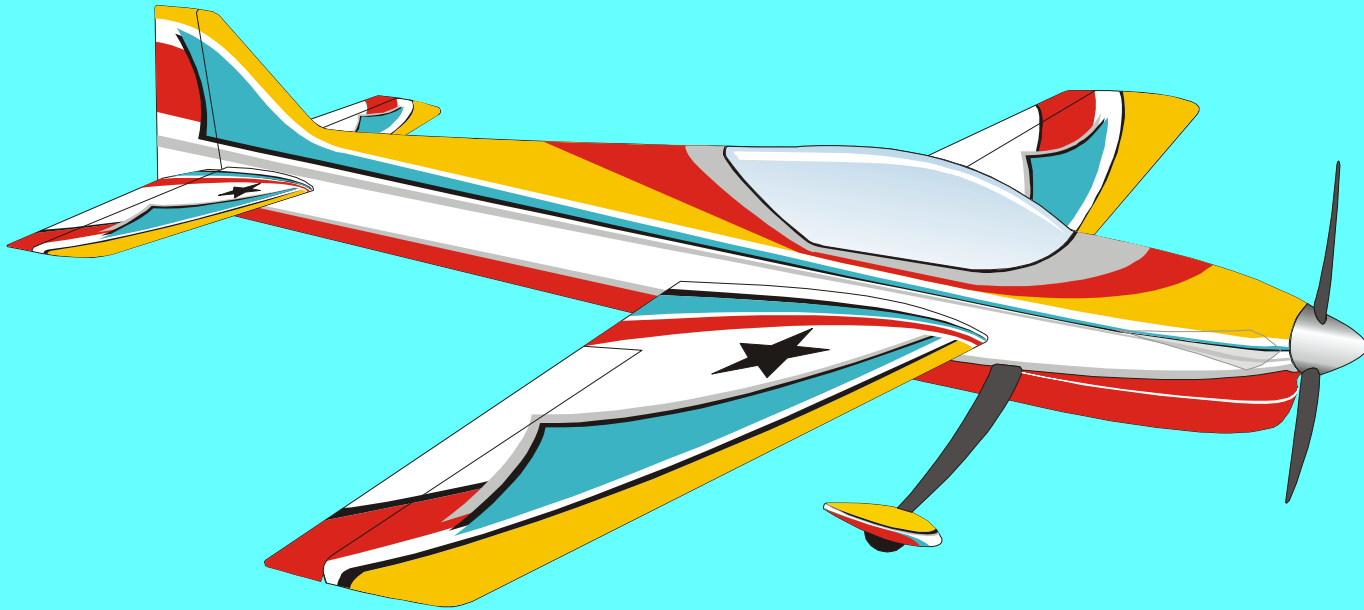
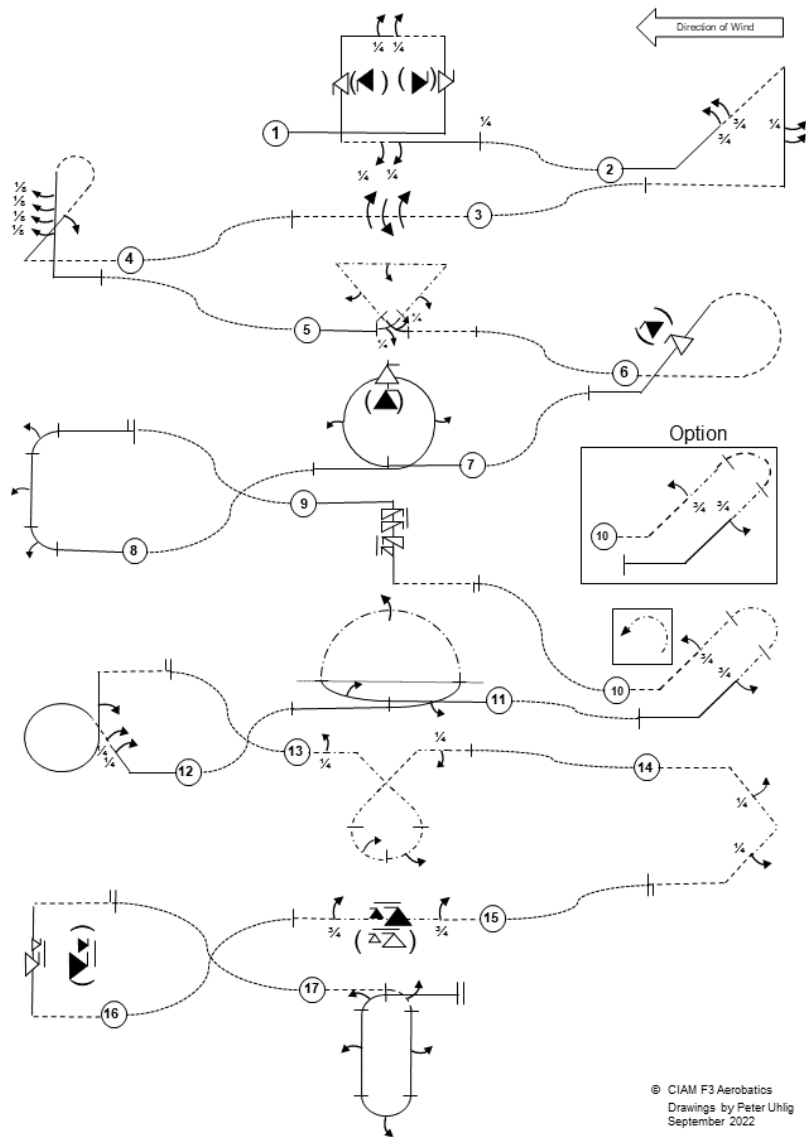


Flying and Judging F3A



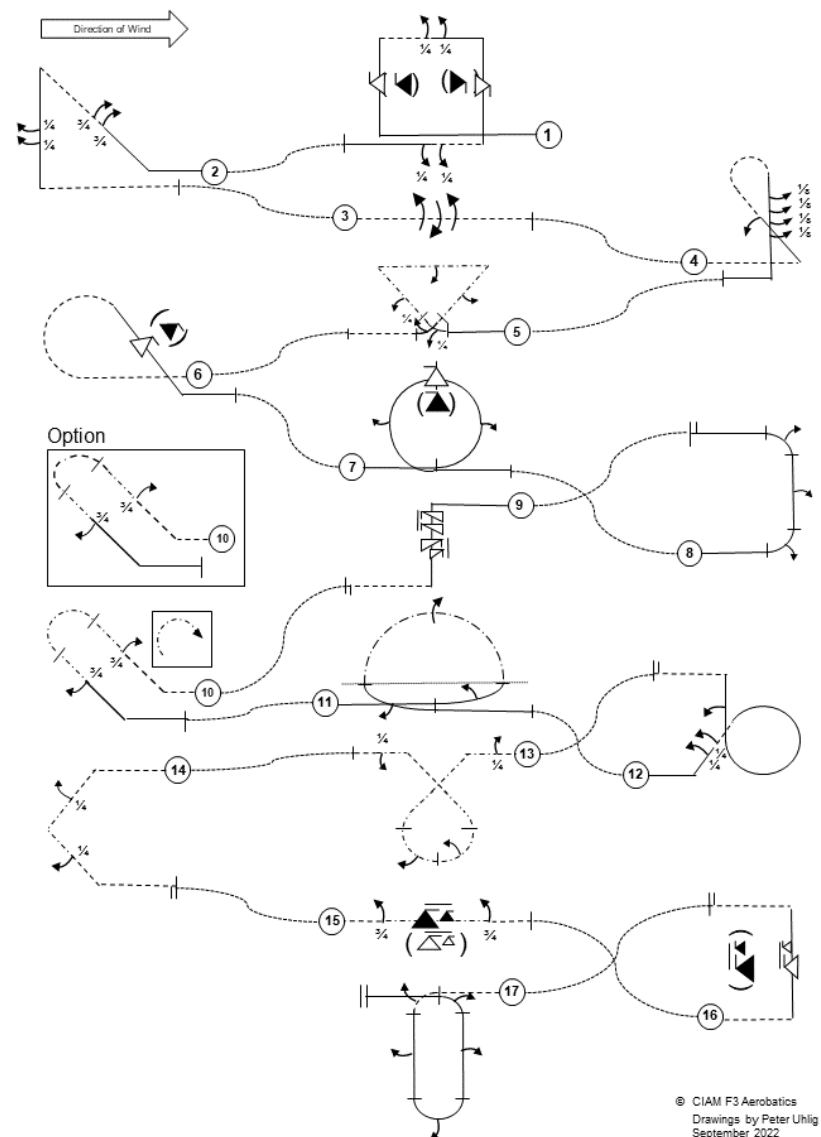
SCHEMATIC MANOEUVRE ILLUSTRATIONS
SCHEDULE F-27

FINAL SCHEDULE F3A F-27 (2026 – 2027)



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Drawings by Peter Uhlig
September 2022

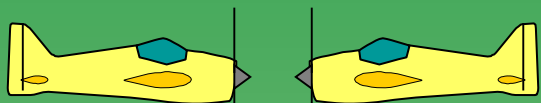
FINAL SCHEDULE F3A F-27 (2026 – 2027)



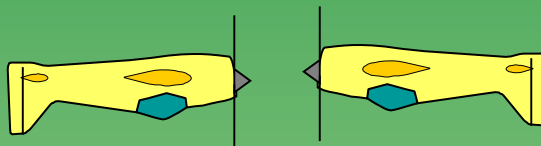
© CIAM F3 Aerobatics
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September 2022



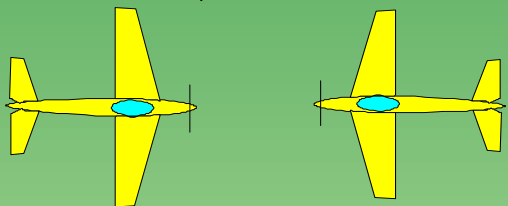
Explanations:



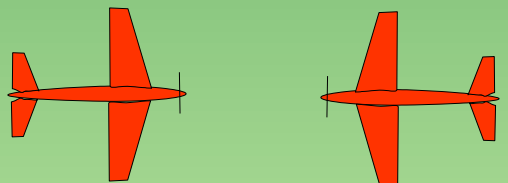
Aircraft upright



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



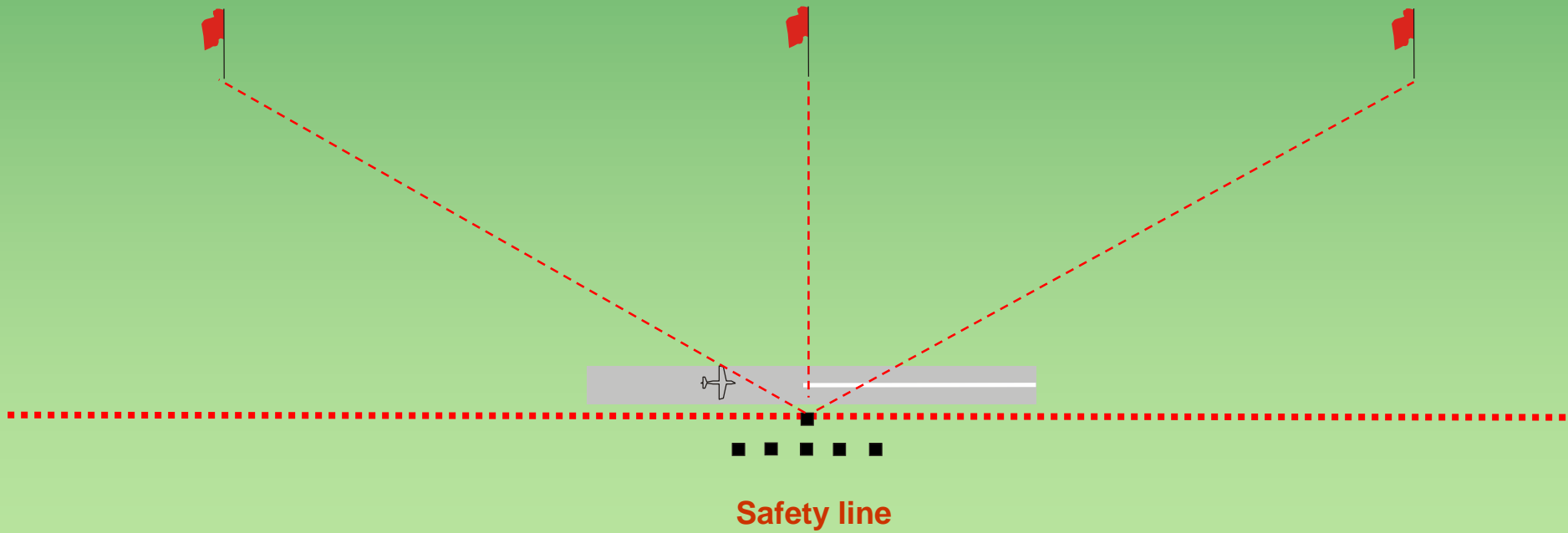
reference points



Take-off procedure (not judged, not scored)

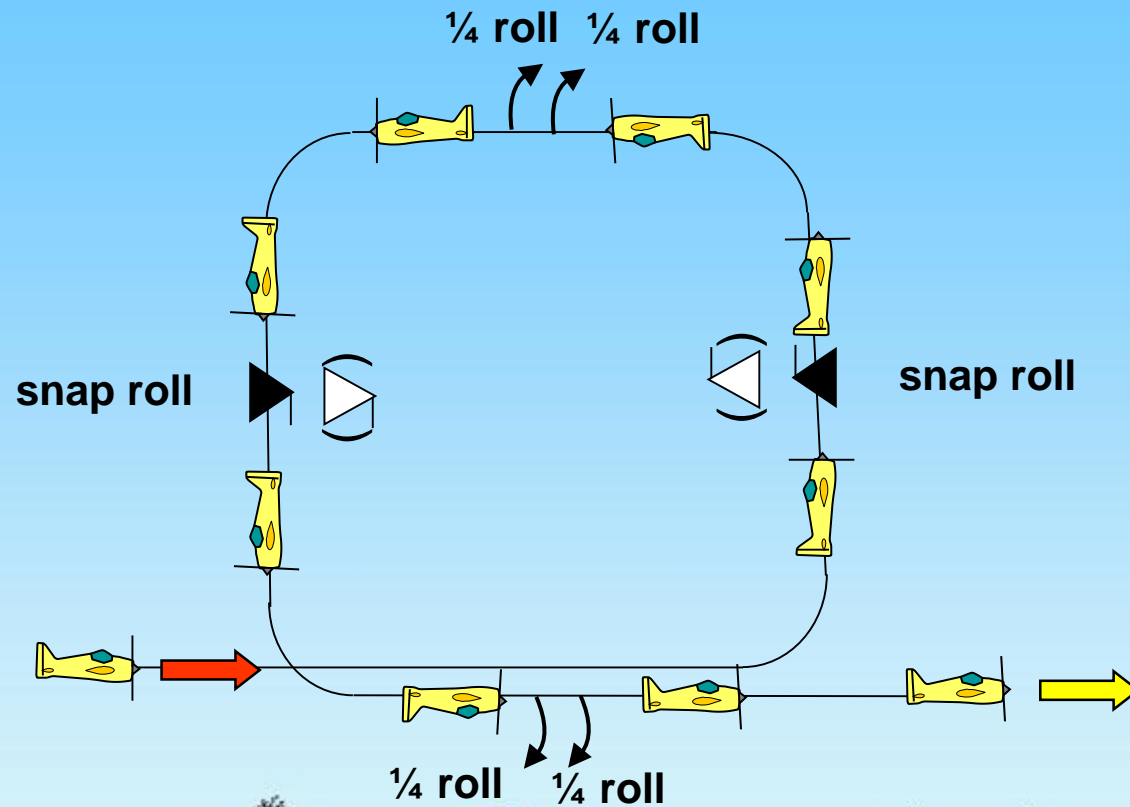


wind





F-27.01 Square Loop with snap roll, two quarter rolls, snap roll, two quarter rolls



From upright, fly past centre, pull through a $\frac{1}{4}$ loop into a vertical upline, perform a snap roll, pull through a $\frac{1}{4}$ loop, perform consecutively two $\frac{1}{4}$ rolls, push through a $\frac{1}{4}$ loop into a vertical downline, perform a snap roll, push through a $\frac{1}{4}$ loop, perform consecutively two $\frac{1}{4}$ rolls, exit upright.



