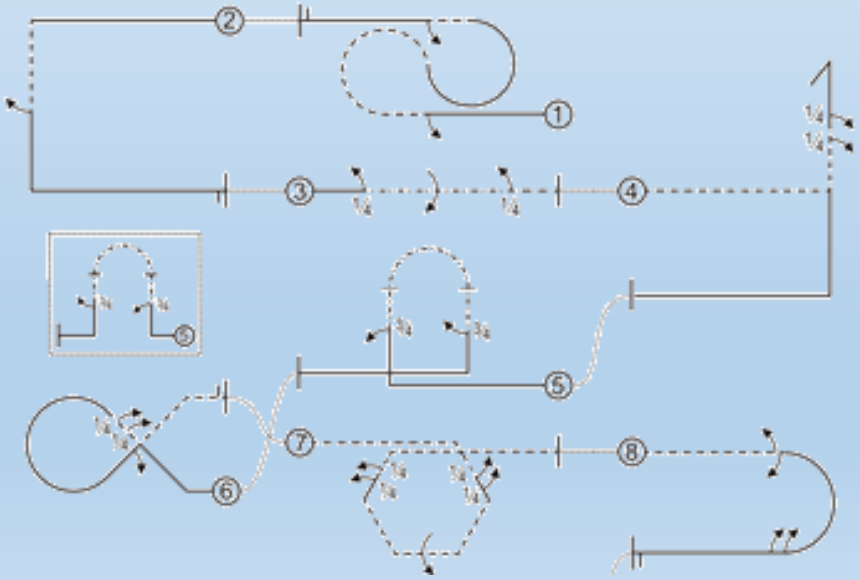
F3A Judging seminar

Bob Romijn



Agenda

- Introduction to model aerobatics
- Introduction to judging
- Rules for deduction

Introduction to model aerobatics

Principle

The principles of judging the performance of a competitor in a R/C Aerobatic competition is based on the **perfection** with which the competitor's model aircraft executes the aerobatic manoeuvres as described in Annex 5A.

Introduction to model aerobatics
What is the game?

- The pilot is too do as good as a job to hide errors and as such try to fool the judges

- The judges are there to spot the errors and judge how good the flight appears to be.

Introduction to model aerobatics
Respect each other

- Pilots and judges are all human…
- Humans make errors, pilots and judges
- People who work make errors
- People who work a lot make a lot of errors
- I do know people who don’t make errors…..

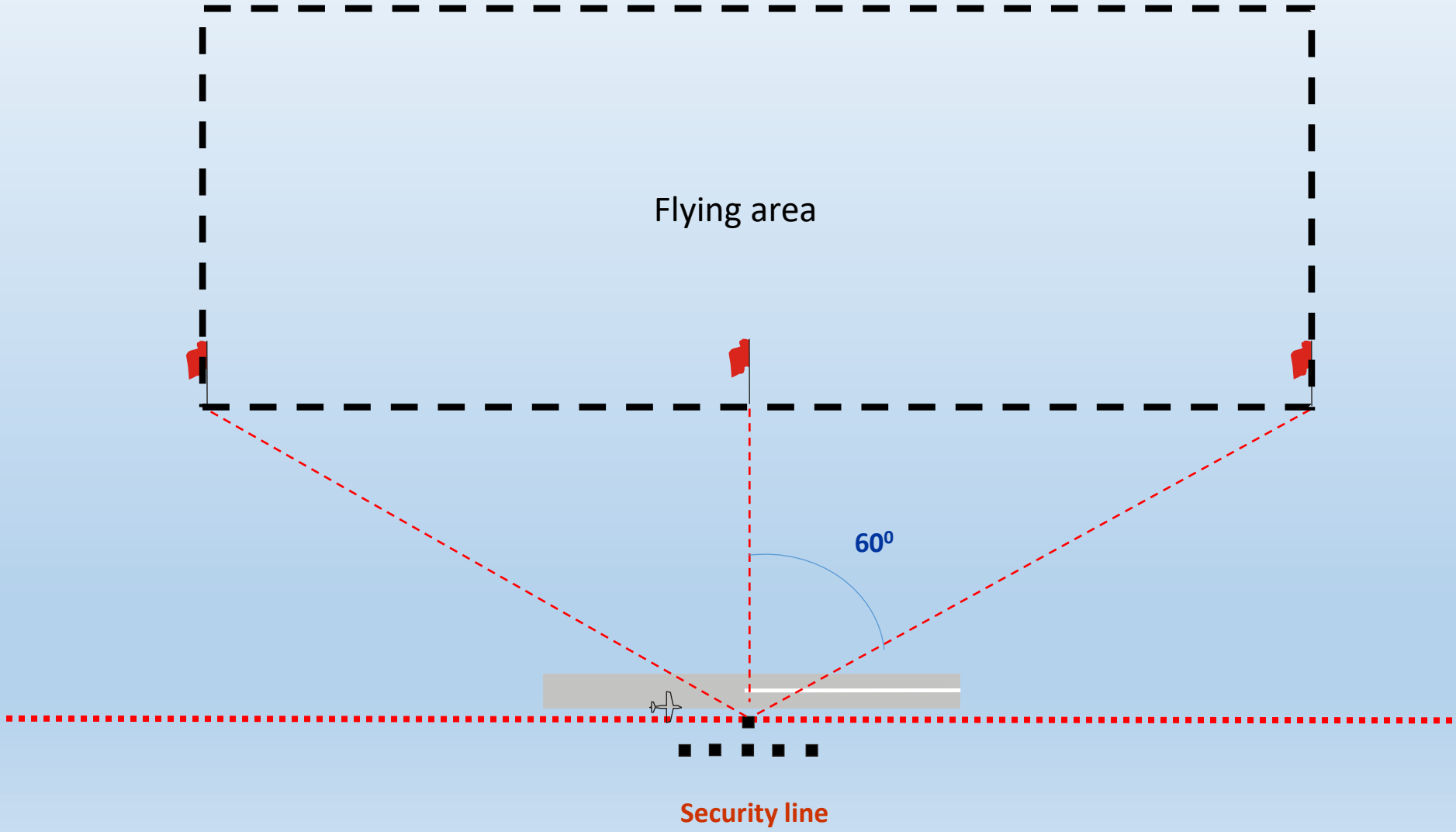
- So, judges are just humans and can have it wrong or miss sometimes something.

Introduction to model aerobatics
Flying area

- The manoeuvring zone is vertically spread in front of and at a distance of approximately 150 m from the pilot. It is laterally limited by two virtual vertical planes above the extension of two lines on the ground each at an angle of 60 degrees left and right from the intersection of a centre line with the safety line. The centre line is positioned on the ground perpendicular to the safety line on the ground which is parallel to the runway. The upper limit of the manoeuvring zone is defined by the virtual plane stretching up 60 degrees from the ground at the intersection of all ground lines.

