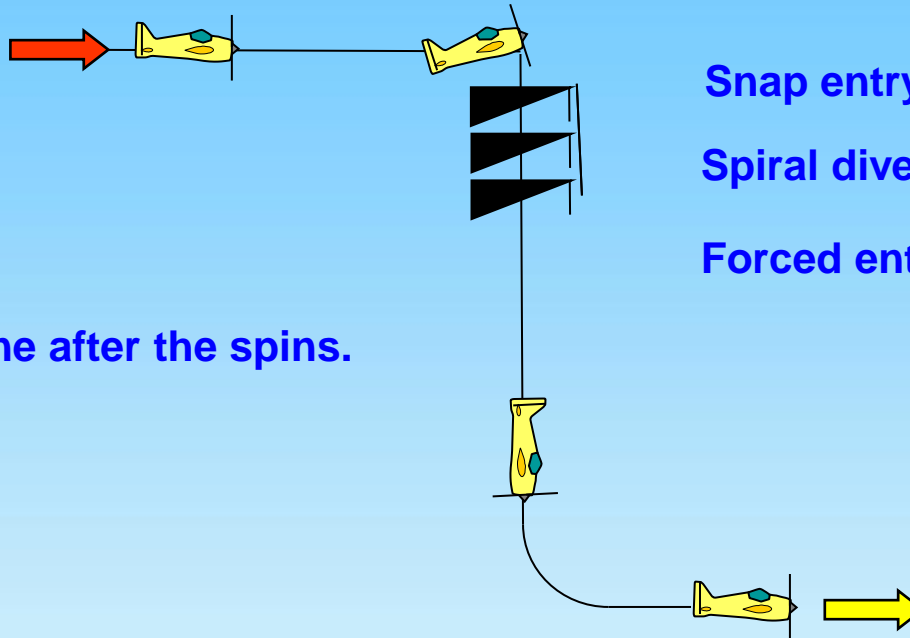
N-25.09 Spin with three turns



From upright, perform a spin with three turns, perform a vertical downline, pull through a 1/4 loop, exit upright.



N-25.09 Spin with three turns



Snap entry - 0 points!

Spiral dive - 0 points!

Forced entry: downgrade.

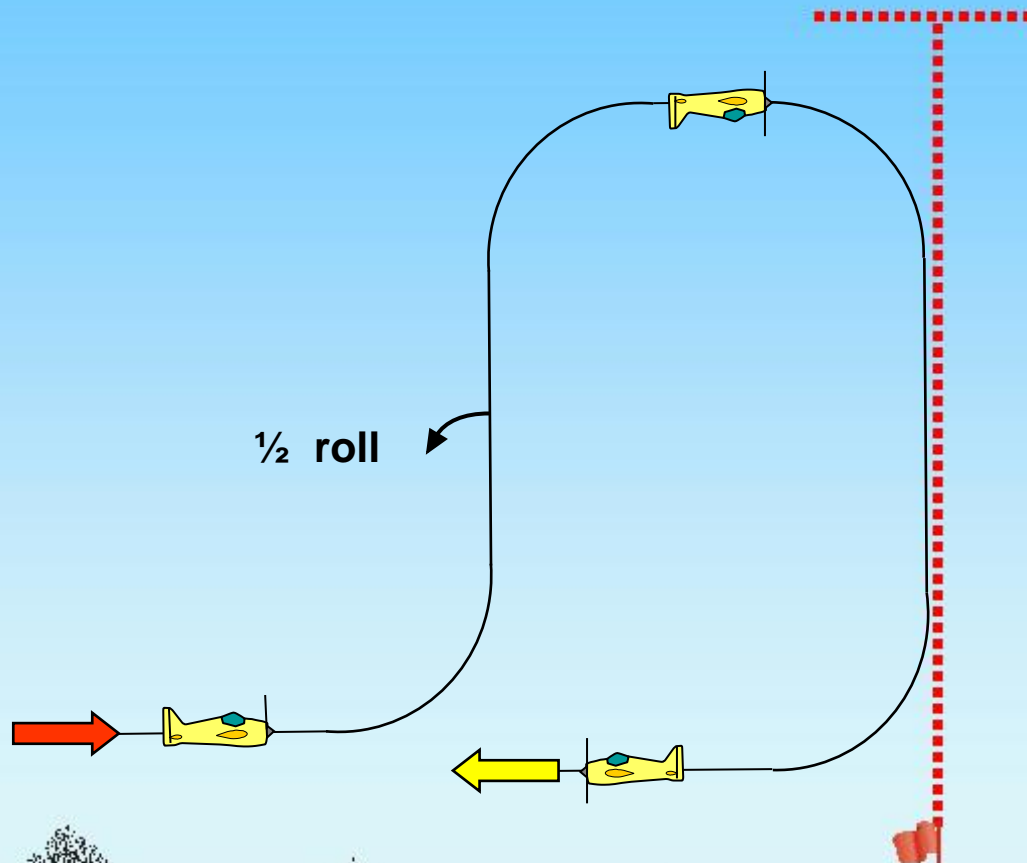
Line after the spins.

From upright, perform a spin with three turns, perform a vertical downline, pull through a 1/4 loop, exit upright.



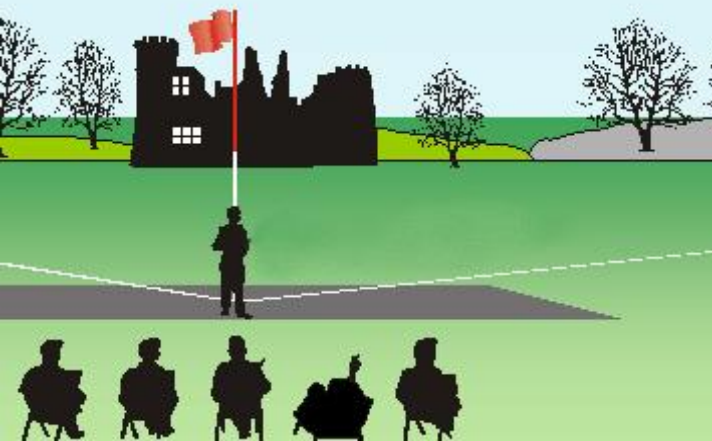


N-25.10 Top Hat with $\frac{1}{2}$ roll. (Option: Top Hat with two $\frac{1}{4}$ roll)



From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop, pull through a $\frac{1}{4}$ loop into a vertical downline, pull through $\frac{1}{4}$ loop, exit upright.