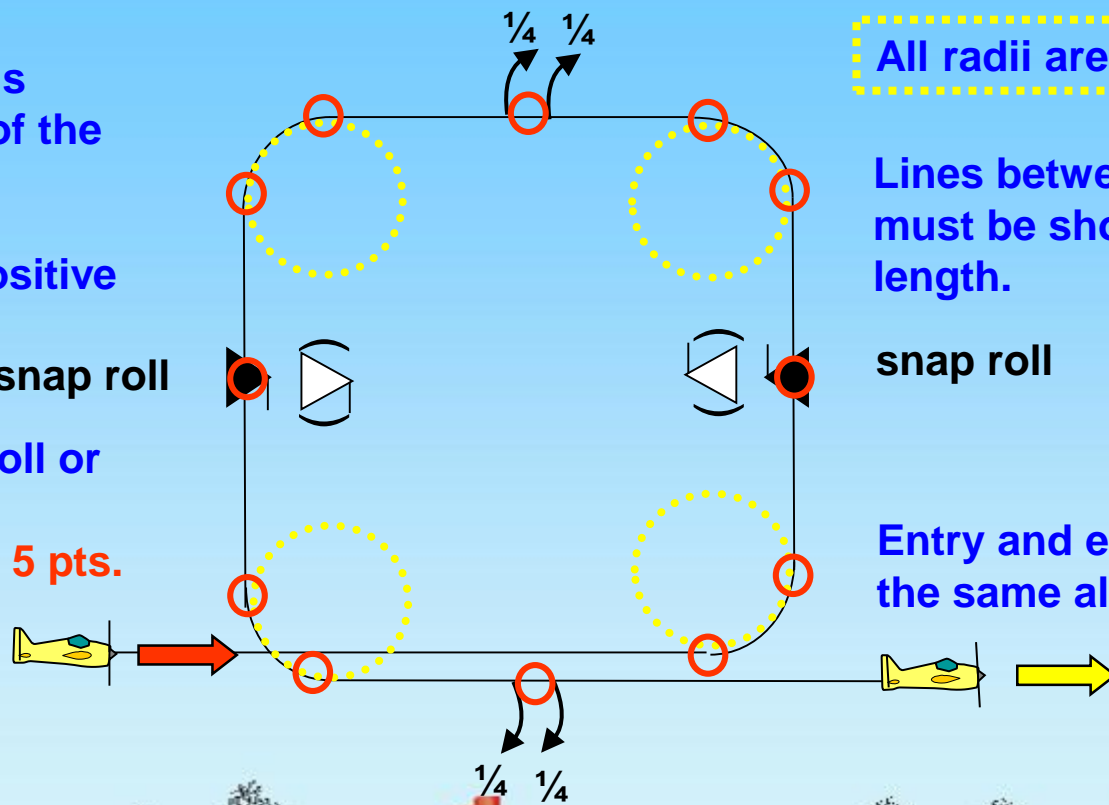
F-27.01 Square Loop with snap roll, two quarter rolls, snap roll, two quarter rolls

Snap rolls and $\frac{1}{4}$ rolls centered on middle of the lines.

Snap rolls may be positive or negative.

If snap roll = barrel roll or aileron roll:
Severe downgrade > 5 pts.

snap roll



All radii are equal.

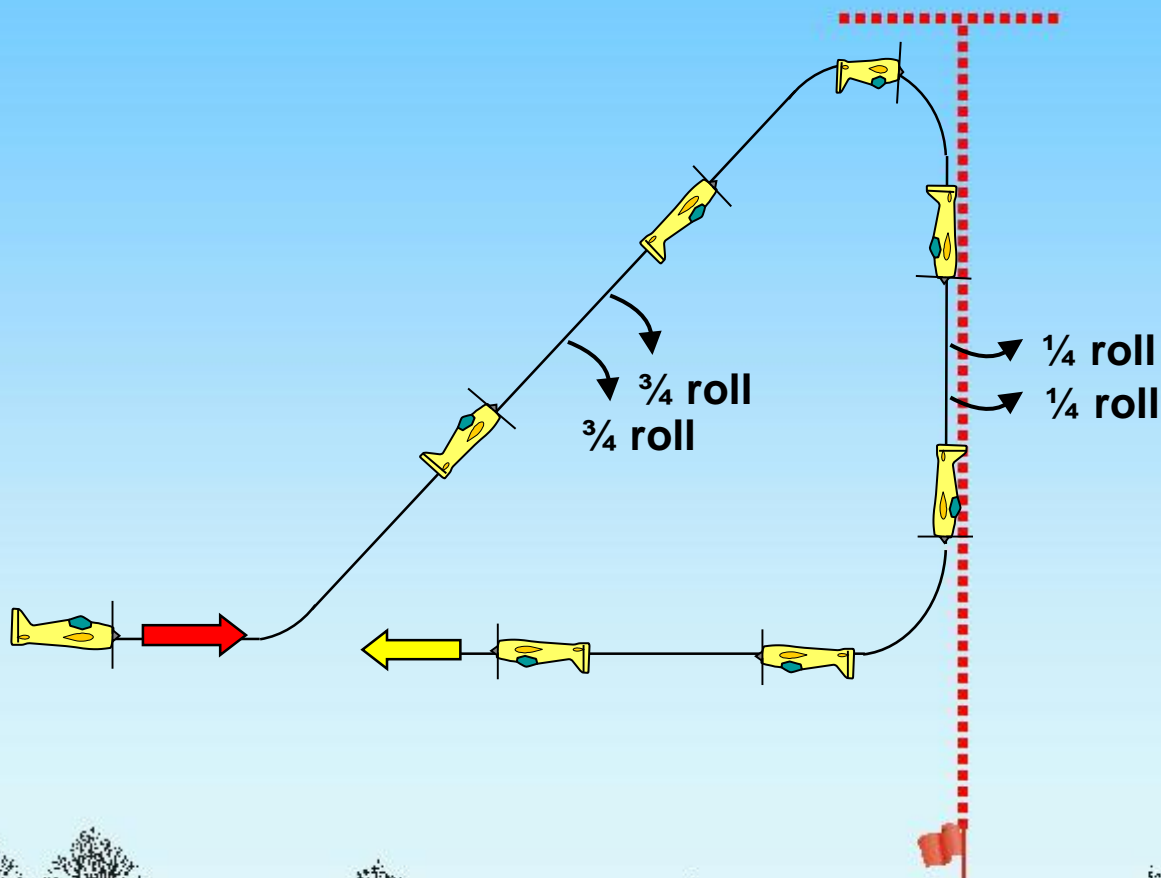
Lines between part rolls must be short and of equal length.

snap roll

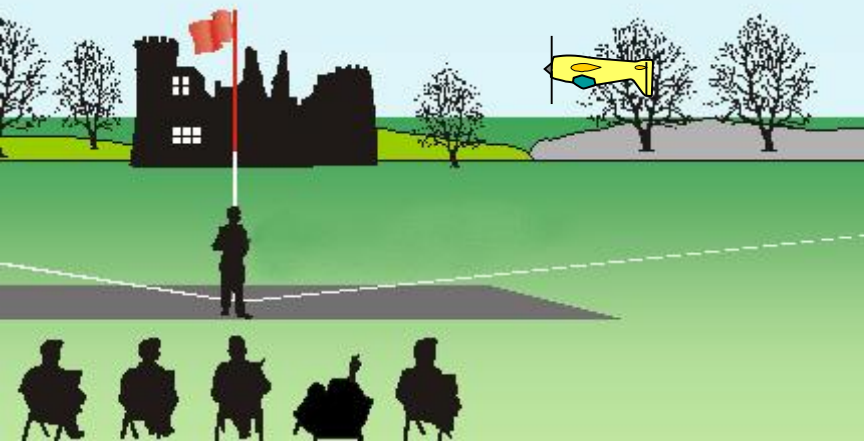
Entry and exit must be at the same altitude.



F-27.02 Reverse Shark Fin with two three quarter rolls, two quarter rolls



From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform consecutively two $\frac{3}{4}$ rolls, pull through a $\frac{3}{8}$ loop into a vertical downline, perform consecutively two $\frac{1}{4}$ rolls, push through a $\frac{1}{4}$ loop, exit inverted.



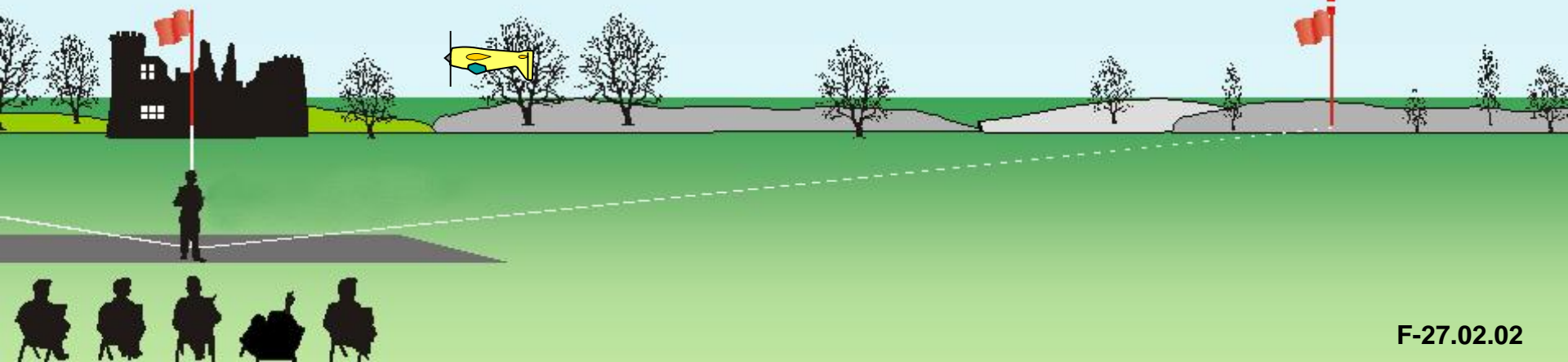
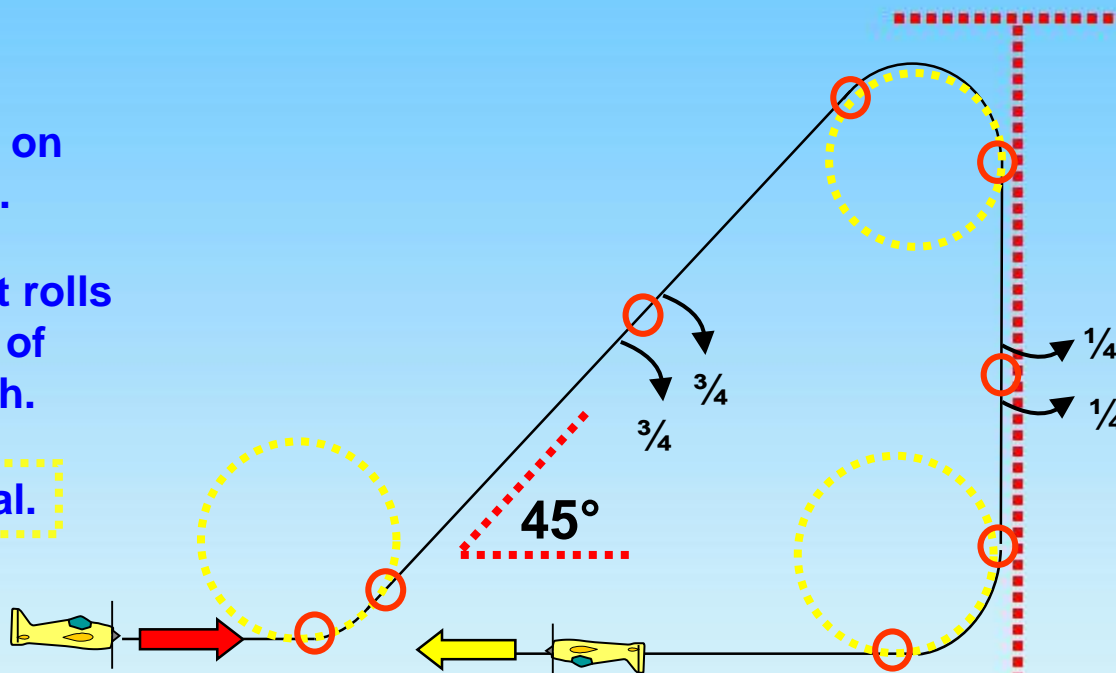


F-27.02 Reverse Shark Fin with two three quarter rolls, two quarter rolls

Part rolls centered on middle of the lines.

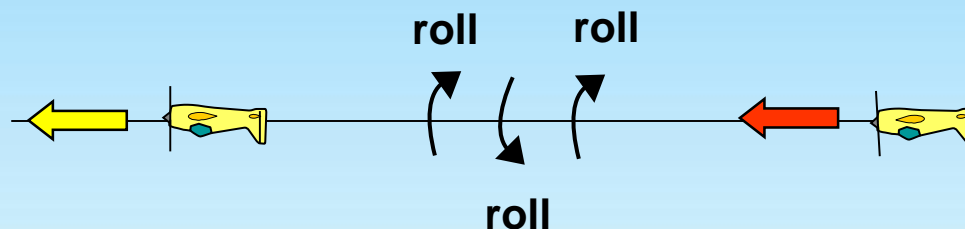
Lines between part rolls must be short and of recognizable length.

All radii are equal.





F-27.03 Roll Combination with three rolls in opposite directions



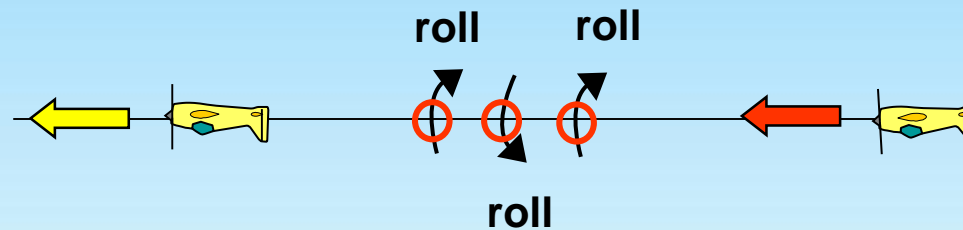
From inverted, perform consecutively a roll, a second roll in opposite direction, a third roll in opposite direction to the second roll, exit inverted.