Introduction to model aerobatics

Flying area

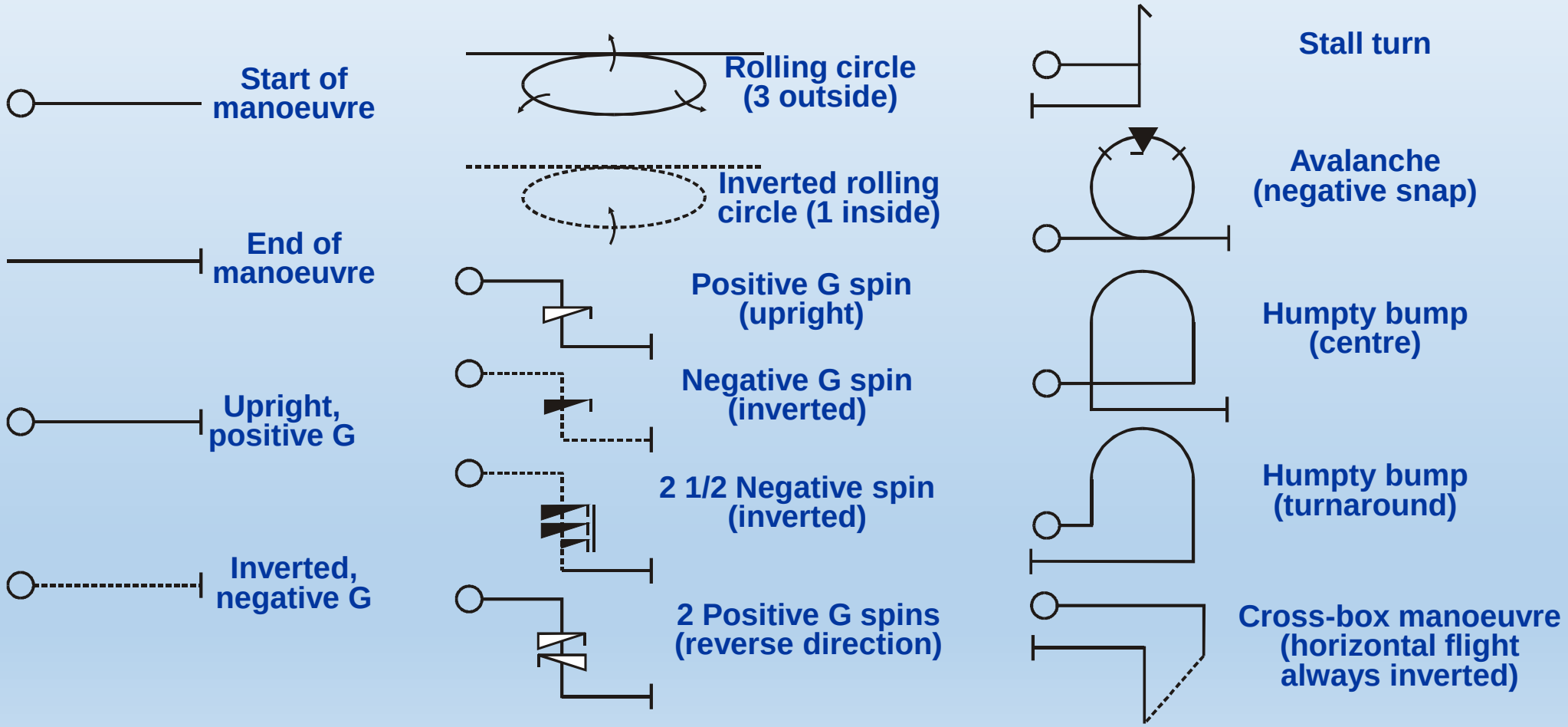


What is judging
Goal

- The ultimate goal is to realize an exact accepted ranking of competitors
- No individual scoring of figures
- No comparison with earlier competitions

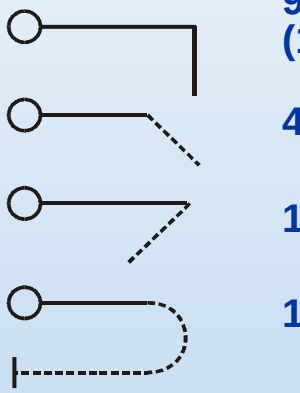
What is judging

Aresti system



What is judging

Aresti system

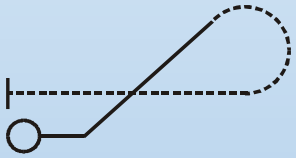


90⁰ angle/corner (1/4 loop)

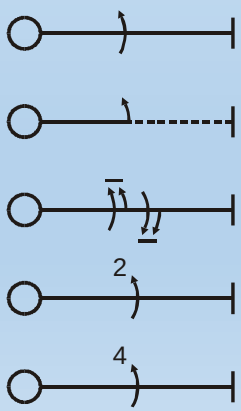
450 (1/8 loop)

1350 (3/8 loop)

1800 (1/2 loop)



1/8 loop and 5/8 loop



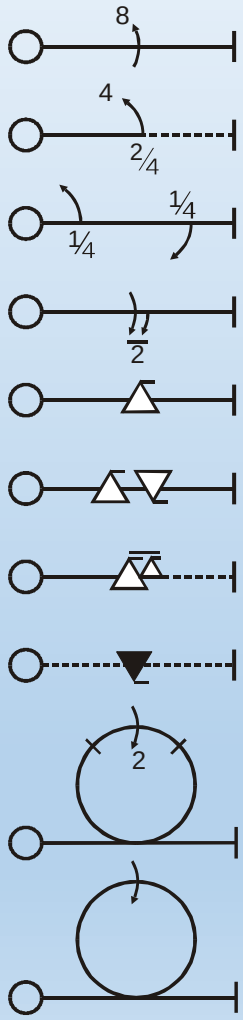
Slow roll (aileron)