Option: From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{4}$ roll, pull through a $\frac{1}{4}$ loop, pull through a $\frac{1}{4}$ loop into a vertical downline, perform a $\frac{1}{4}$ roll, pull through $\frac{1}{4}$ loop, exit upright.



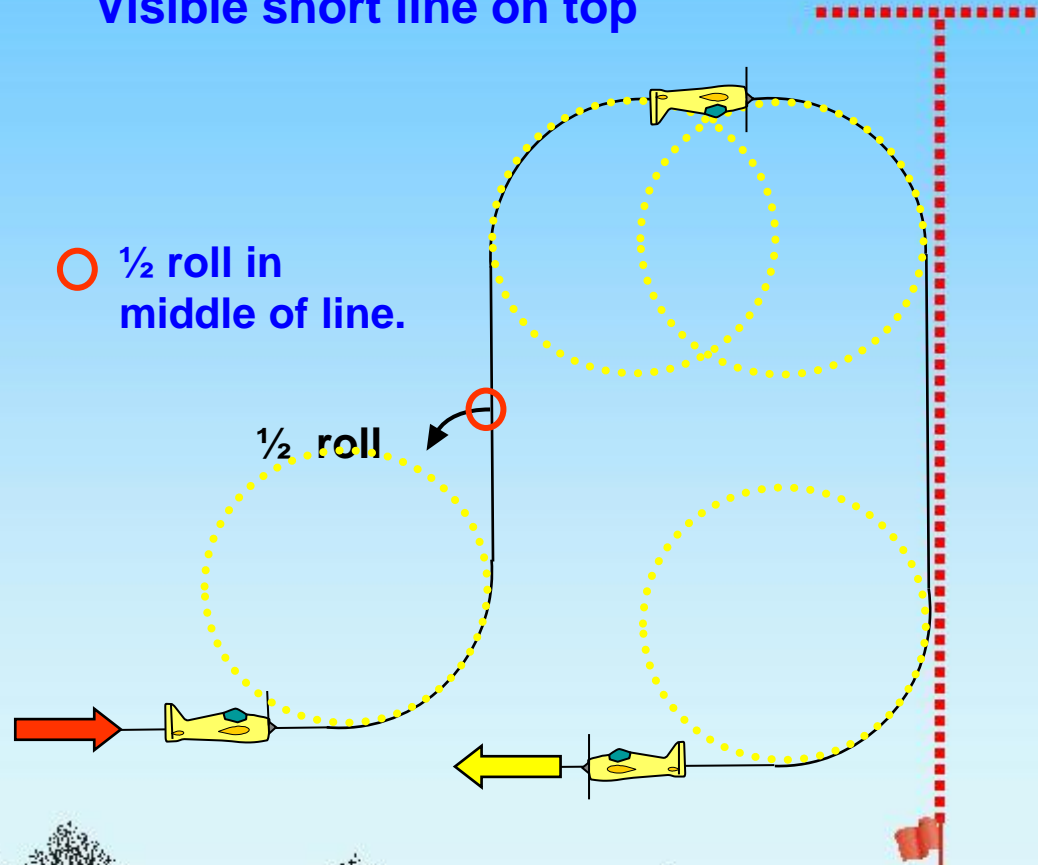


N-25.10 Top Hat with $\frac{1}{2}$ roll. (Option: Top Hat with two $\frac{1}{4}$ roll)

Visible short line on top

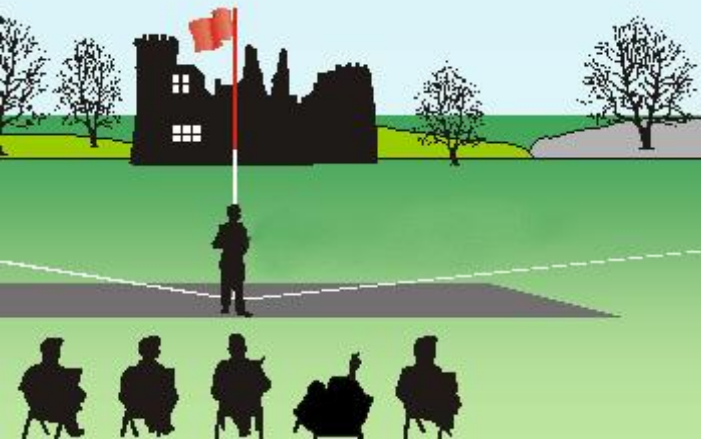
○ $\frac{1}{2}$ roll in middle of line.

All radii are equal.



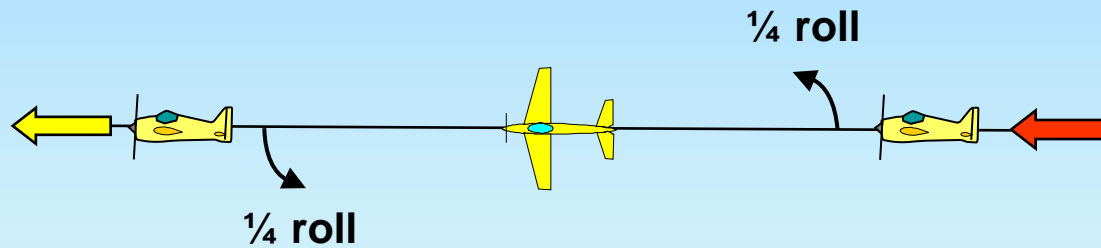
From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop, pull through a $\frac{1}{4}$ loop into a vertical downline, pull through $\frac{1}{4}$ loop, exit upright.