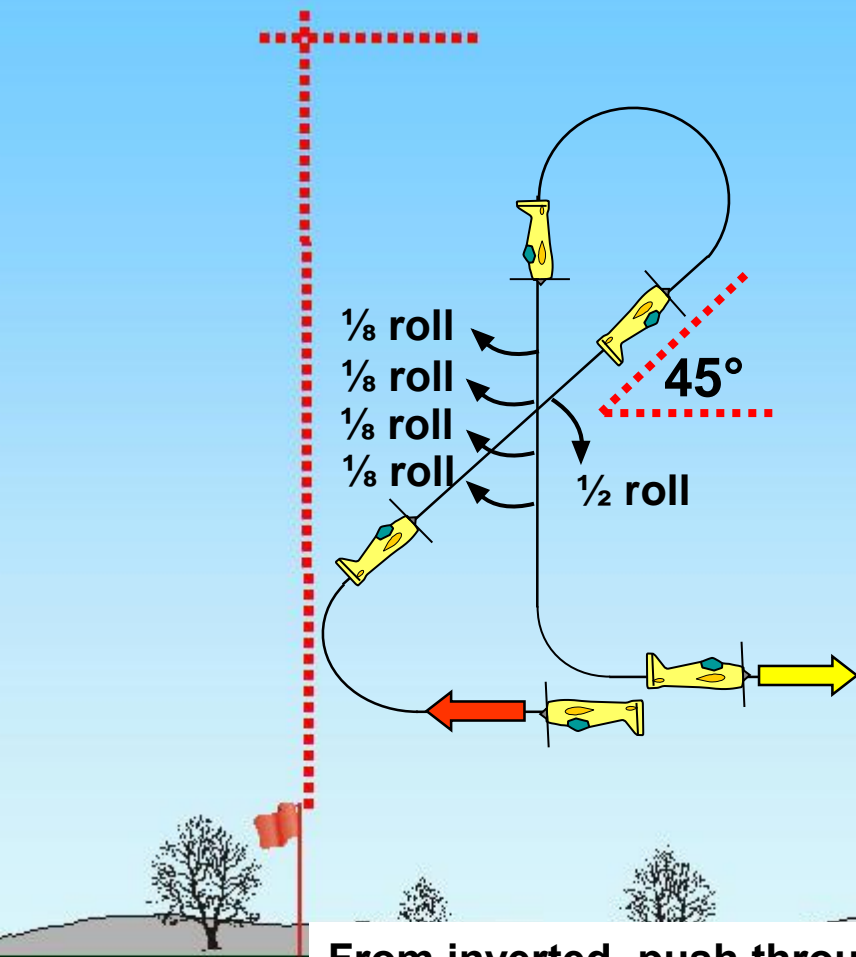


F-27.03 Roll Combination with three rolls in opposite directions

Between rolls in opposite direction there must be no line.

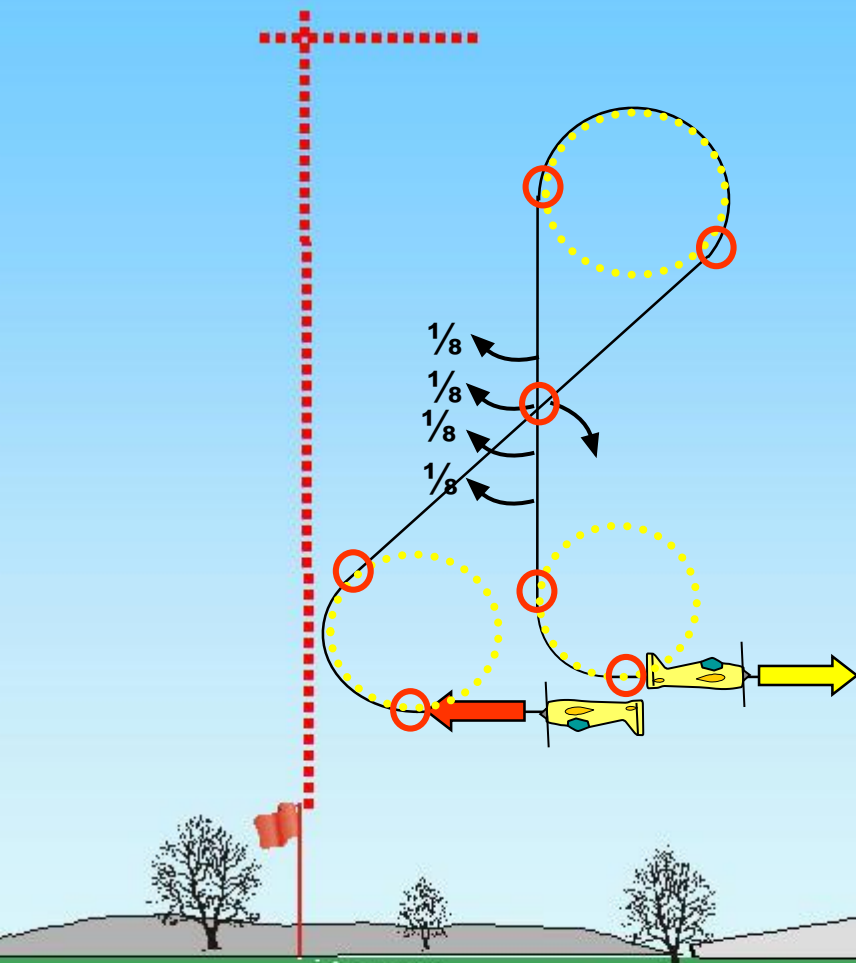


F-27.04 Figure ET with half roll, four one eighth rolls



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

F-27.04 Figure ET with half roll, four one eighth rolls



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

$\frac{1}{8}$ rolls centered on middle of the line.

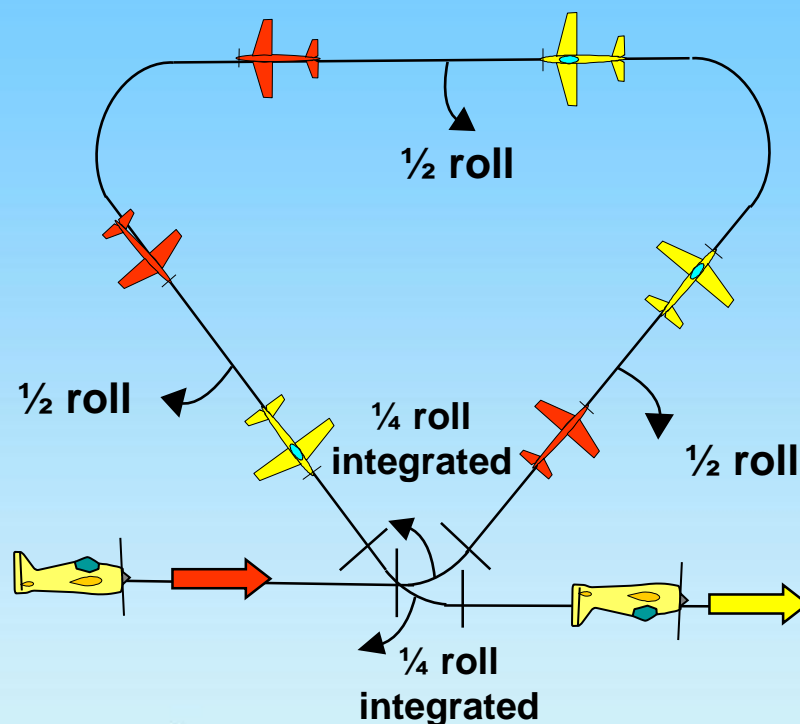
Lines between part rolls must be short and of equal length.

All radii are equal.





F-27.05 Triangle with quarter roll integrated, half roll, half roll, half roll, quarter roll integrated



From upright, at centre, pull through a $\frac{1}{8}$ loop while integrating a $\frac{1}{4}$ roll into a 45° knife-edge upline, perform a $\frac{1}{2}$ roll, perform a $\frac{3}{8}$ knife-edge loop, perform a $\frac{1}{2}$ roll, perform a $\frac{3}{8}$ knife-edge loop into a 45° knife edge downline, perform a $\frac{1}{2}$ roll, perform a $\frac{1}{8}$ knife edge loop while integrating a $\frac{1}{4}$ roll, exit inverted.





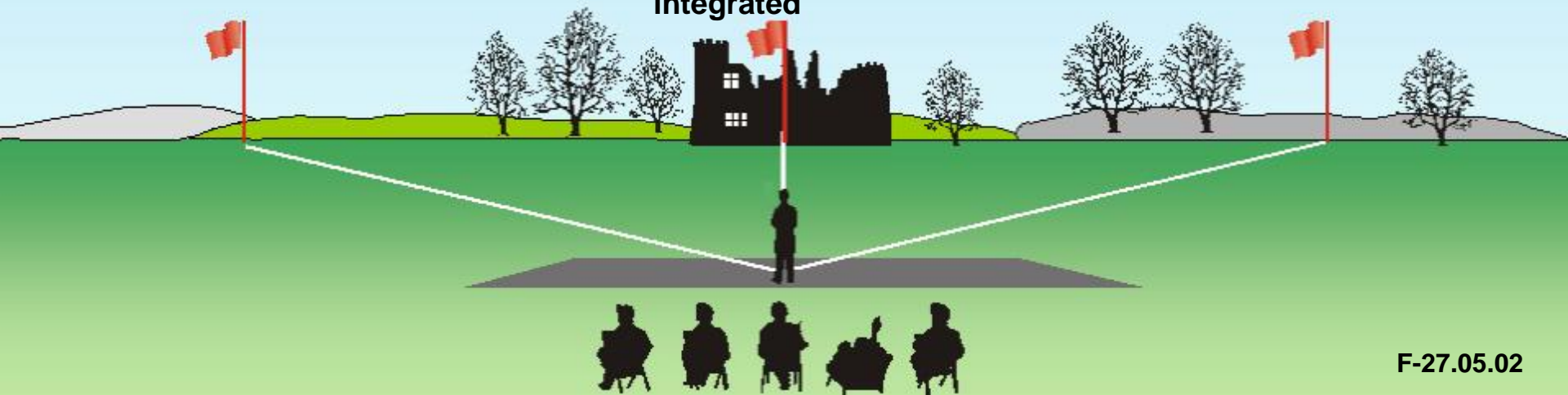
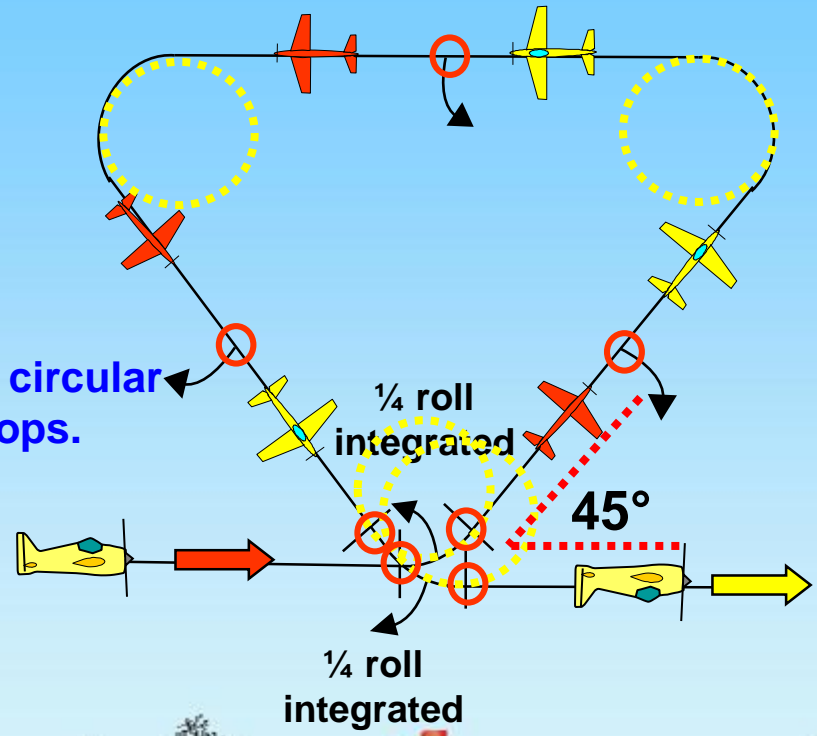
F-27.05 Triangle with quarter roll integrated, half roll, half roll, half roll, quarter roll integrated

1/2 rolls on middle of the line.

Part rolls integrated on circular flightpath of the part loops.

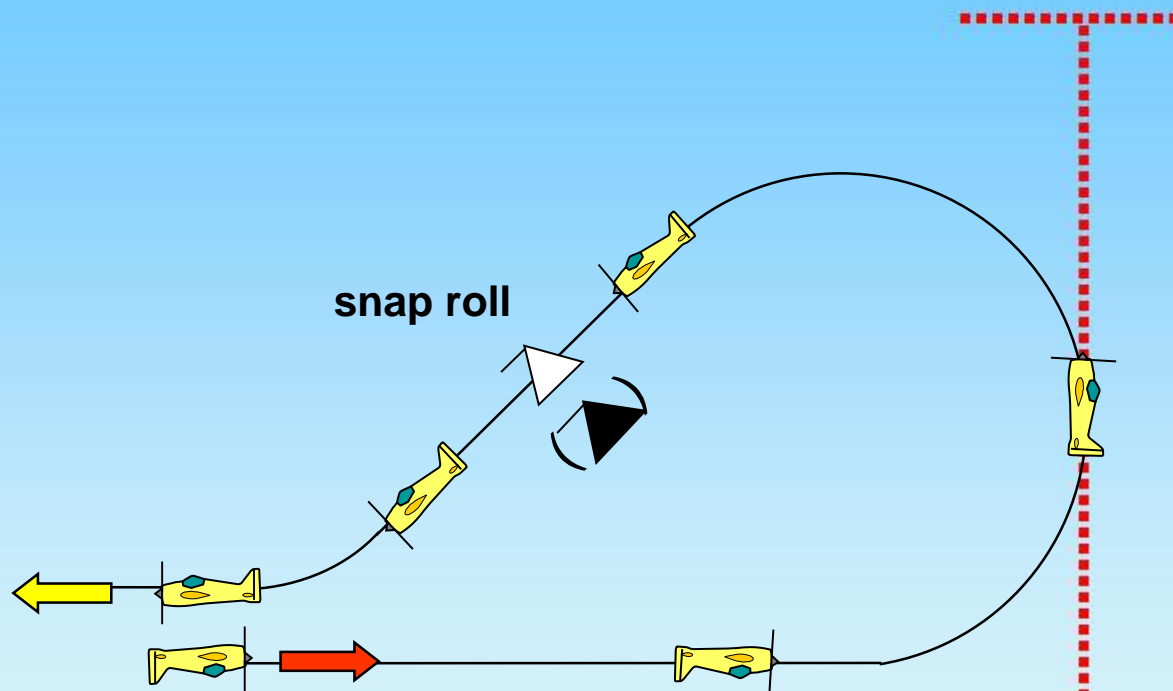
During Knife Edge the wing must be in the vertical plane.

All radii are equal.





F-27.06 Half Cuban eight with snap roll



From inverted push through a $\frac{5}{8}$ loop into a 45° downline, perform a snap roll, pull through a $\frac{1}{8}$ loop, exit upright.