Half roll

1 1/2 rolls, reversed

2-point roll

4-point roll



8-point roll

2 of 4-point roll

Knife-edge flight

3 of 2-point roll

Positive G snap roll

2 snaps opposite

1 1/2 positive G snaps

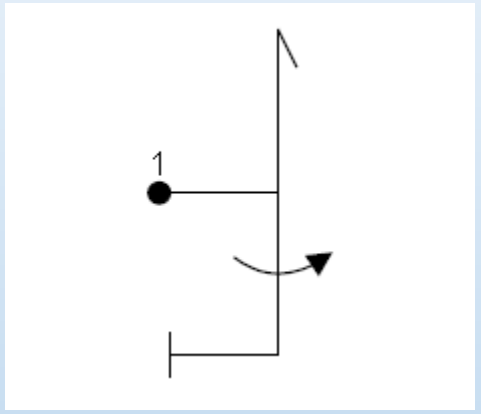
Negative G snap roll

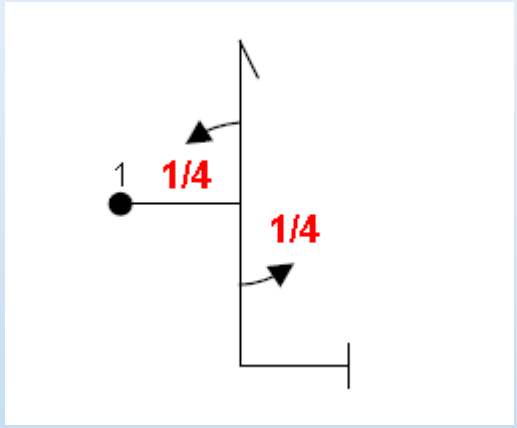
Loop with 2-point roll (contained to top of loop)

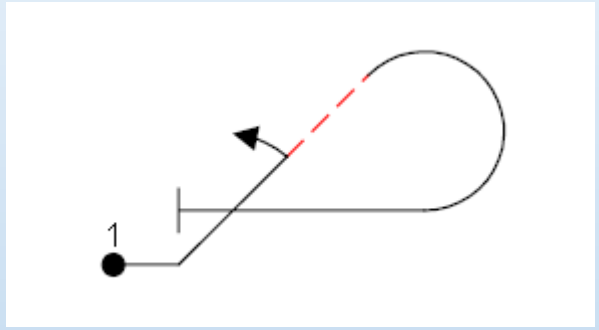
Rolling loop (roll is integrated with loop)

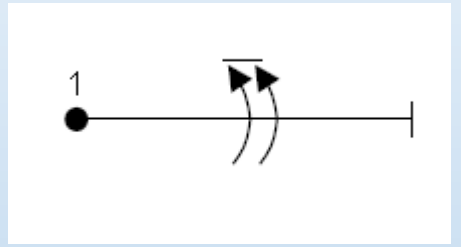
What is judging

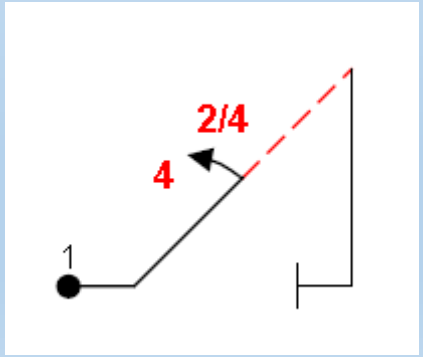
Aresti system - practices

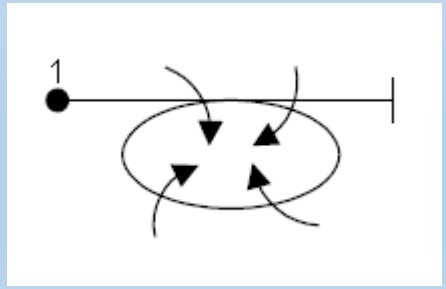


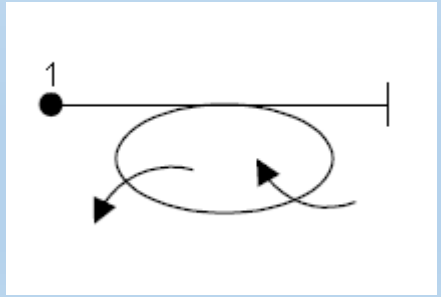


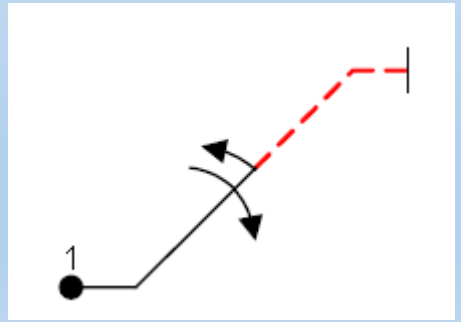












What is judging
How - Downgrading

- No Impression judging
- Using the downgrade system

ALWAYS
START WITH PERFECT 10 …

Then 9…8…7…6…5…4…etc.

Or 10…7…6…2…etc.

What is judging
How - Downgrading

- Was there a mistake?
  - Over- or underrolling
  - Absence of lines
  - Wrong angles
  - Etc.
- How serious was the mistake?
- How often did the mistake occur?
- Depending the answers to above questions, one or more points will be deducted

What is judging
How – Balance Scores

- Don’t purely judge on impression
- Don’t purely judge on downgrading
- Balance scores reached with downgrading

What is judging
How – Downgrading

- Is full point downgrading fair?
  - Pilot 1 makes small error in a rolling line: 1 pt = score 9
  - Pilot 2 makes a smaller error in this rolling line: 1 pt = score 9
  - Does this allow a fair ranking?
- New rule Annex 5B.5:
  - Each judge gives a mark for each manoeuvre during a flight. Assuming the highest mark 10 at the start of each manoeuvre, every defect is subject to downgrade of the mark in whole numbers (or in half numbers for slight defects, but in sum resulting in up-rounded whole numbers). A high score should remain only if no substantial, severe or multiple defects are found.
- In Above example:
  - Pilot 1 makes small error in a rolling line: 1 pt = score 9
  - Pilot 2 makes a smaller error in this rolling line: 0,5 pt = score 10

How to downgrade

How much deduction for what error?

How to downgrade?
15 degree rule

- The generic rule which can be applied to almost everything:

Per 15 degree error: 1 point deduction

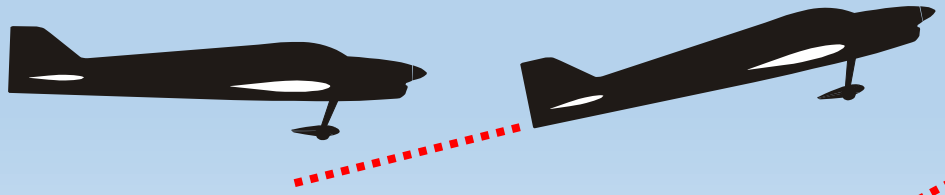
How to downgrade?