Option: From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{4}$ roll, pull through a $\frac{1}{4}$ loop, pull through a $\frac{1}{4}$ loop into a vertical downline, perform a $\frac{1}{4}$ roll, pull through $\frac{1}{4}$ loop, exit upright.





N-25.11 Roll Combination with $\frac{1}{4}$ roll, Knife Edge, $\frac{1}{4}$ roll



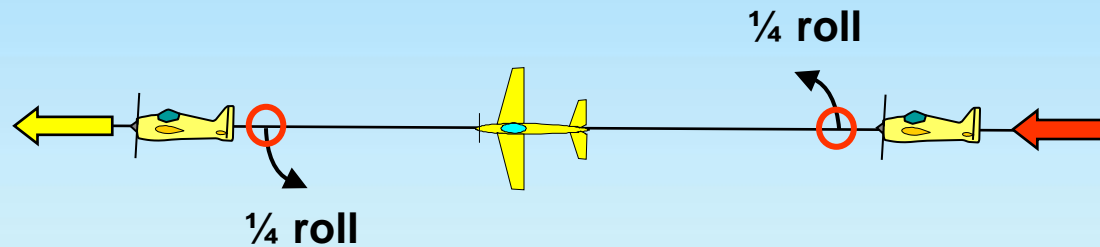
From upright, perform a $\frac{1}{4}$ roll into knife edge flight, perform a $\frac{1}{4}$ roll, exit upright





N-25.11 Roll Combination with $\frac{1}{4}$ roll, Knife Edge, $\frac{1}{4}$ roll

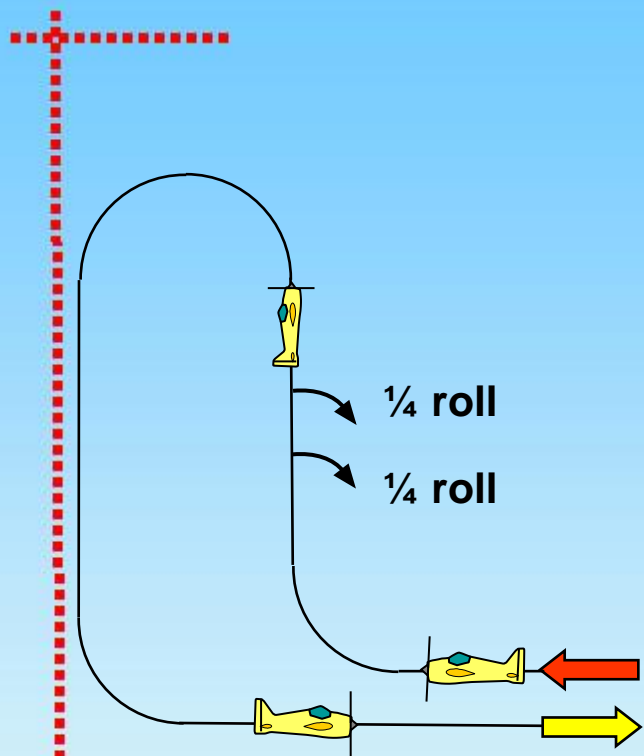
○ $\frac{1}{4}$ rolls at same distance from centre



From upright, perform a $\frac{1}{4}$ roll into knife edge flight, perform a $\frac{1}{4}$ roll, exit upright



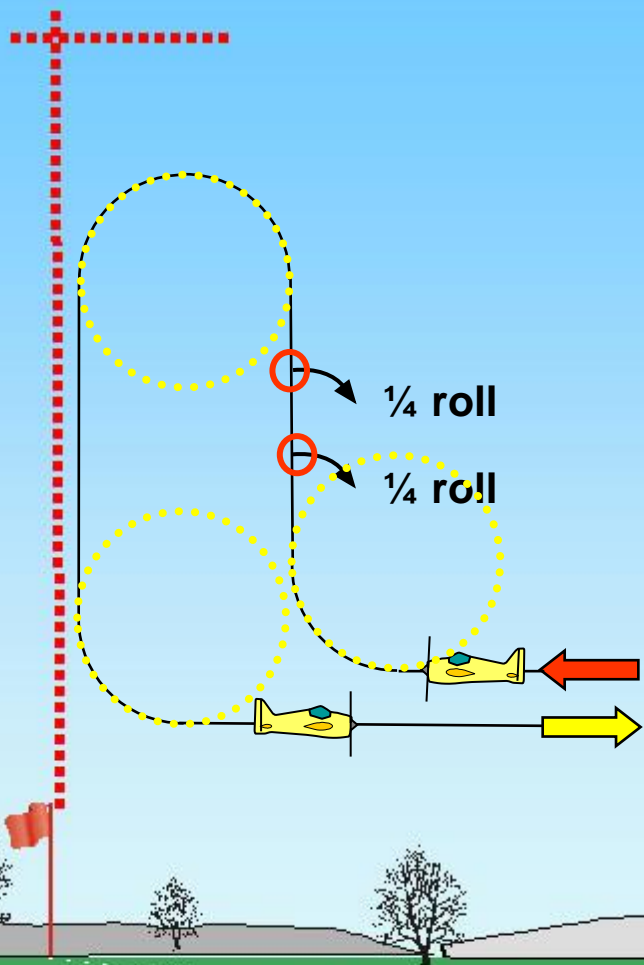
N-25.12 Pull-pull-pull Humpty Bump with two 1/4 rolls



From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform consecutively two $\frac{1}{4}$ rolls, pull through a half loop into a vertical downline, pull through a $\frac{1}{4}$ loop, exit upright.



N-25.12 Pull-pull-pull Humpty Bump with two 1/4 rolls



○ 1/4 rolls centered on middle of the line.

Lines between part rolls must be short and of recognizable length.