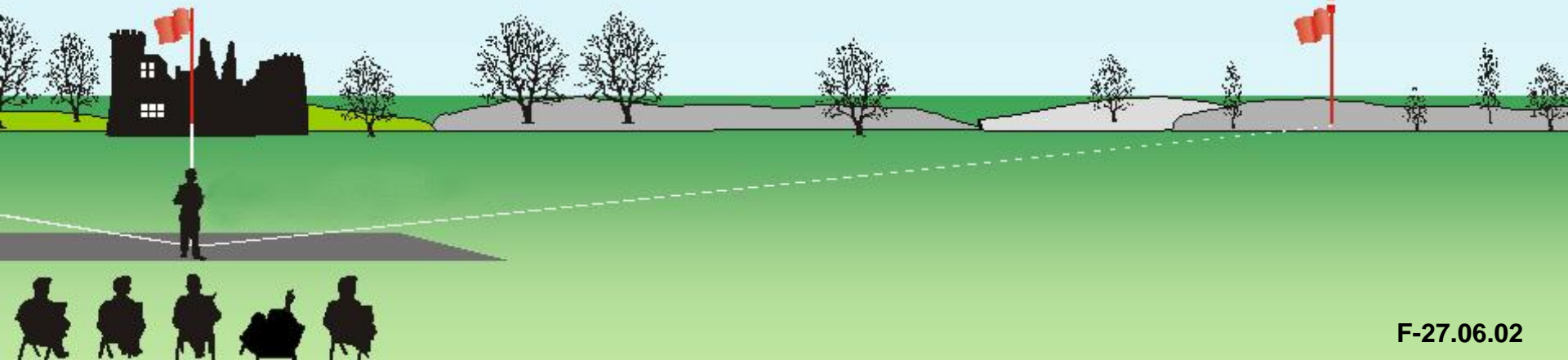
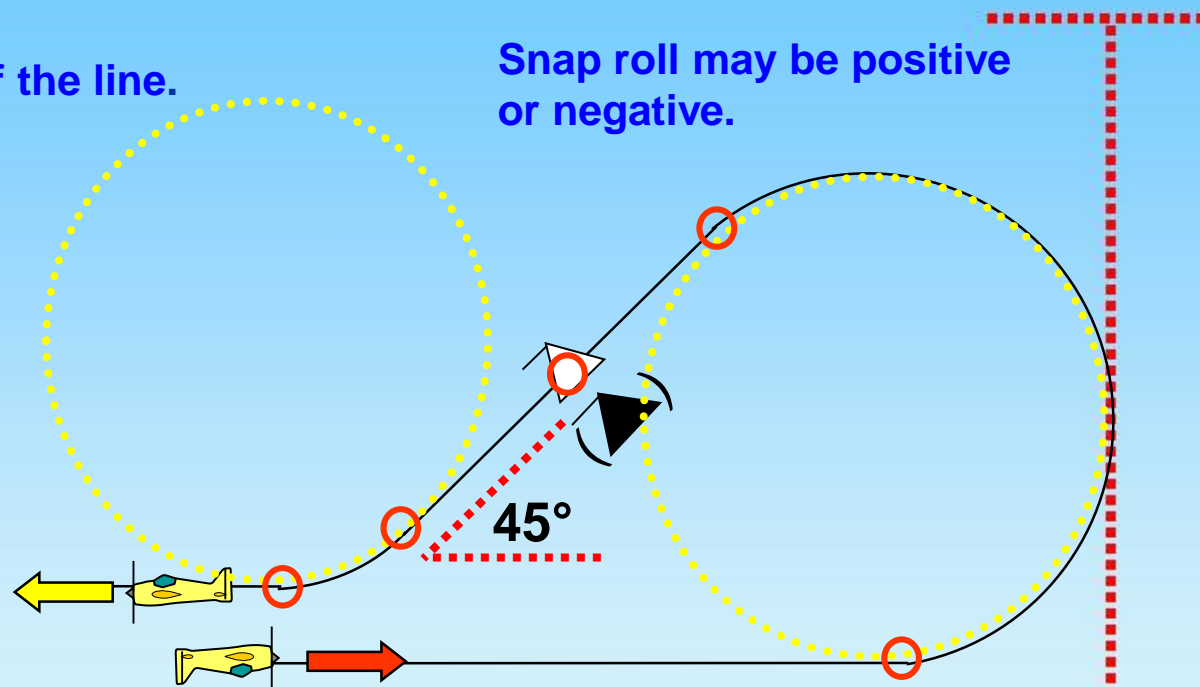
F-27.06 Half Cuban eight with snap roll

Snap roll on middle of the line.

If snap roll = barrel
roll or aileron roll:
Severe downgrade >
5 pts.

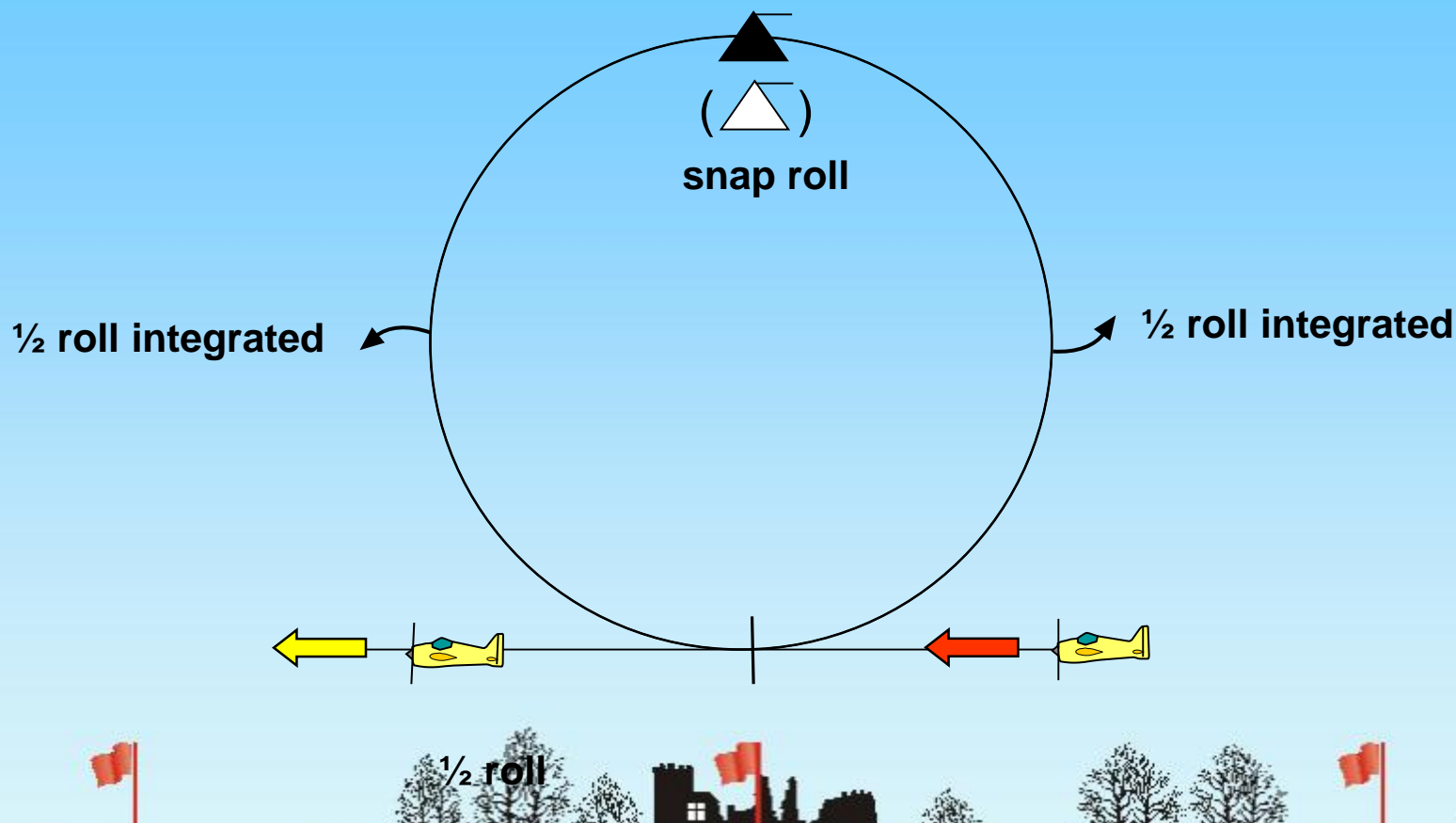
All radii are equal.

Snap roll may be positive
or negative.





F-27.07 Loop with half roll integrated, snap roll, half roll integrated



From upright, pull through a loop while integrating a $\frac{1}{2}$ roll in the first half of the loop, perform a snap roll, finish the loop while integrating another $\frac{1}{2}$ roll in the second half of the loop, exit upright.

Note: The direction of the integrated $\frac{1}{2}$ rolls and the snap rolls is at the pilot's discretion.



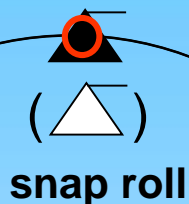


F-27.07 Loop with half roll integrated, snap roll, half roll integrated

Loop must be round.
The $\frac{1}{2}$ rolls must be integrated on circular flightpath of the half loops.

Snap roll may be positive or negative.
If snap roll = barrel roll or aileron roll:
Severe downgrade > 5 pts.

$\frac{1}{2}$ roll integrated



$\frac{1}{2}$ roll integrated



The direction of the integrated $\frac{1}{2}$ rolls and the snap roll is at the pilot's discretion.

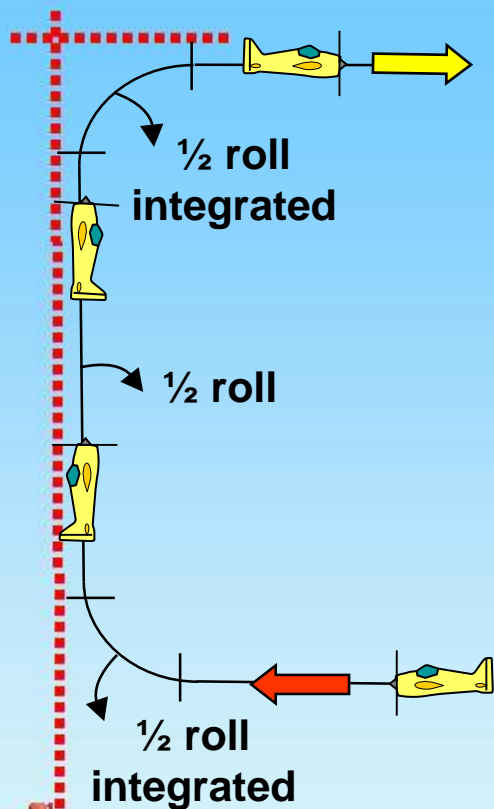


$\frac{1}{2}$ roll

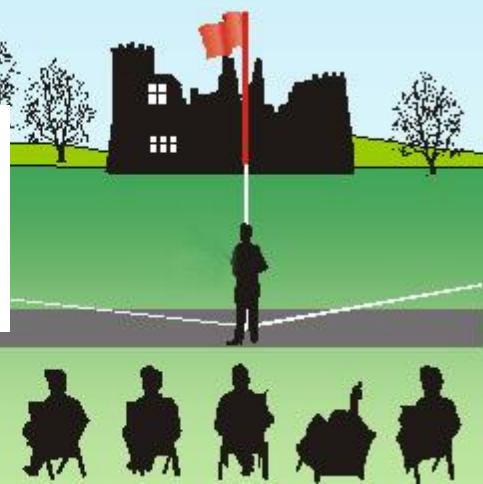




F-27.08 Half Square Loop with half roll integrated, half roll, half roll integrated

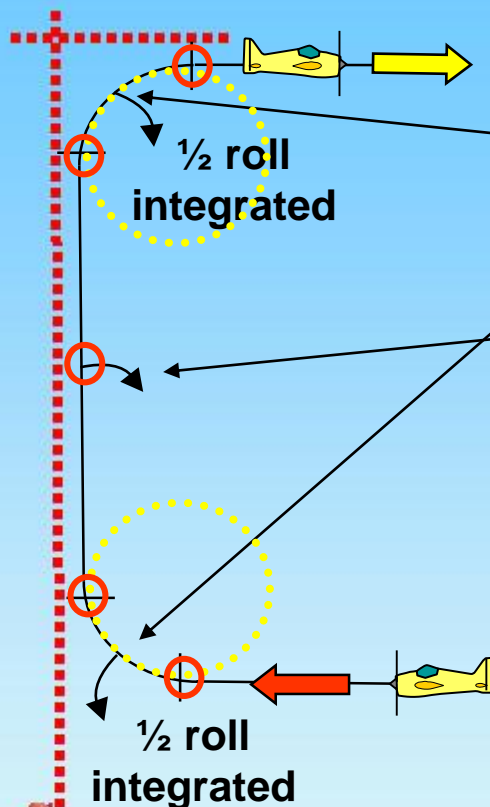


From upright, pull through a $\frac{1}{4}$ loop into a vertical upline while integrating a $\frac{1}{2}$ roll, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop while integrating a $\frac{1}{2}$ roll, exit upright.





F-27.08 Half Square Loop with half roll integrated, half roll, half roll integrated



The $\frac{1}{2}$ rolls must be integrated on circular flightpath of the $\frac{1}{4}$ loops.

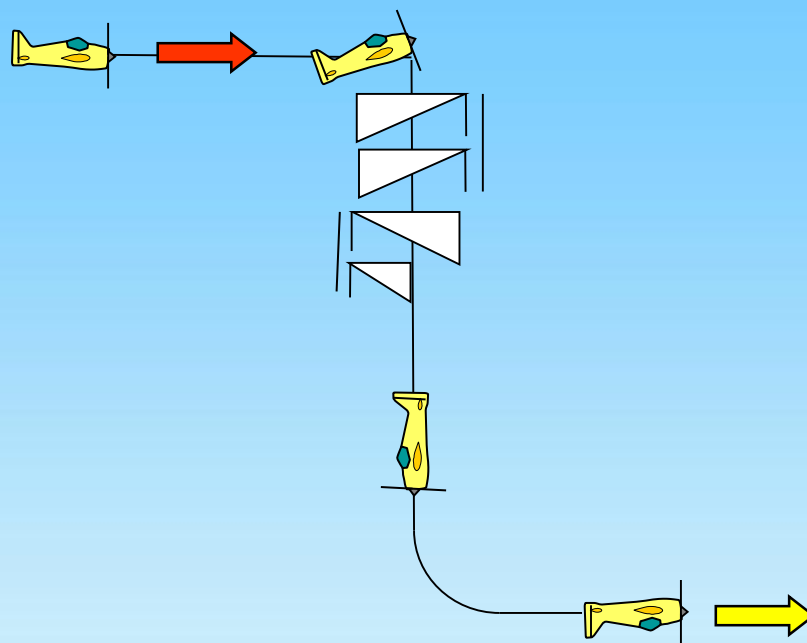
$\frac{1}{2}$ roll on middle of the line.

All radii are equal.





F-27.09 Spin with two turns, one and a half turn in opposite direction

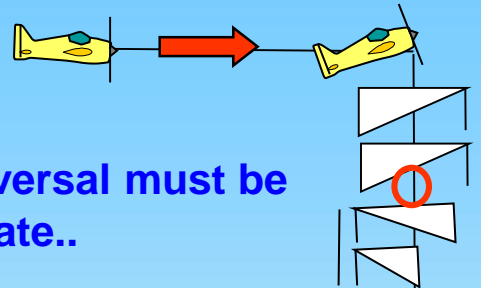


From upright, perform a two turn spin, perform immediately another 1 ½ turn spin in the opposite direction, perform a vertical downline, push through a ¼ loop, exit inverted.