15 degree rule

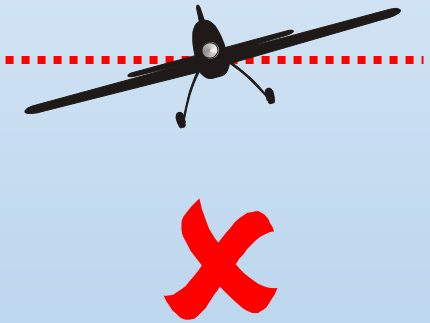
**Perfect geometry =
No downgrade**

Wings level - roll axis

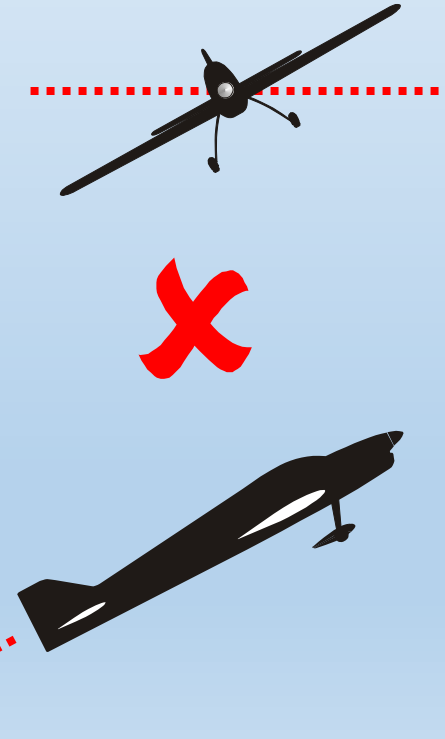
Horizontal lines - pitch axis



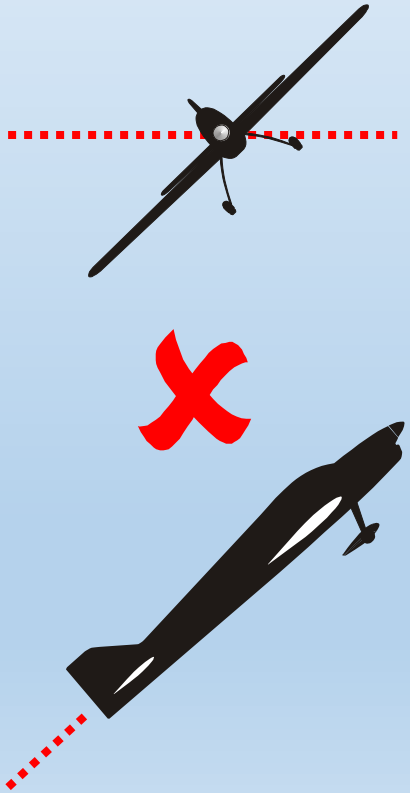
**Up to 15^0 error =
1 point downgrade**