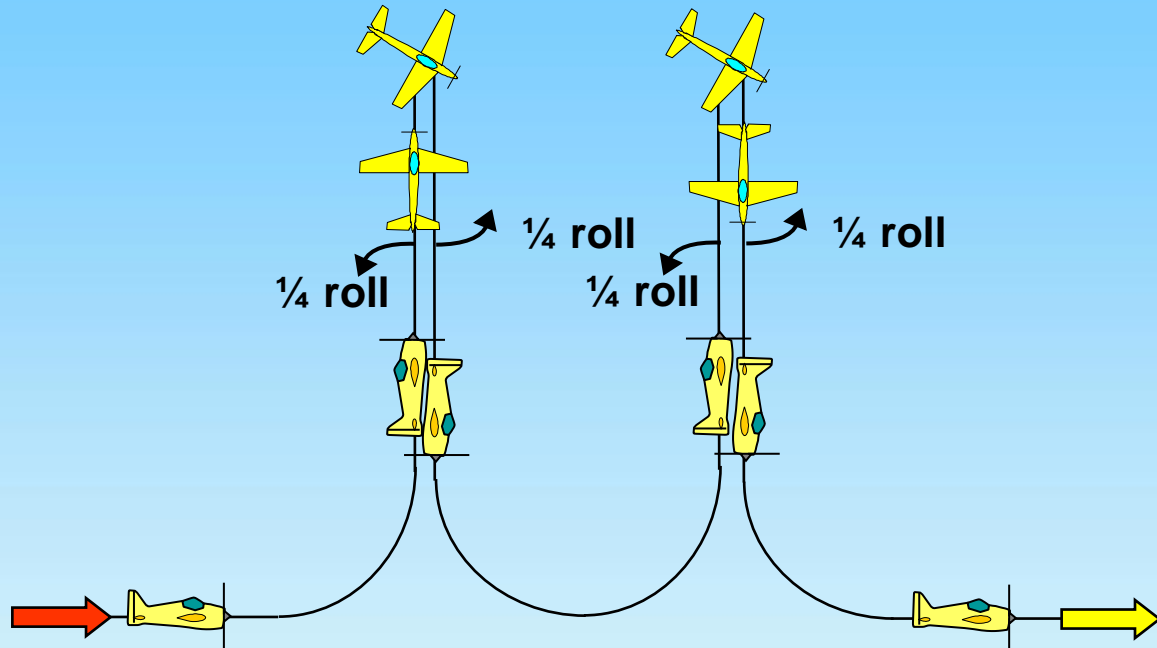
All radii are equal.

From upright, pull through a 1/4 loop into a vertical upline, perform consecutively two 1/4 rolls, pull through a half loop into a vertical downline, pull through a 1/4 loop, exit upright.





N-25.13 Figure M with 1/4 rolls



From upright, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a $\frac{1}{4}$ roll, perform a stall turn into a vertical downline, perform a $\frac{1}{4}$ roll, pull through a half loop into a vertical upline, perform a $\frac{1}{4}$ roll, perform a stall turn into a vertical downline, perform a $\frac{1}{4}$ roll, pull through a $\frac{1}{4}$ loop, exit upright.



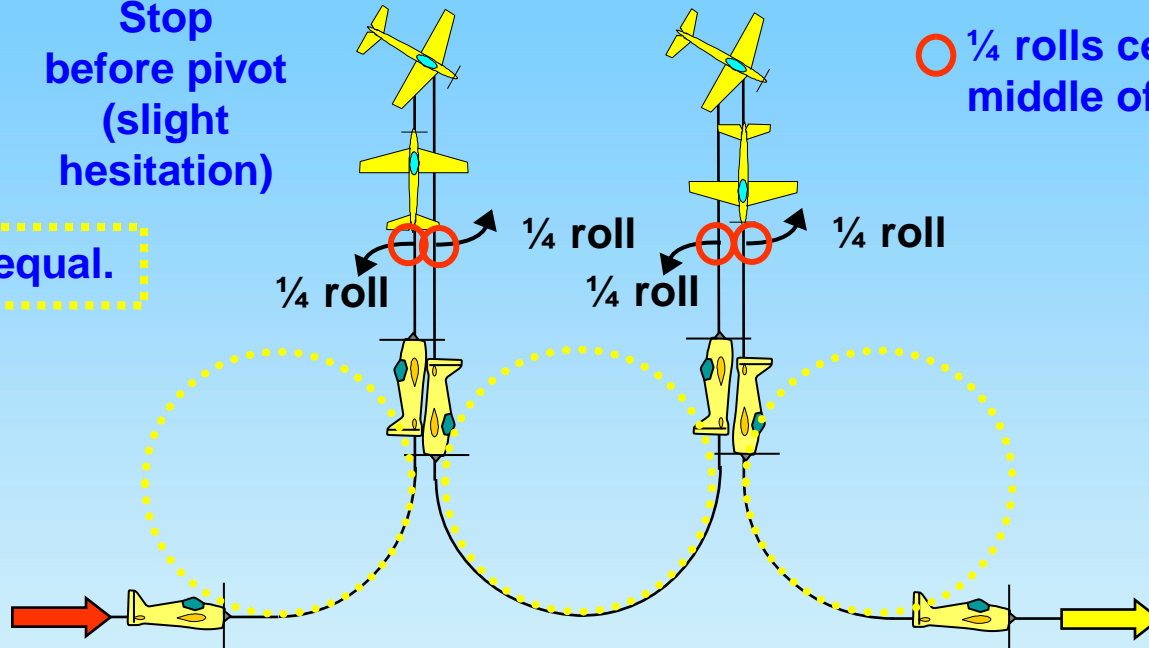


N-25.13 Figure M with 1/4 rolls

Stop
before pivot
(slight
hesitation)

○ 1/4 rolls centered on
middle of the line.

All radii are equal.