F-27.09 Spin with two turns, one and a half turn in opposite direction



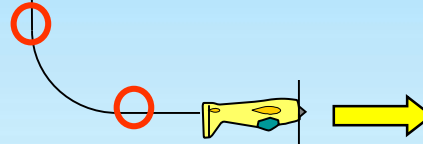
Spin reversal must be immediate..

Line after the spins.

Snap entry - 0 points!

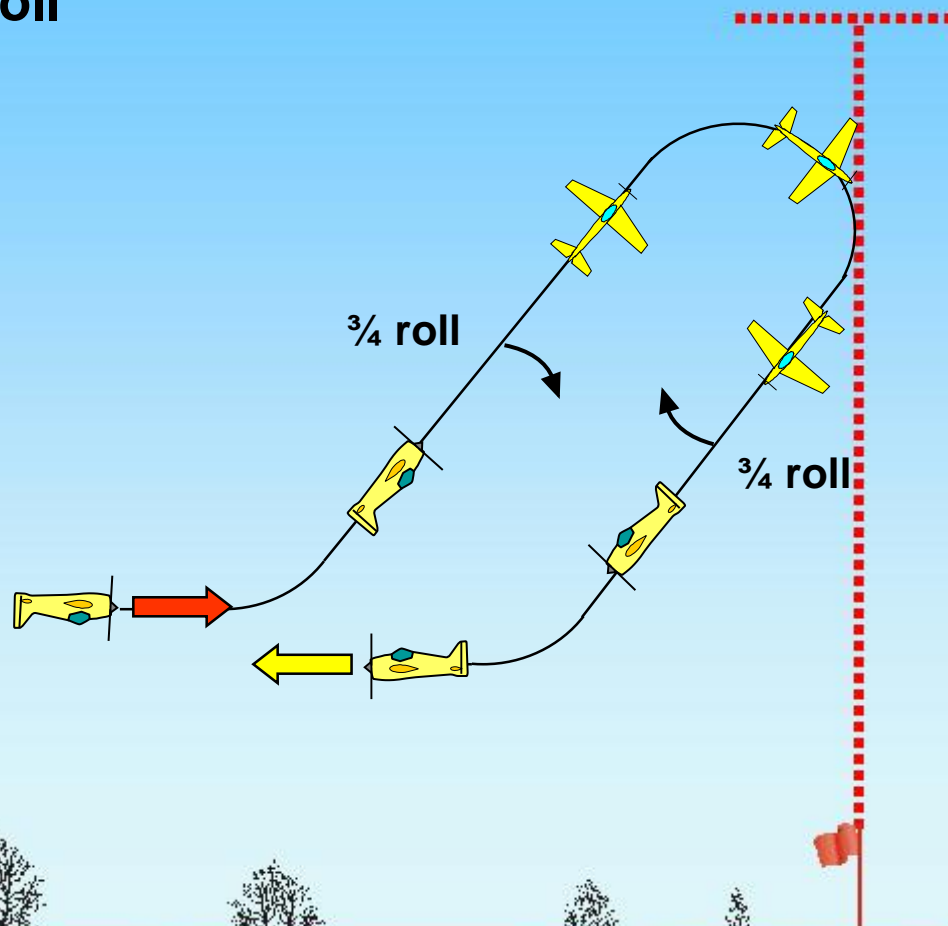
Spiral dive - 0 points!

Forced entry: downgrade.





F-27.10 Trombone with three quarter roll, three quarter roll. Option: Fighter turn with three quarter roll, three quarter roll

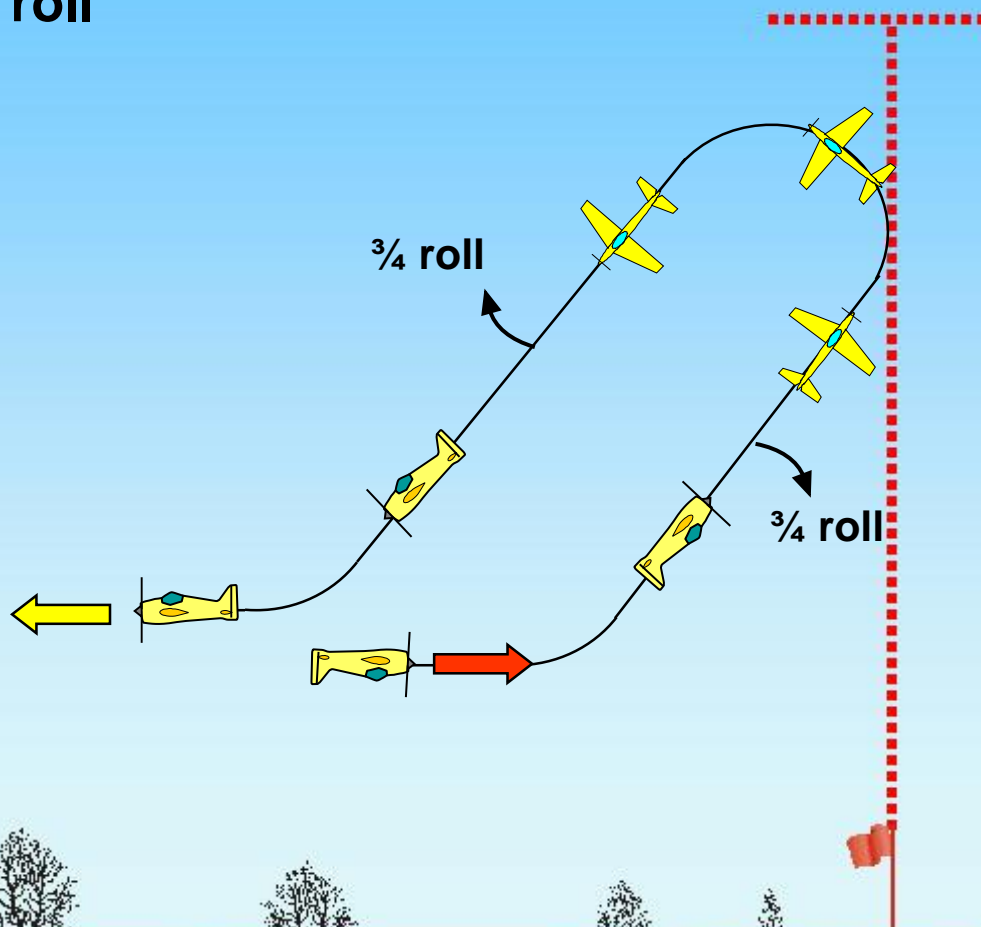


From inverted, push through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{3}{4}$ roll, perform a half knife-edge loop into a 45° knife-edge downline, perform a $\frac{3}{4}$ roll, pull through a $\frac{1}{8}$ loop, exit upright.



F-27.10 Trombone with three quarter roll, three quarter roll. Option: Fighter turn with three quarter roll, three quarter roll

or



From inverted, push through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{3}{4}$ roll, perform a half knife-edge loop into a 45° knife-edge downline, perform a $\frac{3}{4}$ roll, pull through a $\frac{1}{8}$ loop, exit upright.

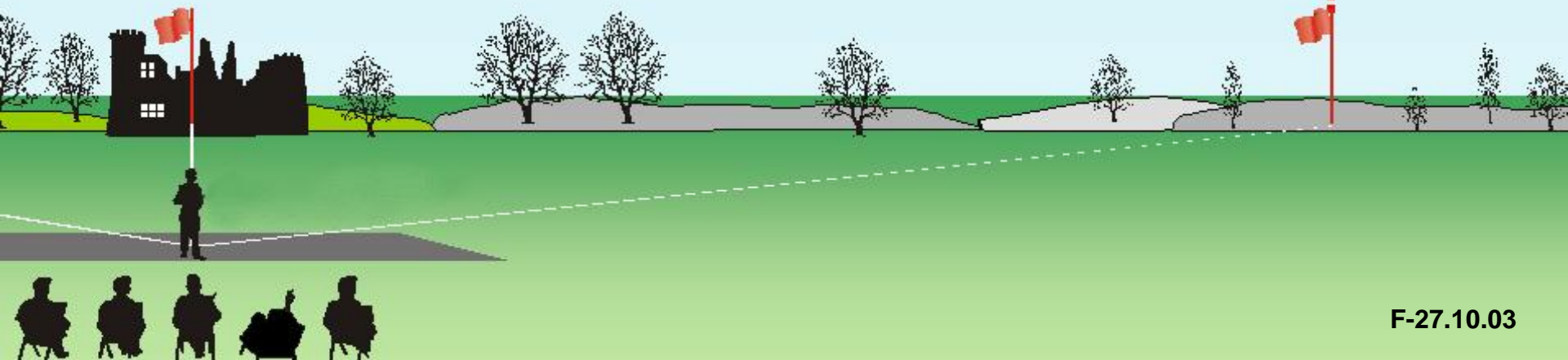
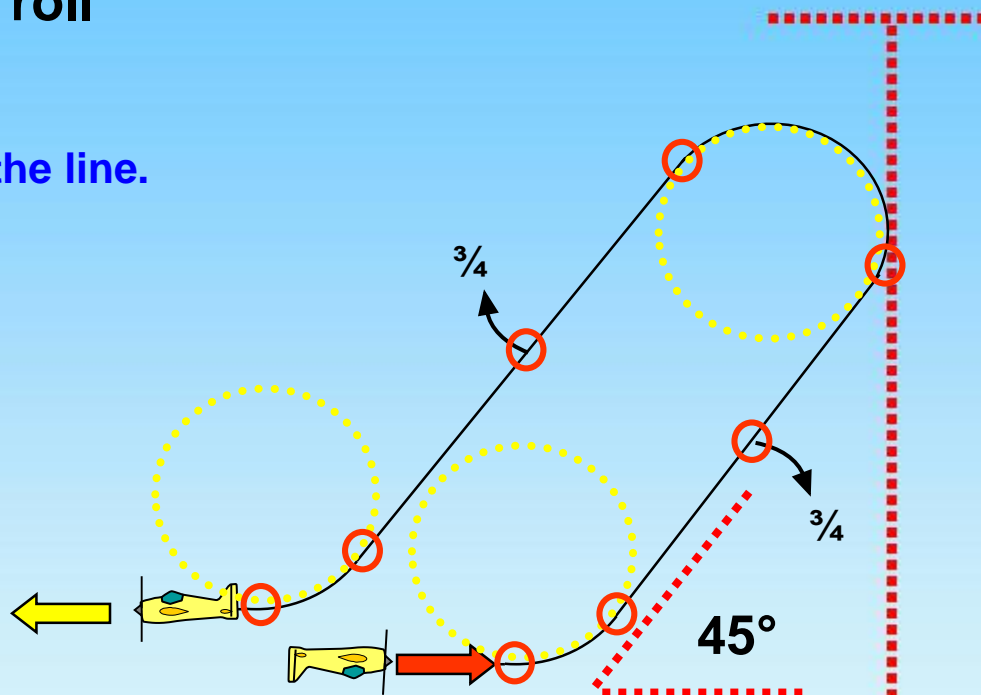


F-27.10 Trombone with three quarter roll, three quarter roll. Option: Fighter turn with three quarter roll, three quarter roll

Part rolls on middle of the line.

During Knife Edge the wing must be in the vertical plane.

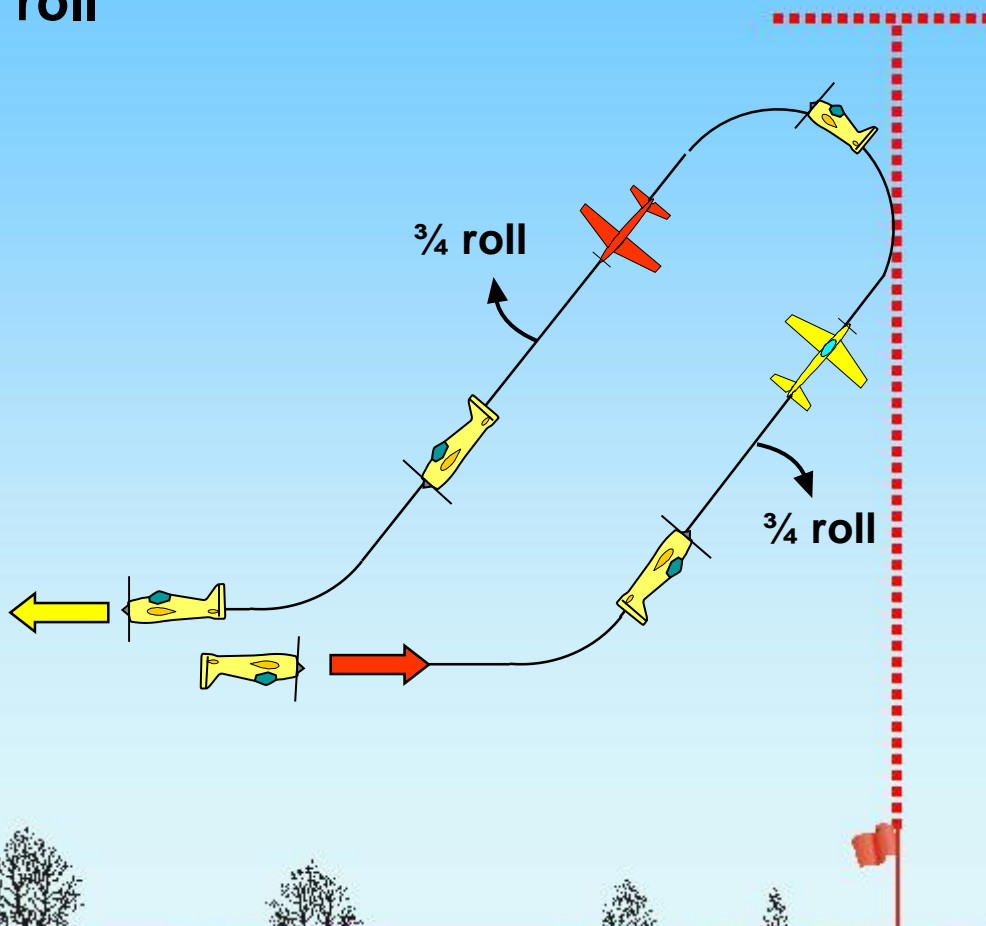
All radii are equal.





F-27.10 Trombone with three quarter roll, three quarter roll. Option: Fighter turn with three quarter roll, three quarter roll

Option



From inverted, push through a $\frac{1}{8}$ loop into a 45° upline, perform a $\frac{3}{4}$ roll, perform a half pushed knife edge circle into a 45° knife-edge downline, perform a $\frac{3}{4}$ roll, pull through a $\frac{1}{8}$ loop, exit upright.