**Up to 30^0 error =
2 point downgrade**

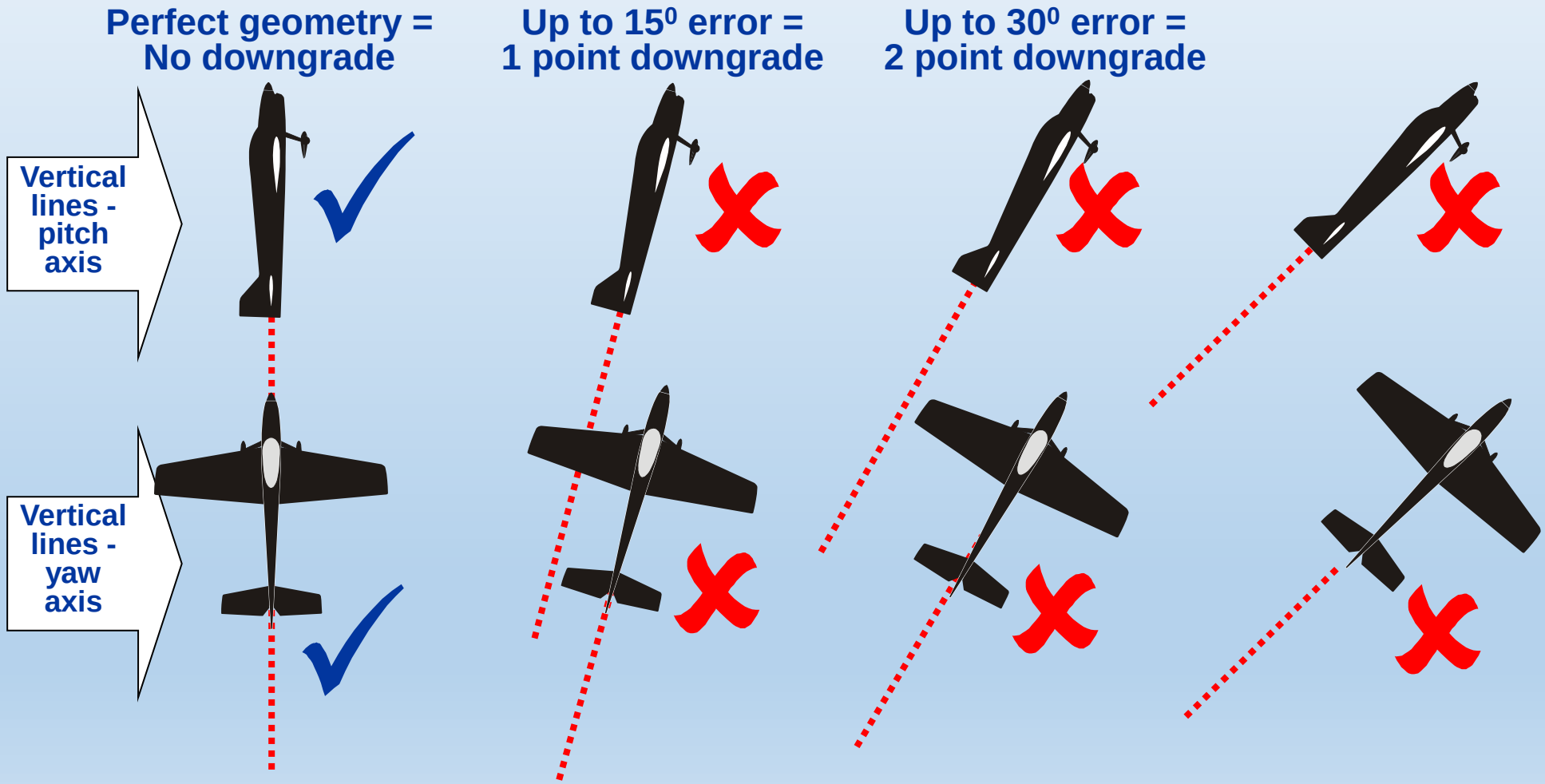


**Up to 45^0 error =
3 point downgrade**

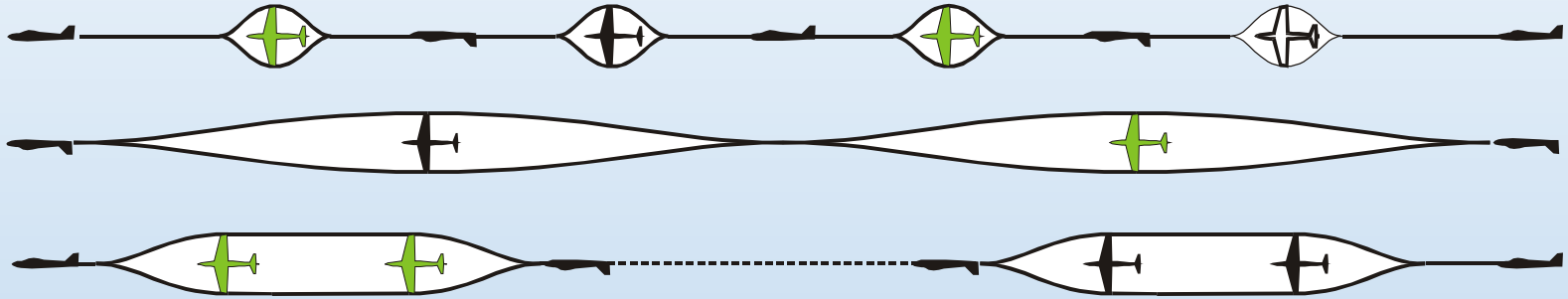


How to downgrade?