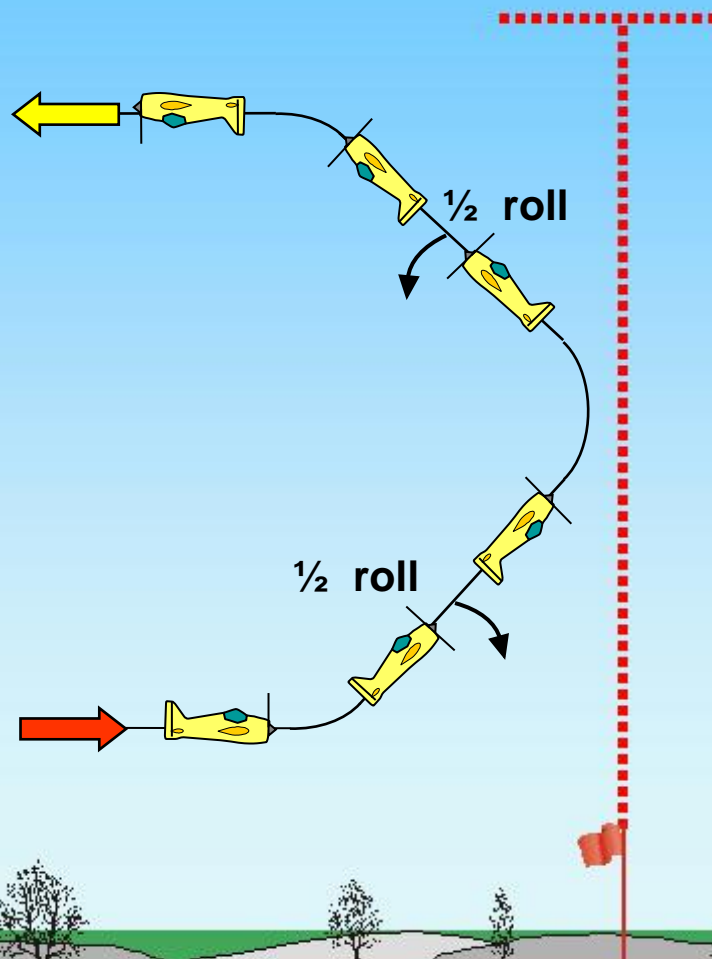


From upright, pull through a 1/4 loop into a vertical upline, perform a 1/4 roll, perform a stall turn into a vertical downline, perform a 1/4 roll, pull through a half loop into a vertical upline, perform a 1/4 roll, perform a stall turn into a vertical downline, perform a 1/4 roll, pull through a 1/4 loop, exit upright.

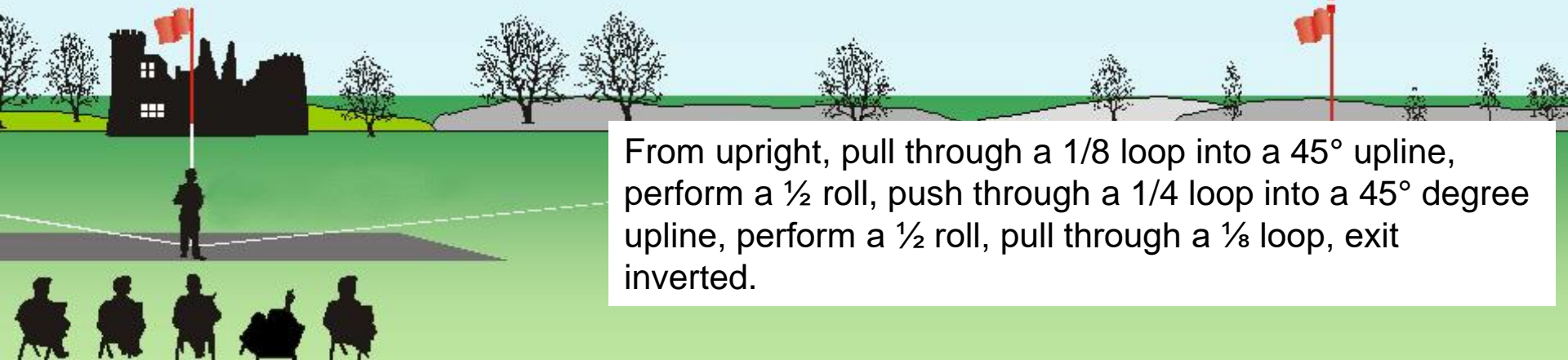




N-25.14 Half square Loop on Corner with 1/2 rolls



From upright, pull through a $1/8$ loop into a 45° upline, perform a $1/2$ roll, push through a $1/4$ loop into a 45° degree upline, perform a $1/2$ roll, pull through a $1/8$ loop, exit inverted.

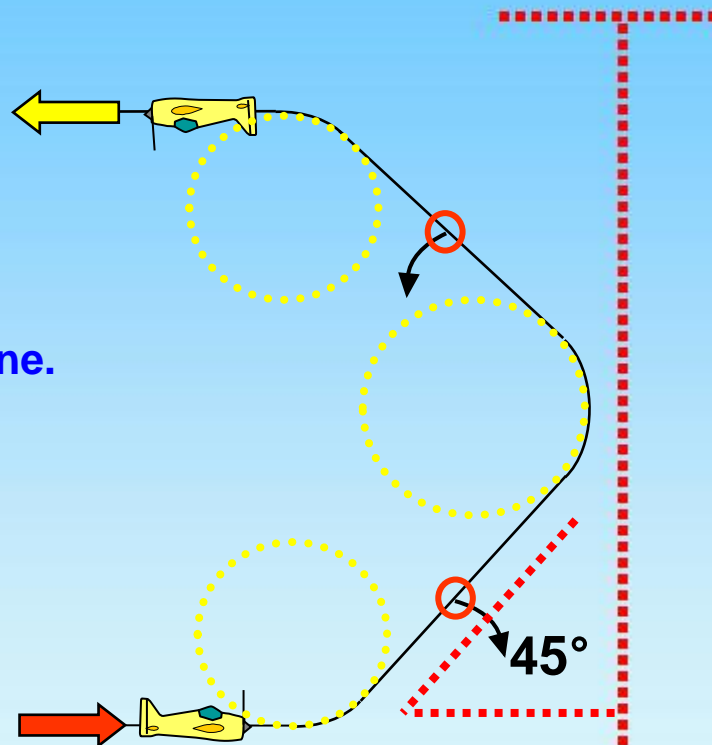




N-25.14 Half square Loop on Corner with 1/2 rolls

○ $\frac{1}{2}$ rolls on middle of the line.