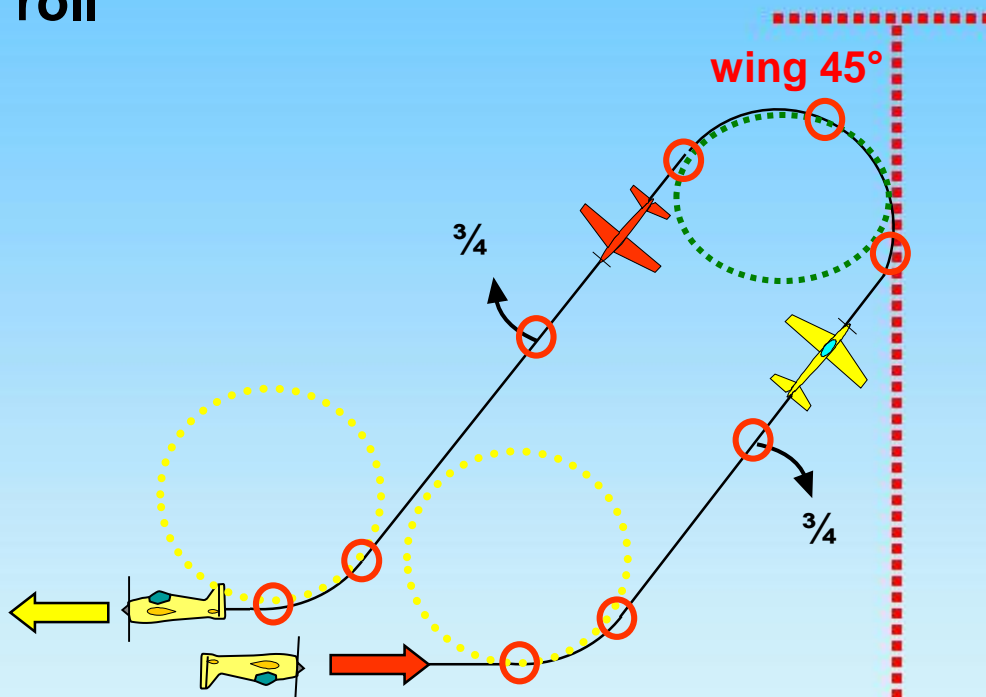


F-27.10 Trombone with three quarter roll, three quarter roll. Option: Fighter turn with three quarter roll, three quarter roll

Option

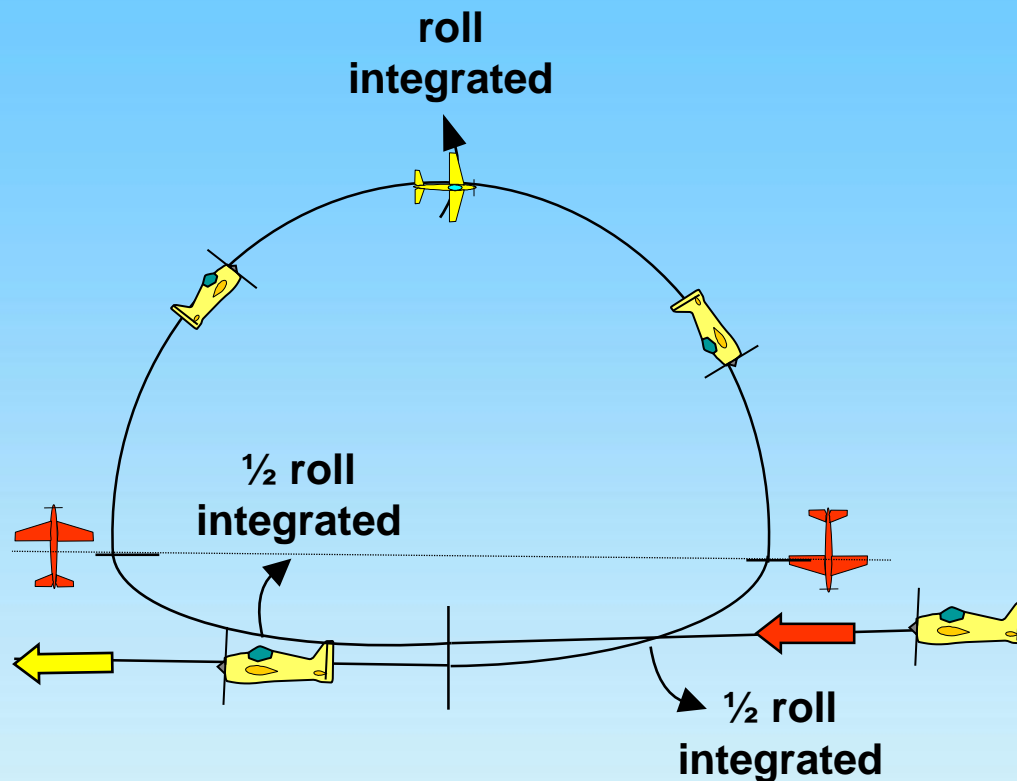
$\frac{3}{4}$ rolls on middle of the line.

The radii of the part loops are equal.





F-27.11 Rolling Circle Rolling Loop Combination



From upright, in the centre, perform a $\frac{1}{4}$ circle while integrating a half roll to the inside, push through a $\frac{1}{4}$ loop, into a half knife-edge loop while integrating a roll, push through a $\frac{1}{4}$ loop, perform a $\frac{1}{4}$ circle while integrating a $\frac{1}{2}$ roll to the outside, exit upright.

Note: There are no straight lines in the manoeuvre (except entry and exit lines). The Radii of the $\frac{1}{4}$ loops are smaller than the radius of the rolling loop.

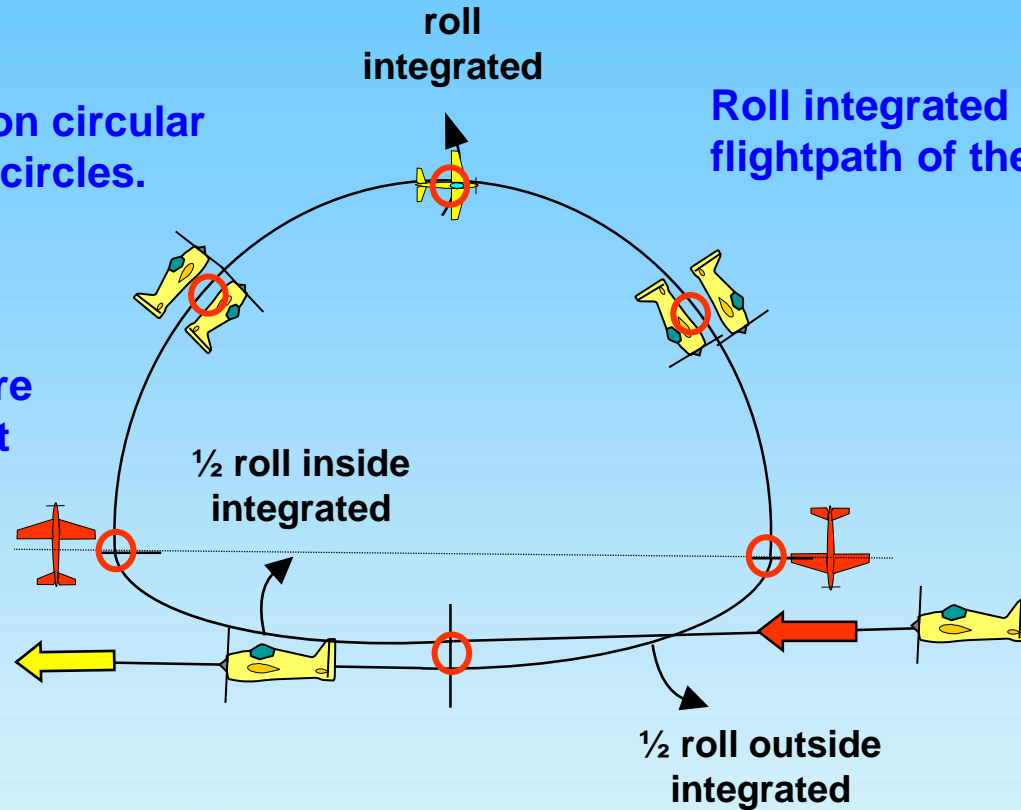


F-27.11 Rolling Circle Rolling Loop Combination

Part rolls integrated on circular flightpath of the part circles.

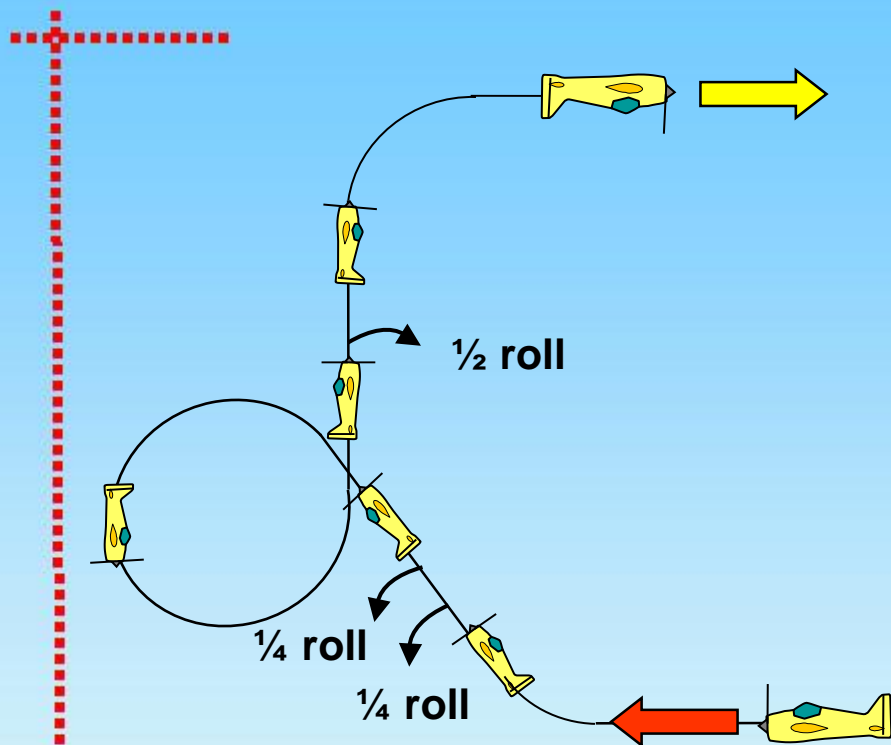
Roll integrated on circular flightpath of the part loop.

There are no straight lines in the manoeuvre (except entry and exit lines)

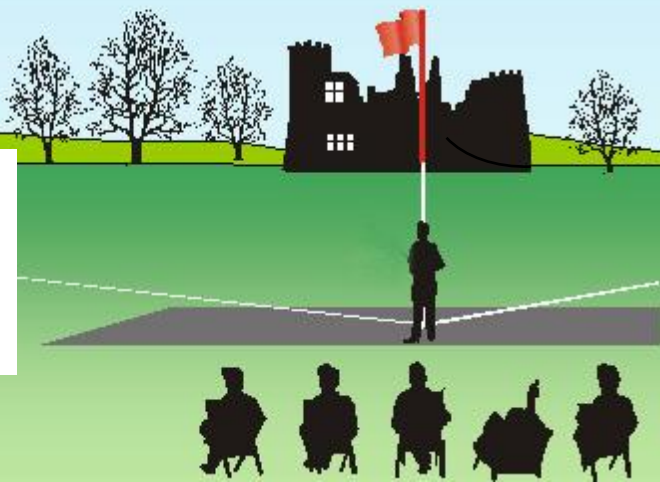




F-27.12 Inverted Figure ET with two quarter rolls, half roll

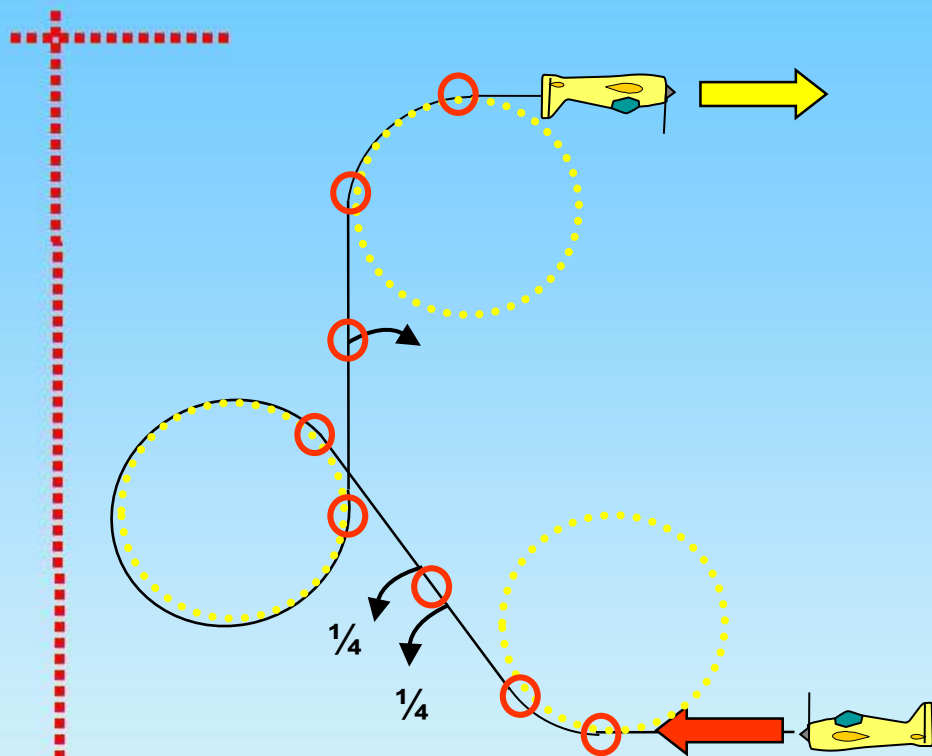


From upright, pull through a $\frac{1}{8}$ loop into a 45° upline, perform consecutively two $\frac{1}{4}$ rolls, pull through a $\frac{7}{8}$ loop into a vertical upline, perform a $\frac{1}{2}$ roll, pull through a $\frac{1}{4}$ loop, exit inverted.





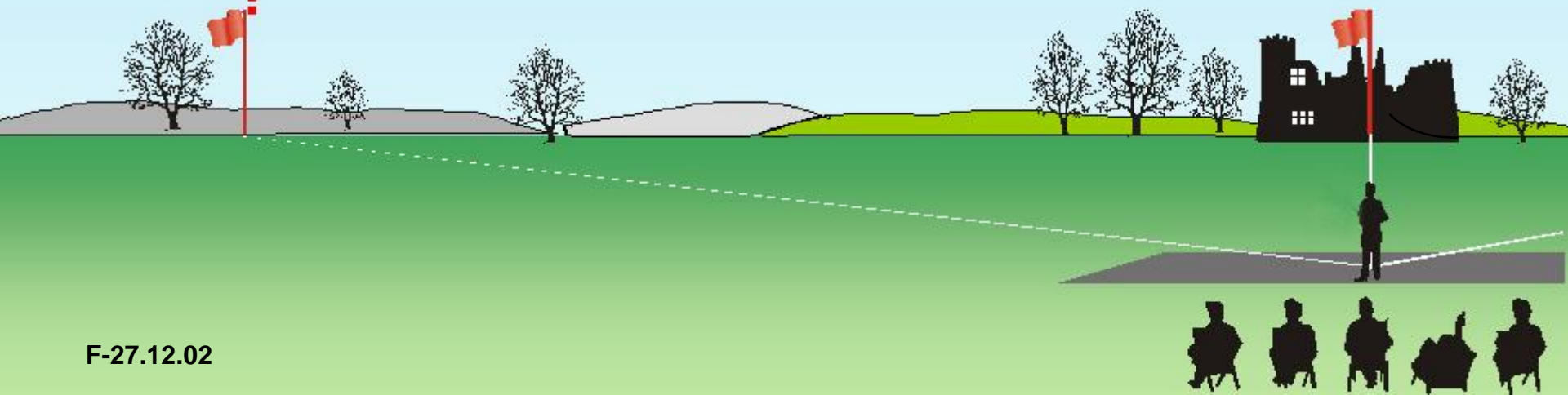
F-27.12 Inverted Figure ET with two quarter rolls, half roll



Part rolls centered on middle of the line.