15 degree rule



How to downgrade
15 degree rule

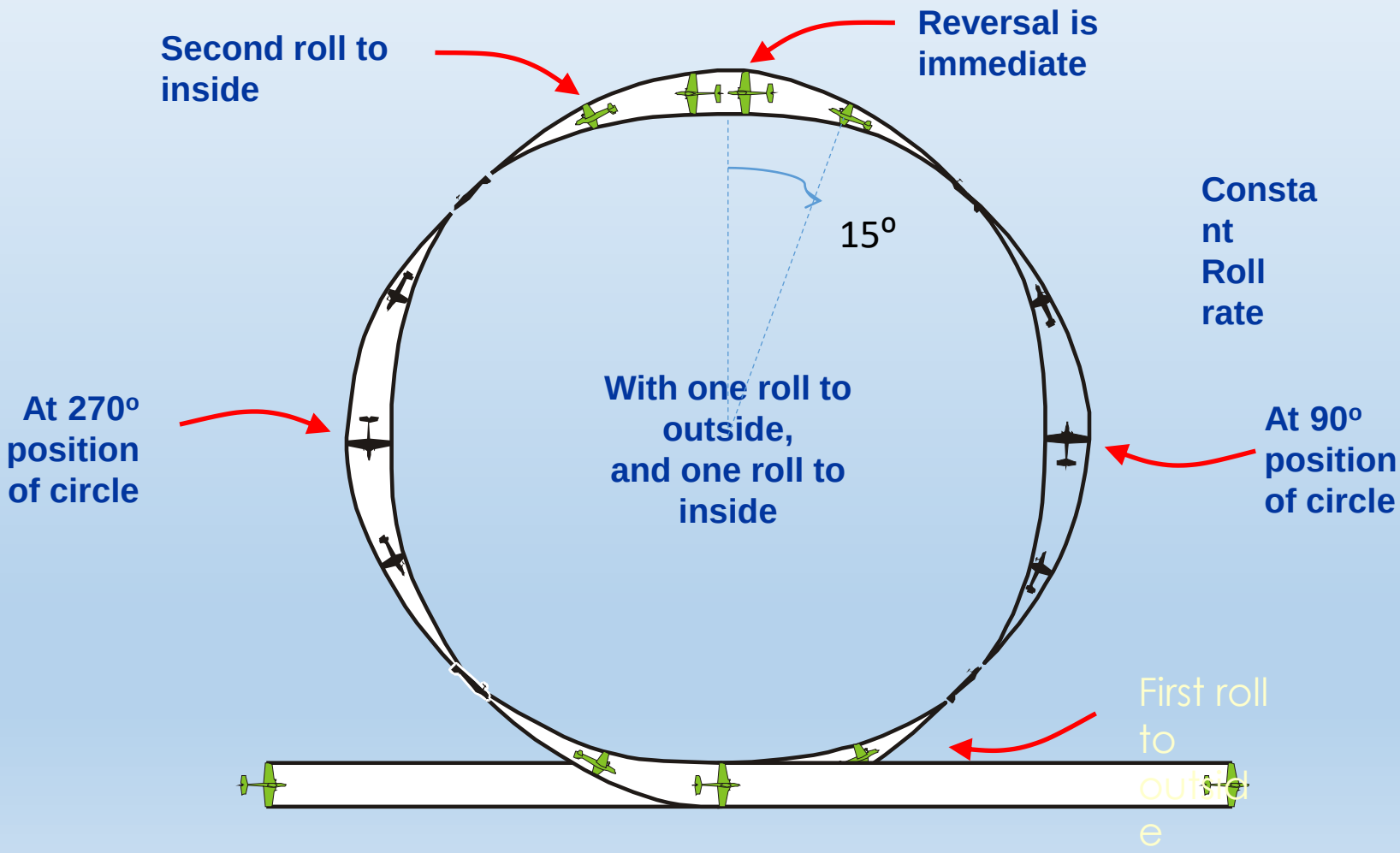


Missing or additional Part-Rolls:
Use the 1 point for 15° rule

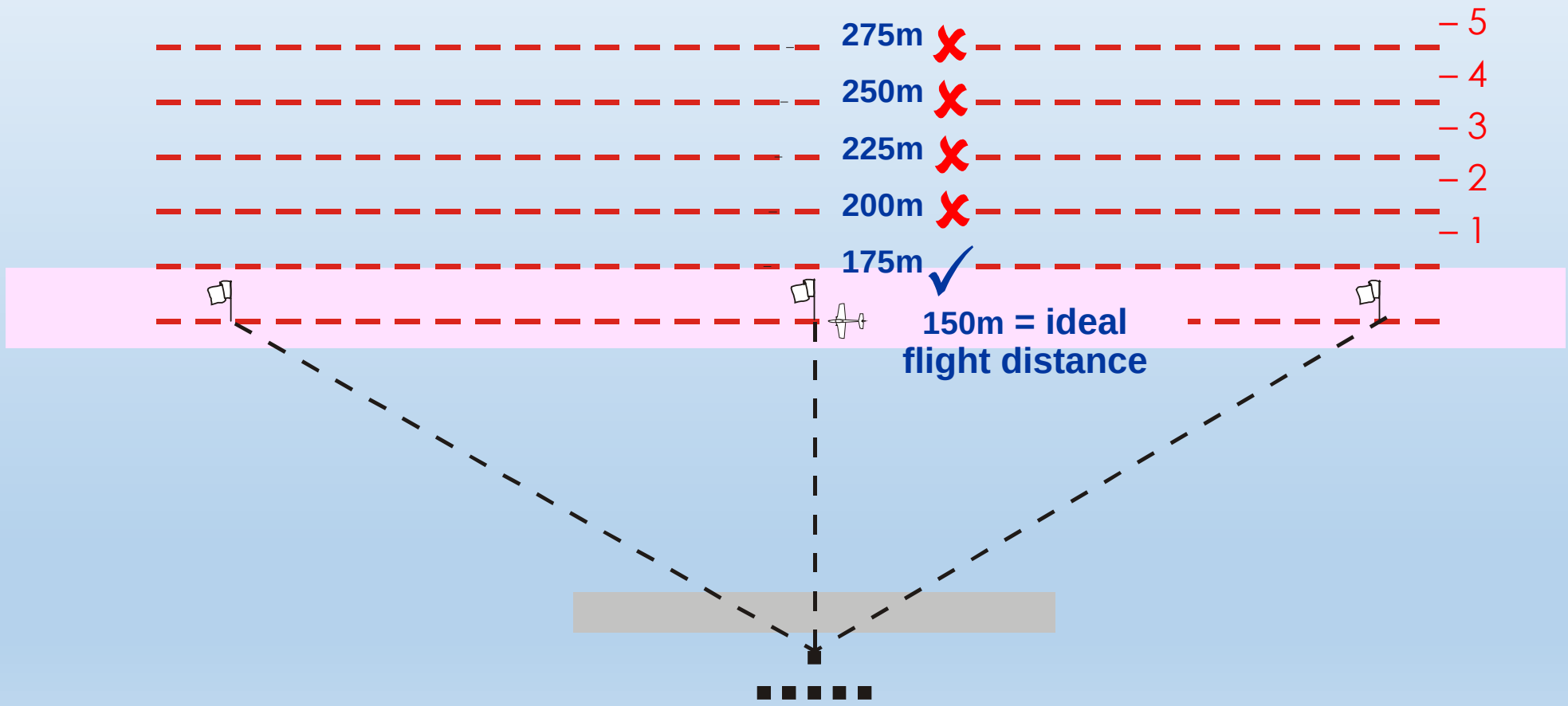
- **1 missing ½ roll: (180 degrees) = Zero points**
- **1 missing ¼ roll : (90 degress) = - 6 points**
- **1 missing 1/8 roll : (45 degrees) = - 3 points**
- **analogue with additional part-rolls**

How to downgrade?