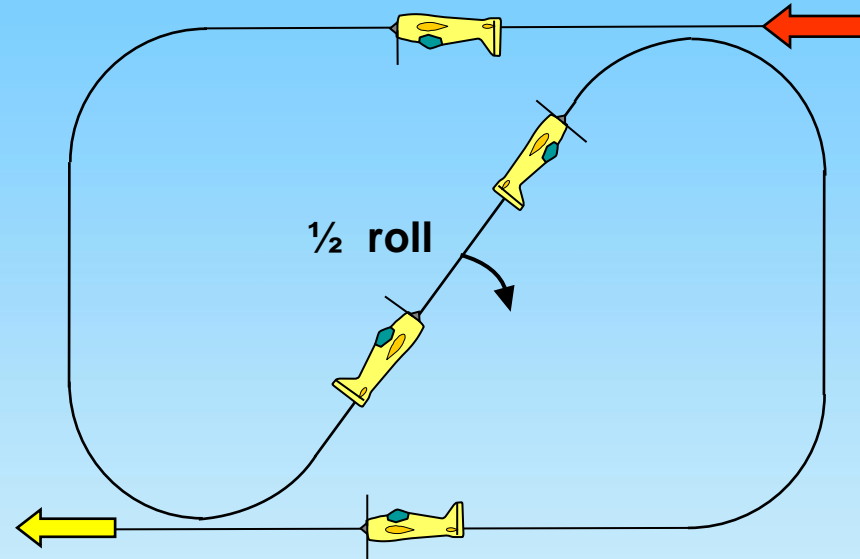
All radii are equal.



From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, push through a $\frac{1}{4}$ loop into a 45° degree upline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{8}$ loop, exit inverted.



N-25.15 Double triangle with 1/2 roll



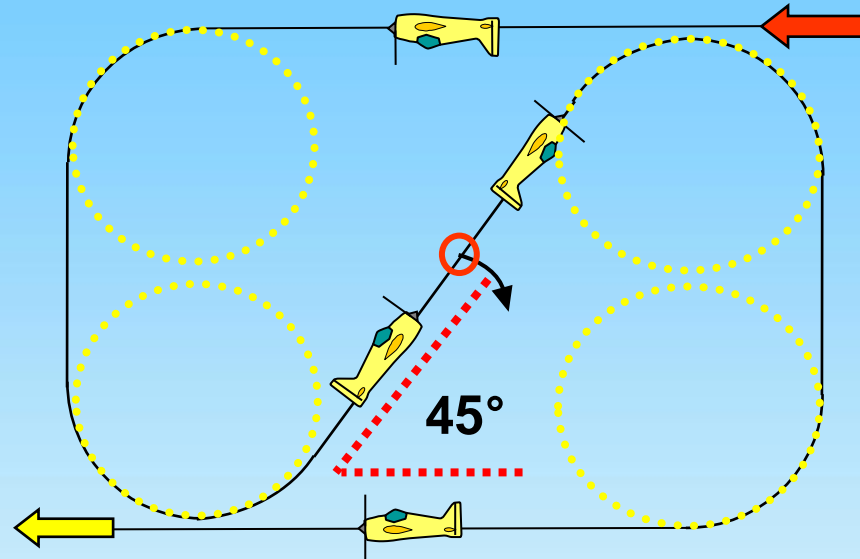
From upright, fly past center, pull through a $\frac{1}{4}$ loop into a vertical downline, pull through a $\frac{3}{8}$ loop into a 45° upline, perform a $\frac{1}{2}$ roll, pull through a $\frac{3}{8}$ loop into a vertical downline, pull through a quarter loop, exit upright.



N-25.15 Double triangle with 1/2 roll



All radii are equal.

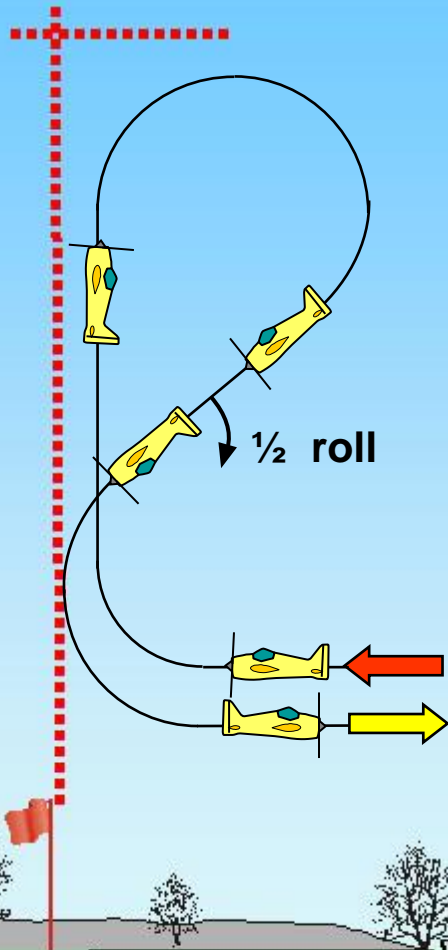


○ 1/2 roll on middle of the line.

From upright, fly past center, pull through a 1/4 loop into a vertical downline, pull through a 3/8 loop into a 45° upline, perform a 1/2 roll, pull through a 3/8 loop into a vertical downline, pull through a quarter loop, exit upright.