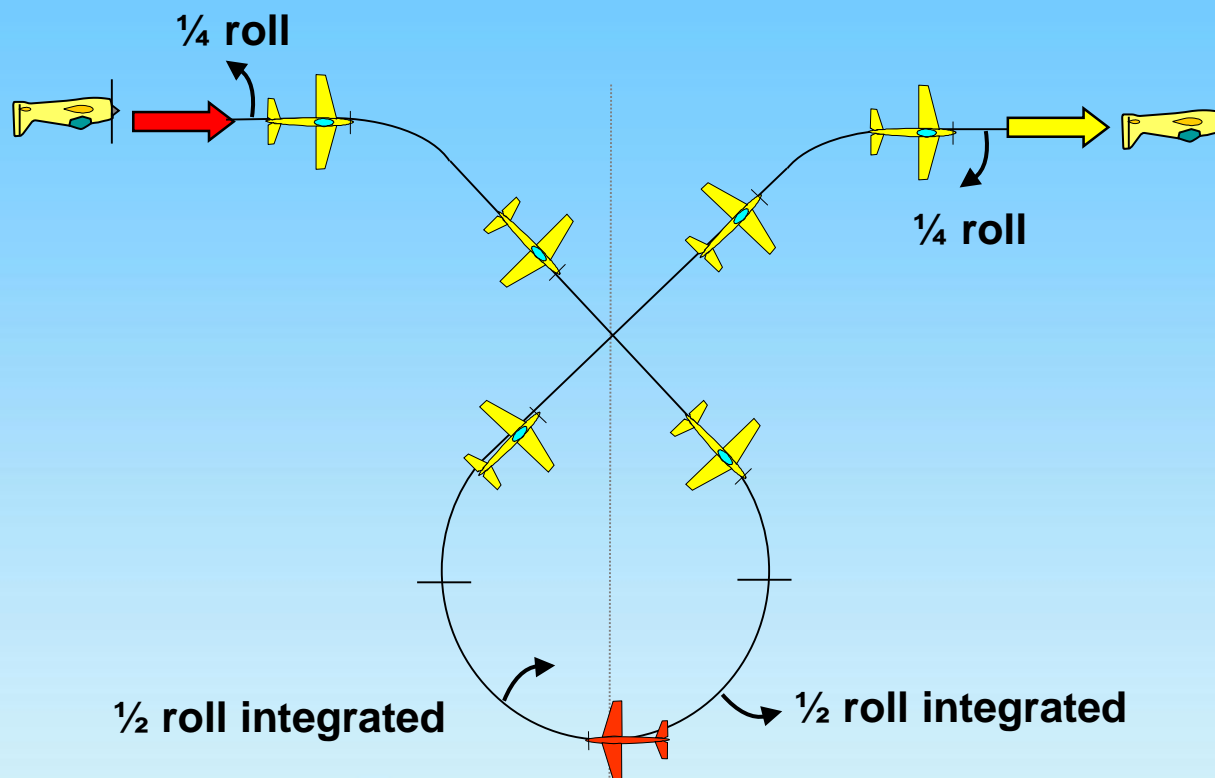
Lines between part rolls must be short and of recognizable length.

All radii are equal.





F-27.13 Inverted Golf Ball with quarter roll half roll integrated, half roll integrated quarter roll

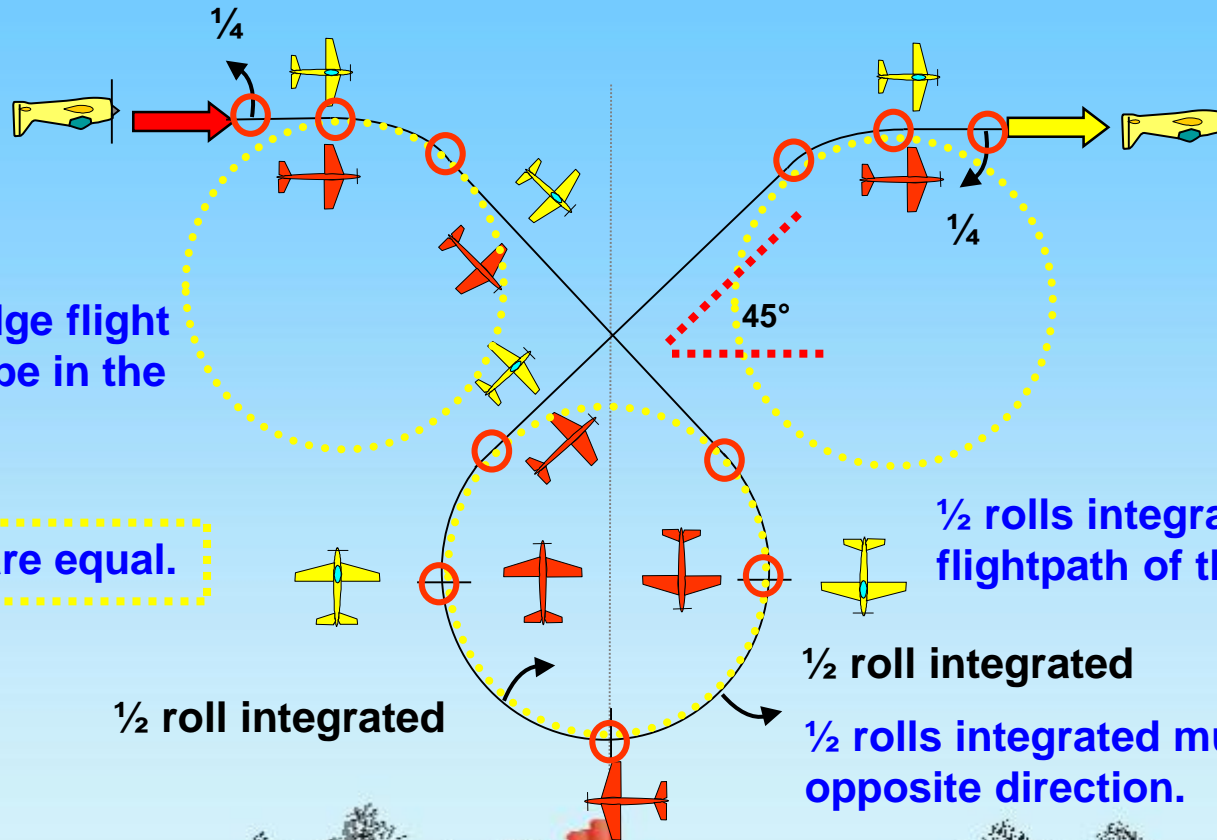


From inverted, before centre, perform a $\frac{1}{4}$ roll into knife edge, perform a $\frac{1}{8}$ knife edge loop into a 45° downline, perform a $\frac{3}{4}$ knife edge loop into a 45° knife-edge upline, while integrating two $\frac{1}{2}$ rolls in opposite directions in the lower 180° part of the $\frac{3}{4}$ loop, perform a $\frac{1}{8}$ knife-edge loop, perform a $\frac{1}{4}$ roll exit inverted.





F-27.13 Inverted Golf Ball with quarter roll half roll integrated, half roll integrated quarter roll



During knife-edge flight the wing must be in the vertical plane.

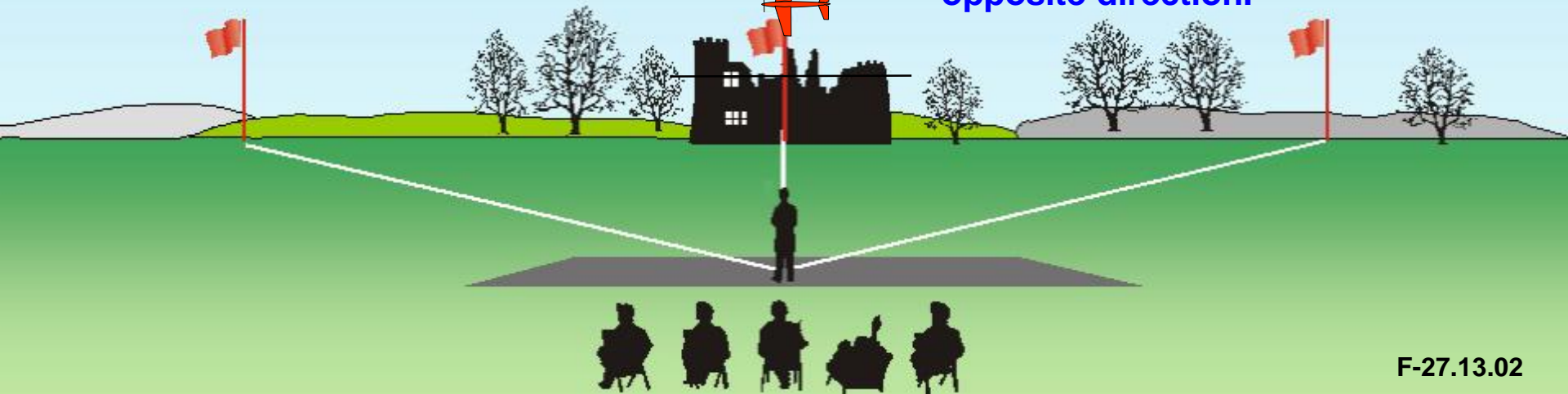
All radii are equal.

$\frac{1}{2}$ rolls integrated on circular flightpath of the part loops.

$\frac{1}{2}$ roll integrated

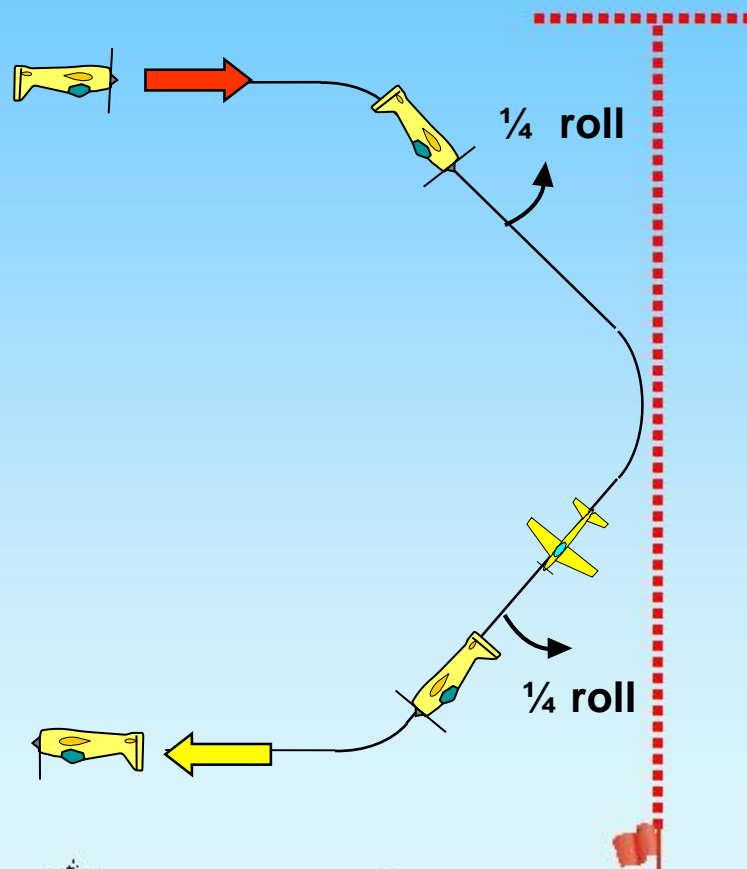
$\frac{1}{2}$ roll integrated

$\frac{1}{2}$ rolls integrated must be in opposite direction.

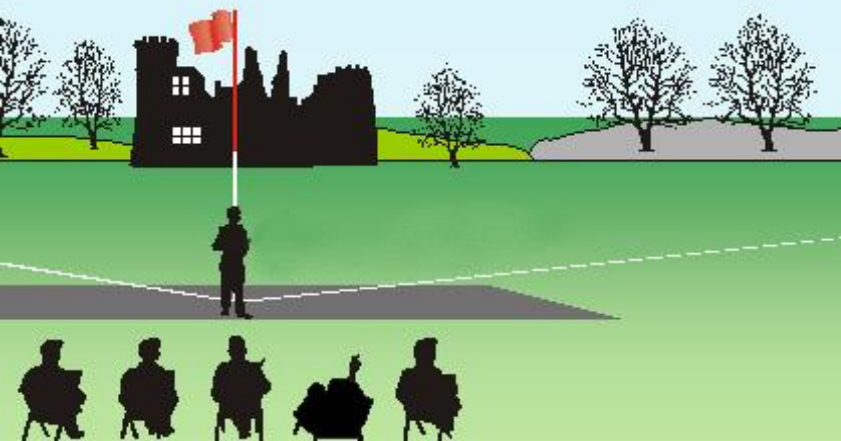




F-27.14 Half Square Loop on Corner with quarter roll, quarter roll

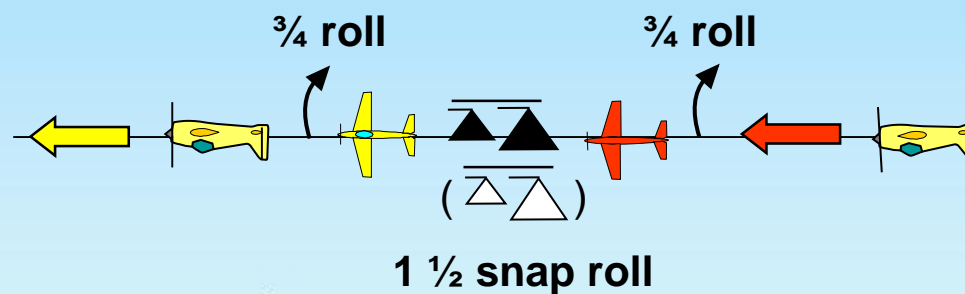


From inverted, pull through a $\frac{1}{8}$ loop into a 45° downline, perform a $\frac{1}{4}$ roll into knife-edge flight, perform a $\frac{1}{4}$ knife-edge loop into a 45° downline, perform a $\frac{1}{4}$ roll, push through a $\frac{1}{8}$ loop, exit inverted.





F-27.15 Roll Combination with three quarter roll, one and half snap roll, three quarter roll



From inverted, perform a $\frac{3}{4}$ roll into sustained knife-edge flight, perform 1 $\frac{1}{2}$ snap roll into another sustained knife-edge flight, perform a $\frac{3}{4}$ roll, exit inverted.





F-27.15 Roll Combination with three quarter roll, one and half snap roll, three quarter roll

All rolls in the same direction.

Knife-edge lines must be of equal length.