15 degree rule – rolling circles/loops

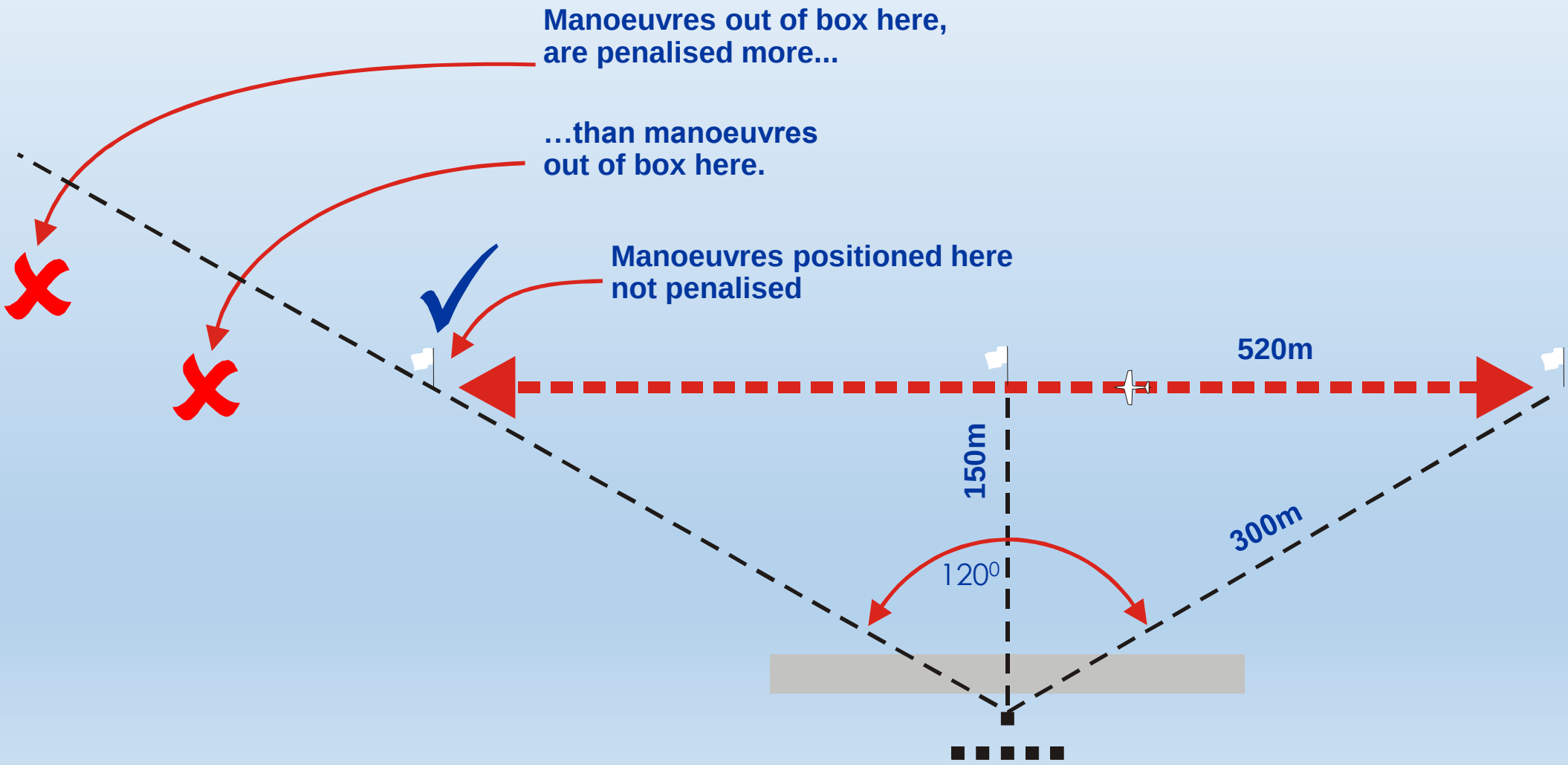


How to downgrade
Positioning – Depth



How to downgrade

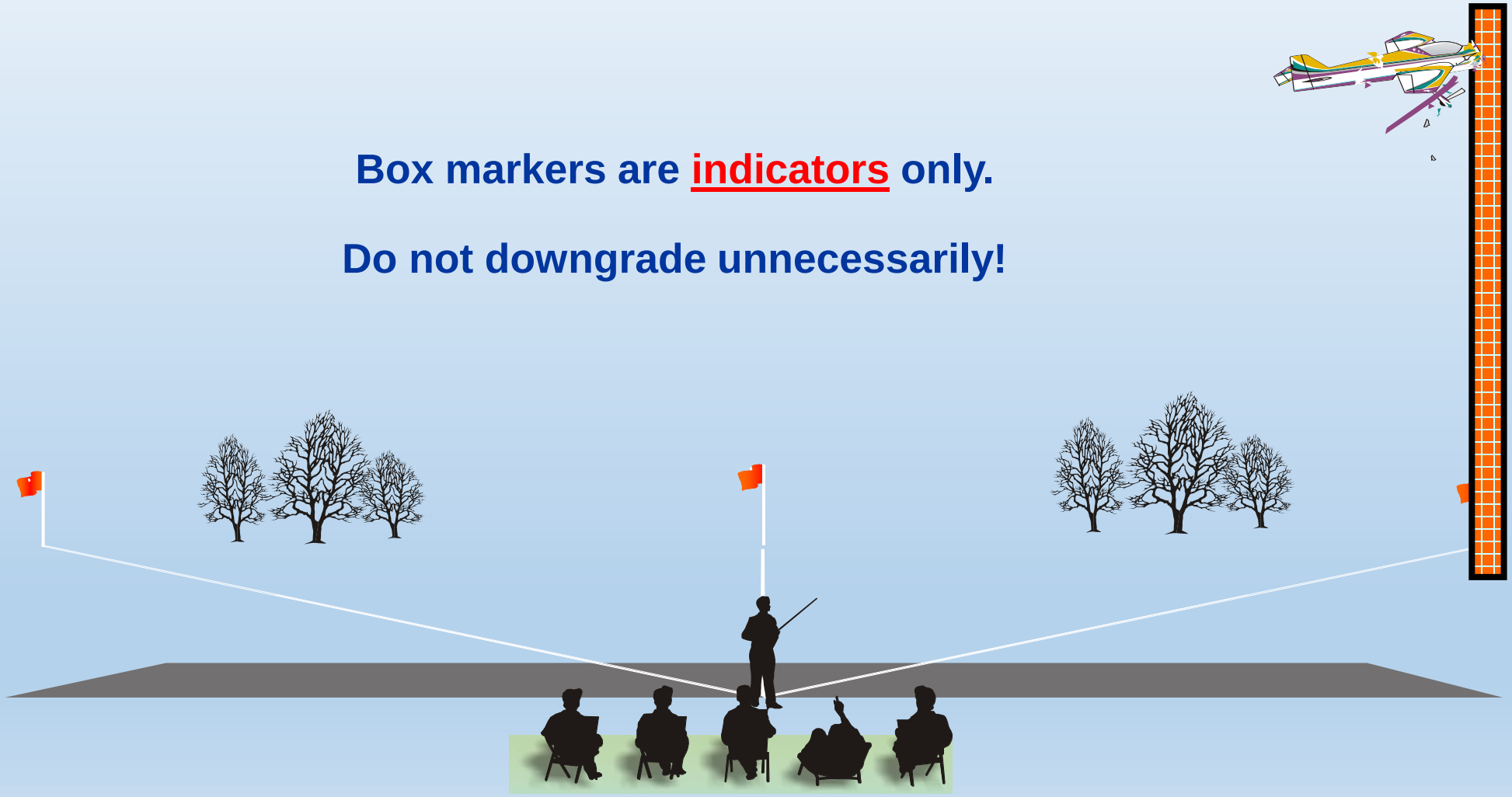
Positioning – Box sides



How to downgrade
Positioning – Box sides

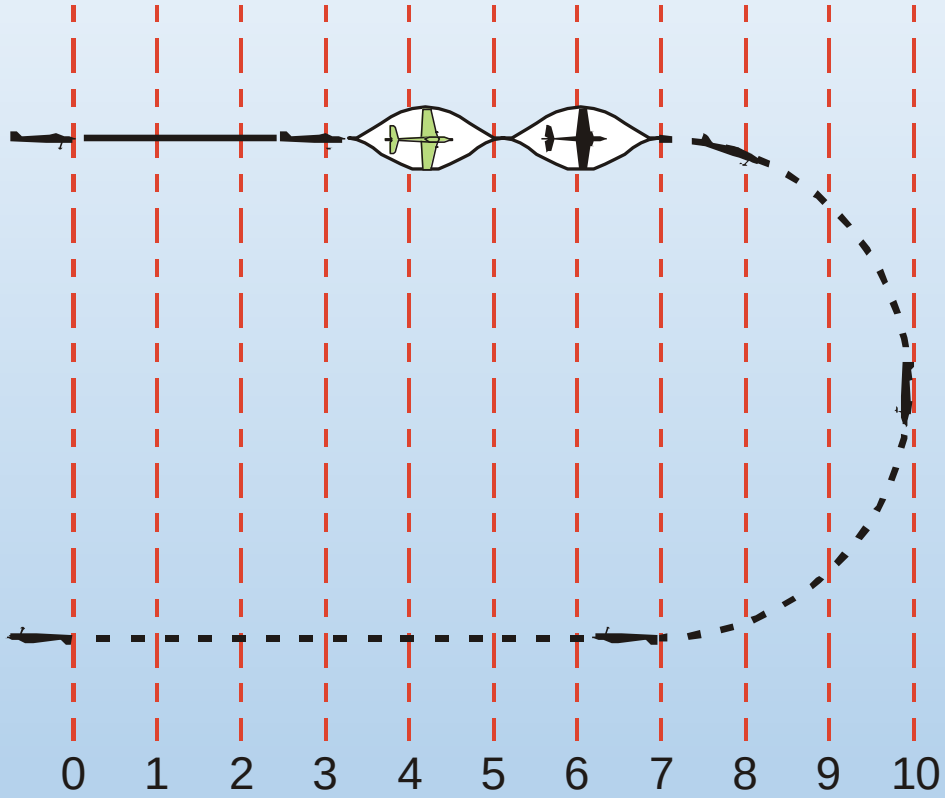
Box markers are indicators only.

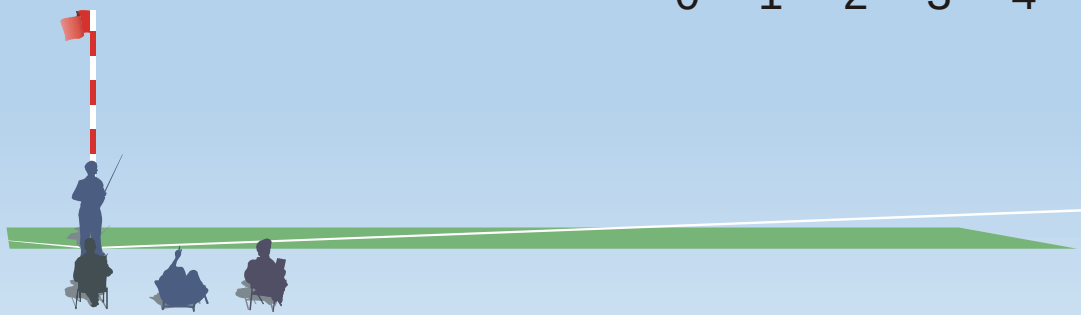
Do not downgrade unnecessarily!