P-27.16 Reverse Figure ET with $\frac{1}{2}$ roll

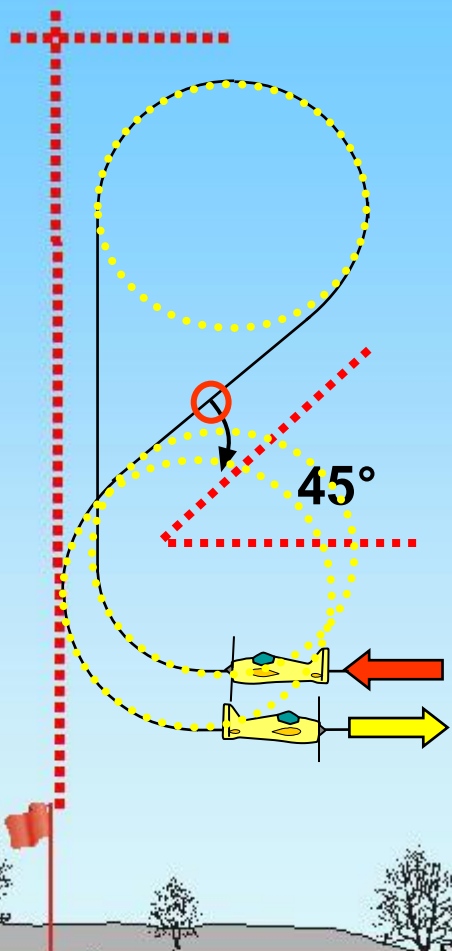


From upright, pull through $\frac{1}{4}$ loop into a vertical upline, pull through a $\frac{5}{8}$ loop into a 45° downline, perform a $\frac{1}{2}$ roll, pull through a $\frac{3}{8}$ loop, exit upright.





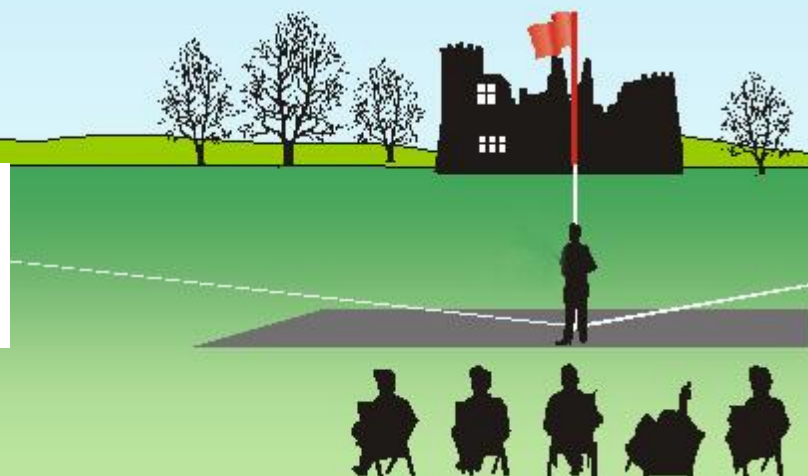
P-27.16 Reverse Figure ET with 1/2 roll



All radii are equal.

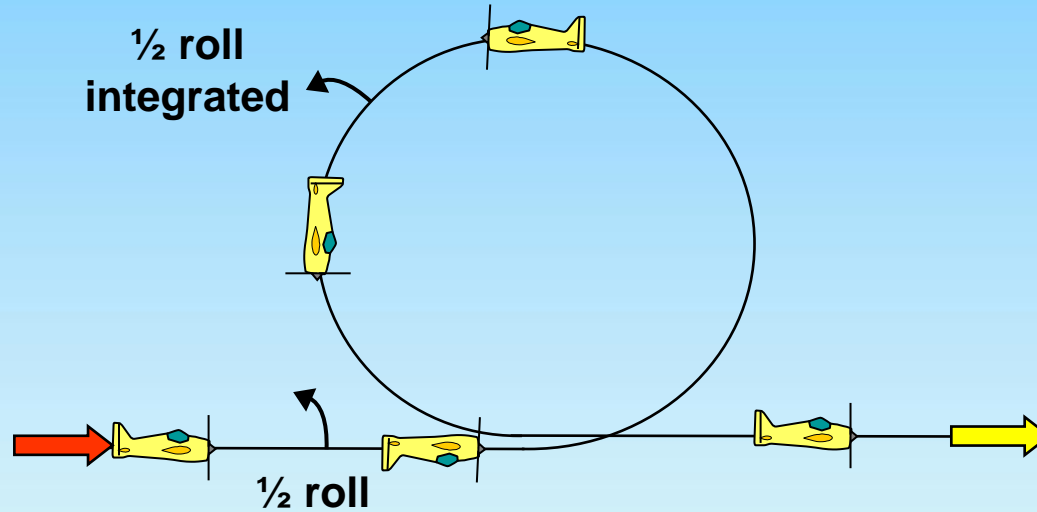
○ 1/2 roll on middle of the line.

From upright, pull through 1/4 loop into a vertical upline, pull through a 5/8 loop into a 45° downline, perform a 1/2 roll, pull through a 3/8 loop, exit upright.





N-25.17 Loop with two half rolls, the second roll integrated



From upright, perform $\frac{1}{2}$ roll, fly a short line inverted, push through a loop while performing an integrated $\frac{1}{2}$ roll in the third 90° , exit upright.