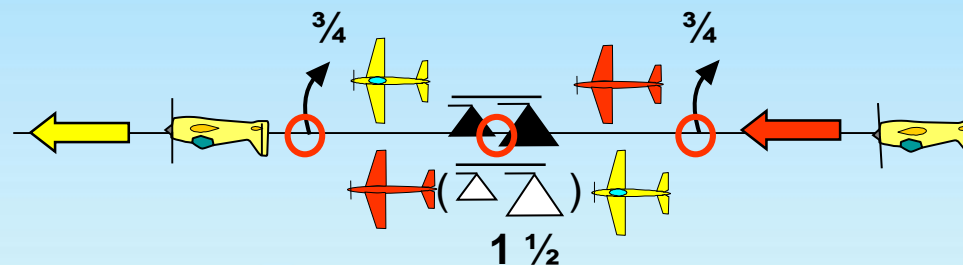
During knife-edge flight the wing must be in the vertical plane.

1 ½ snap roll must be centered.

Snap roll may be positive or negative.

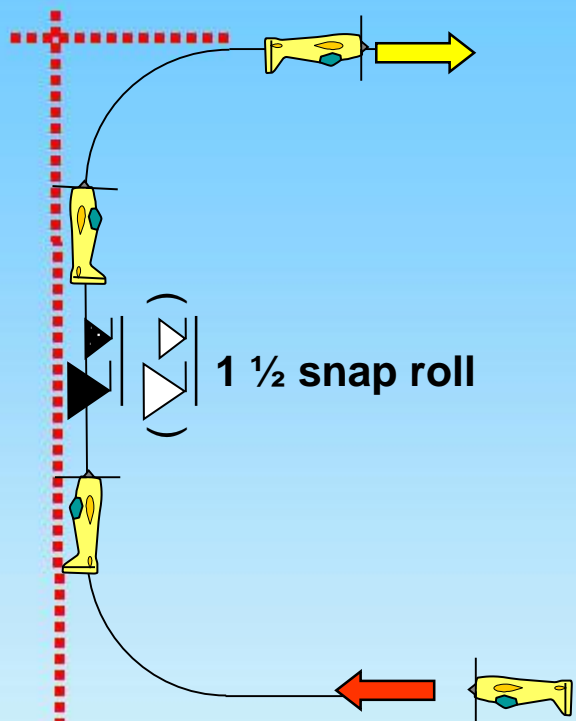
If snap roll = barrel roll or aileron roll:

Severe downgrade > 5 pts.





F-27.16 Half Square Loop with one and a half snap roll

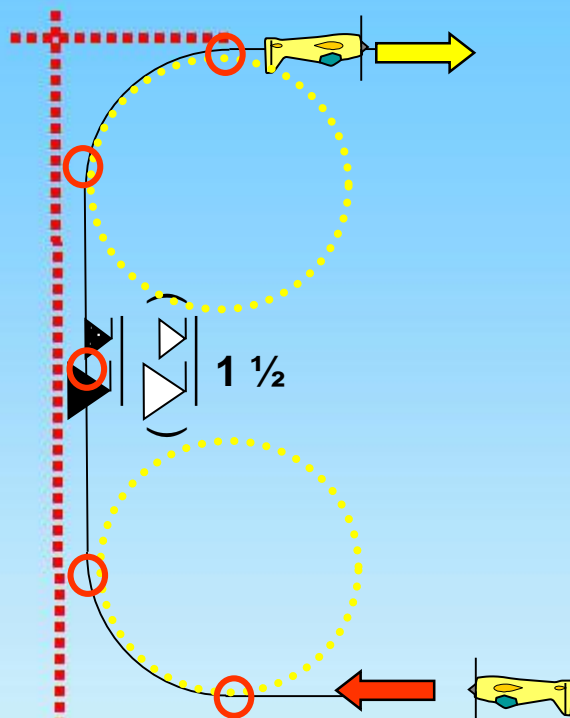


From inverted, push through a 1/4 loop into a vertical upline, perform a 1 1/2 snap roll, pull through a 1/4 loop, exit inverted.





F-27.16 Half Square Loop with one and a half snap roll



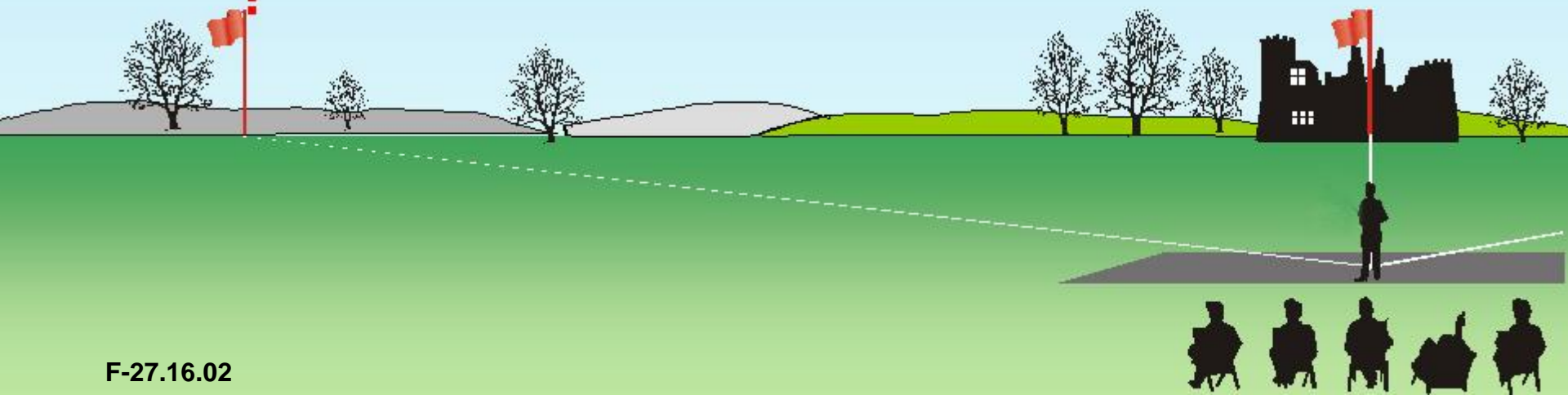
1 ½ snap roll on middle of the line.

Snap roll may be positive or negative.

If snap roll = barrel roll or aileron roll:

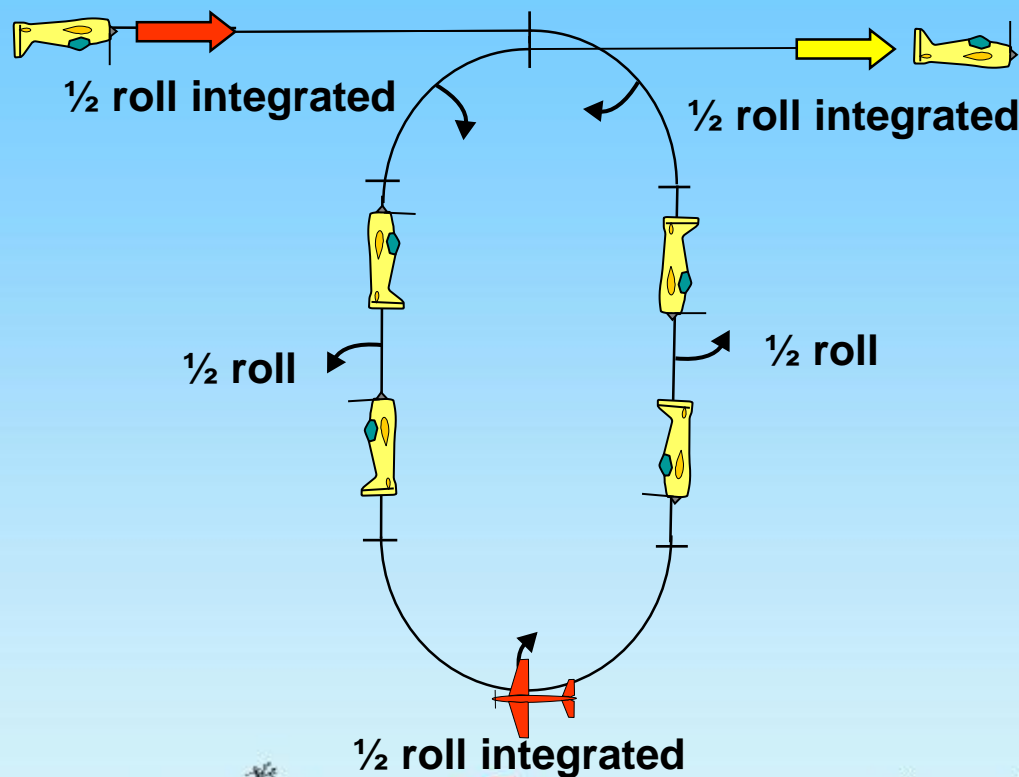
Severe downgrade > 5 pts.

All radii are equal.





F-27.17 Pull-Pull-Pull Humpty Bump half roll integrated, half roll, half roll integrated, half roll, half roll integrated



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



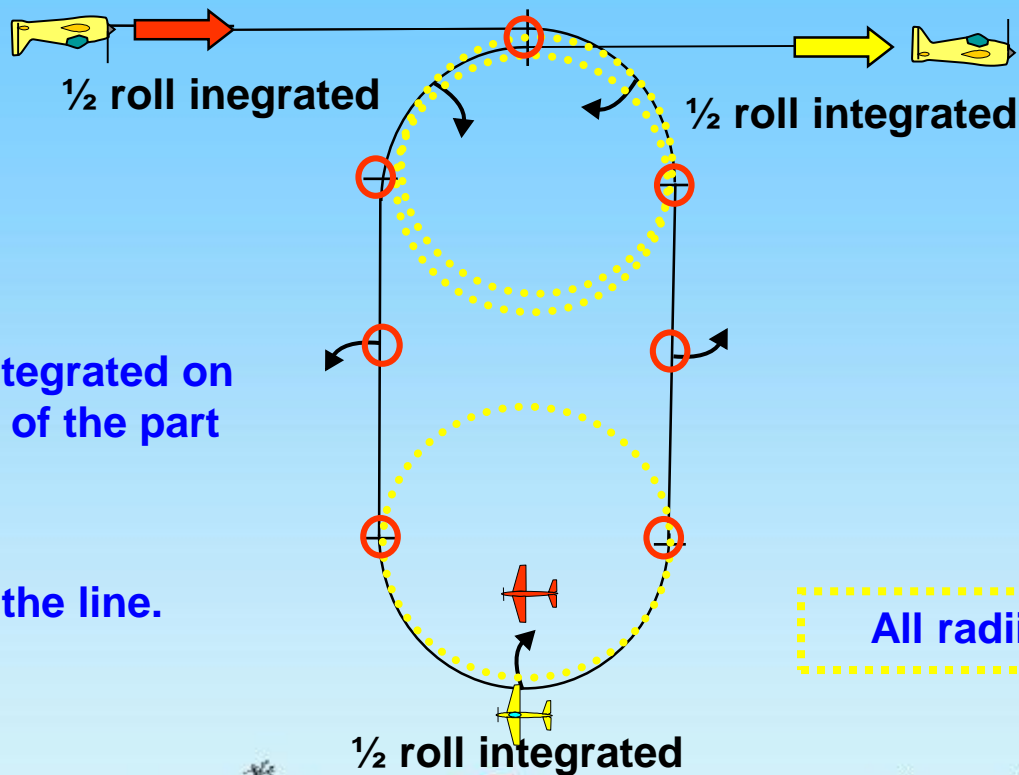


F-27.17 Pull-Pull-Pull Humpty Bump half roll integrated, half roll, half roll integrated, half roll, half roll integrated

Entry and exit must be at the same altitude.

$\frac{1}{2}$ rolls must be integrated on circular flightpath of the part loops.

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



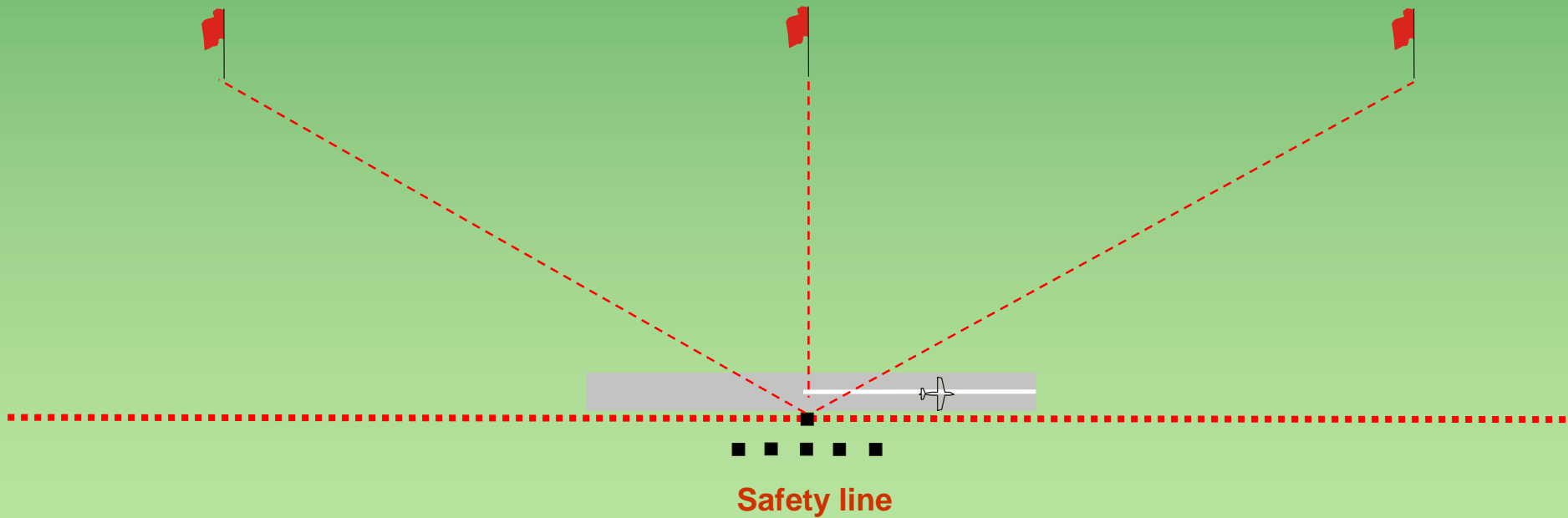
All radii are equal.





Landing procedure (not judged, not scored)

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

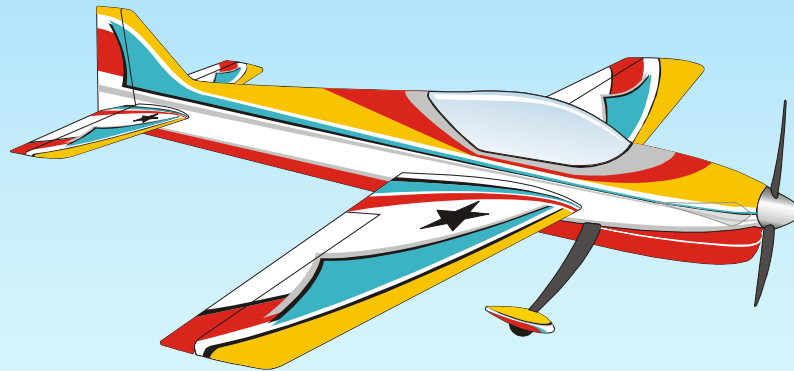


Forget **WHO** is flying
(friend, rival, countryman, flier from other nation)

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

LOOK ONLY AT LINES DESCRIBED IN THE SKY!

Bob Skinner



Thank you!

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