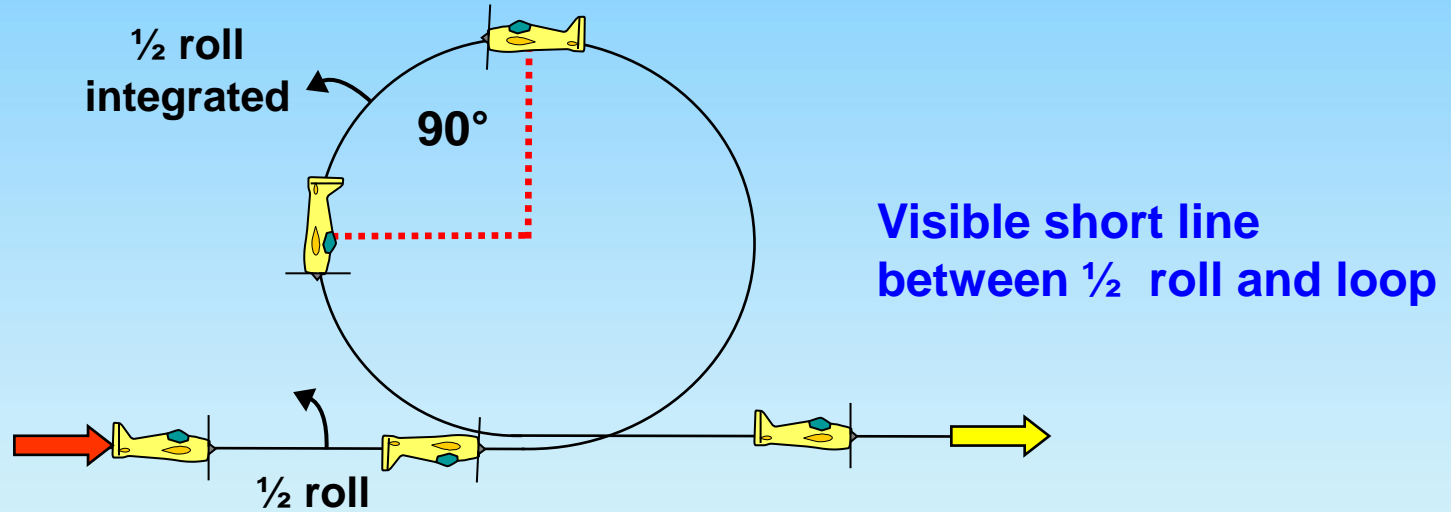




N-25.17 Loop with two half rolls, the second roll integrated

Loop must be round.

$\frac{1}{2}$ roll must be integrated on circular flightpath of the quarter loop



Visible short line between $\frac{1}{2}$ roll and loop

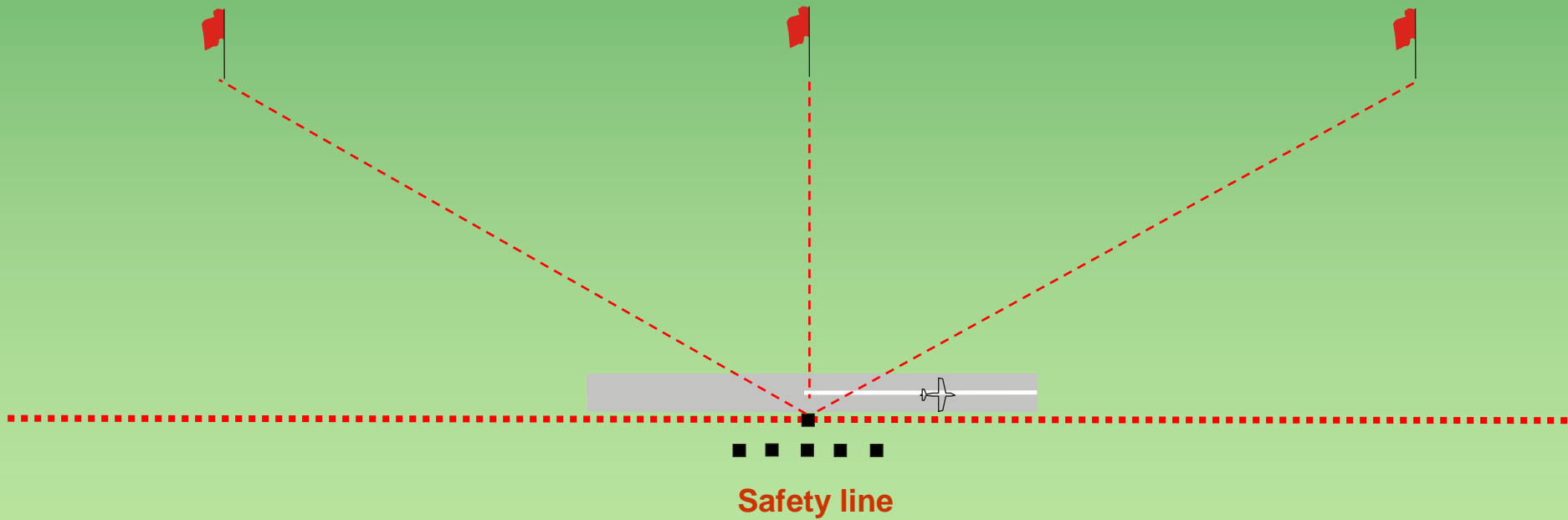
From upright, perform $\frac{1}{2}$ roll, fly a short line inverted, push through a loop while performing an integrated $\frac{1}{2}$ roll in the third 90° , exit upright.





Landing procedure (not judged, not scored)

The direction of the landing may be different to the take off.

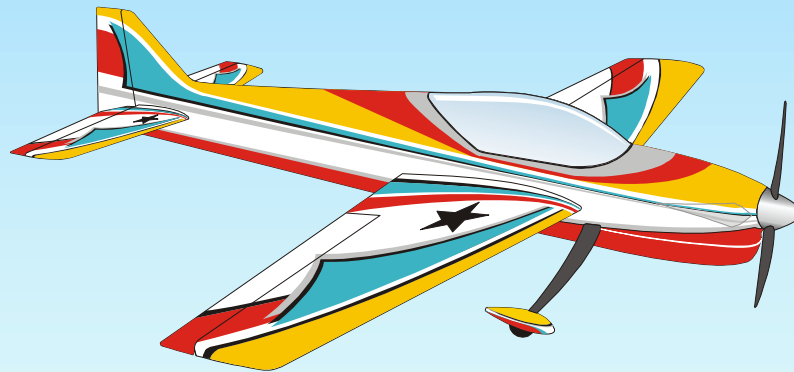


Forget **WHO** is flying
(friend, rival, countryman, flier from other nation)

Forget **WHAT** is flying
(2-stroke, 4-stroke, electric)

LOOK ONLY AT LINES DESCRIBED IN THE SKY!

Bob Skinner



Thank you!

© Ola Fremming, September 2023