How to downgrade
Positioning – Box sides

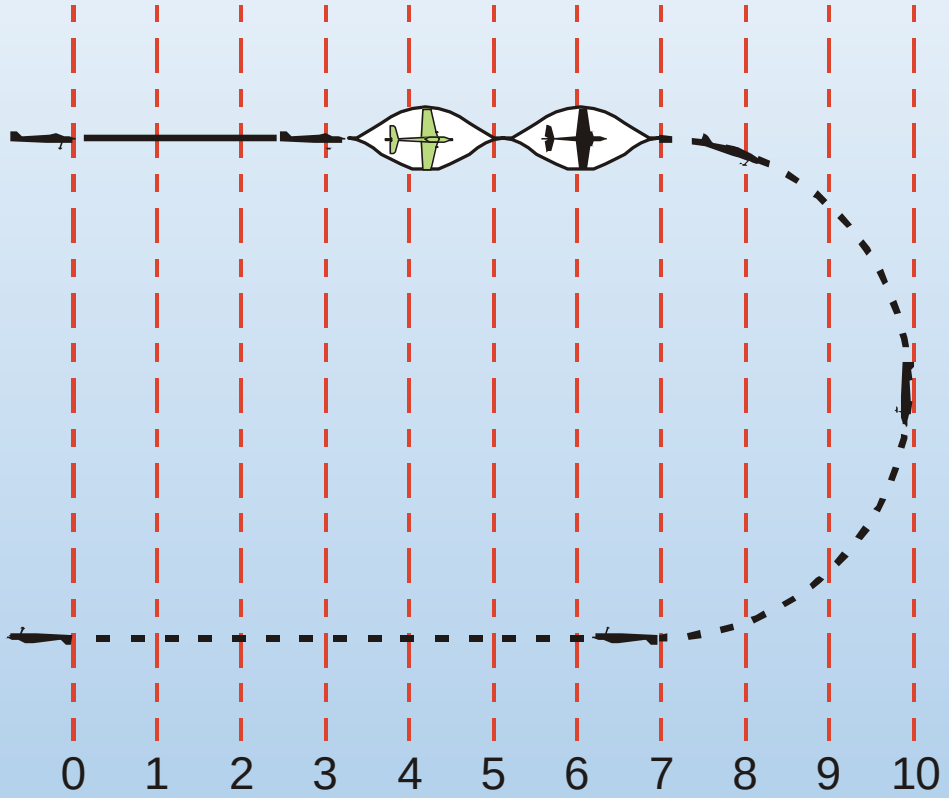
No downgrade
(positioning only)
(Entire manoeuvre
= inside box marker)

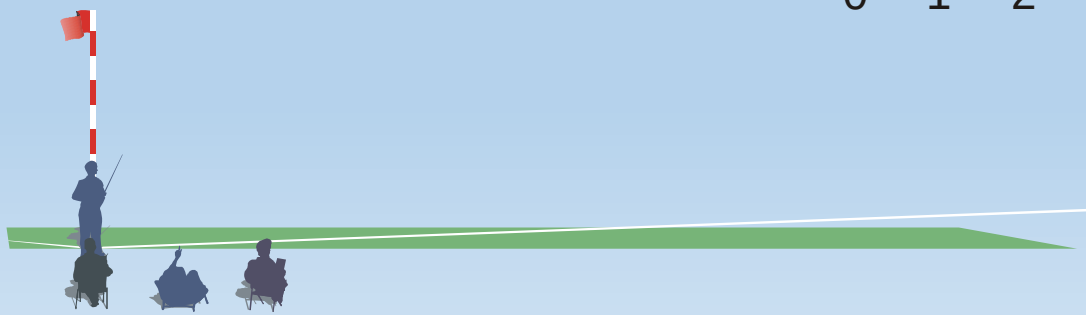




How to downgrade
Positioning – Box sides

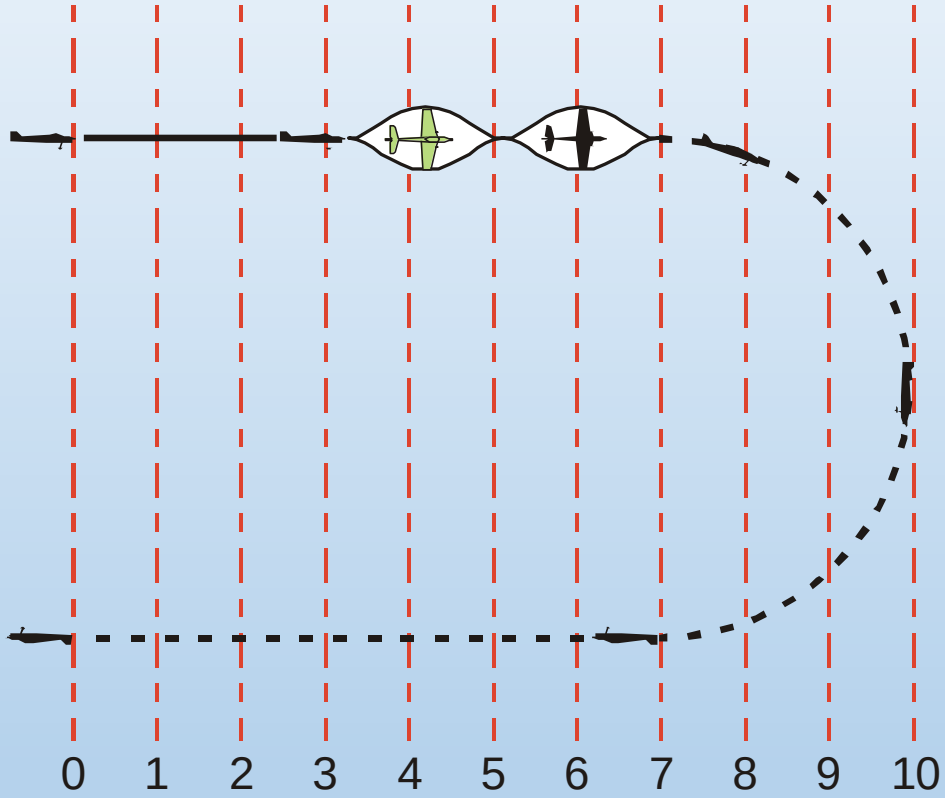
2 points downgrade
(20% of manoeuvre = outside)

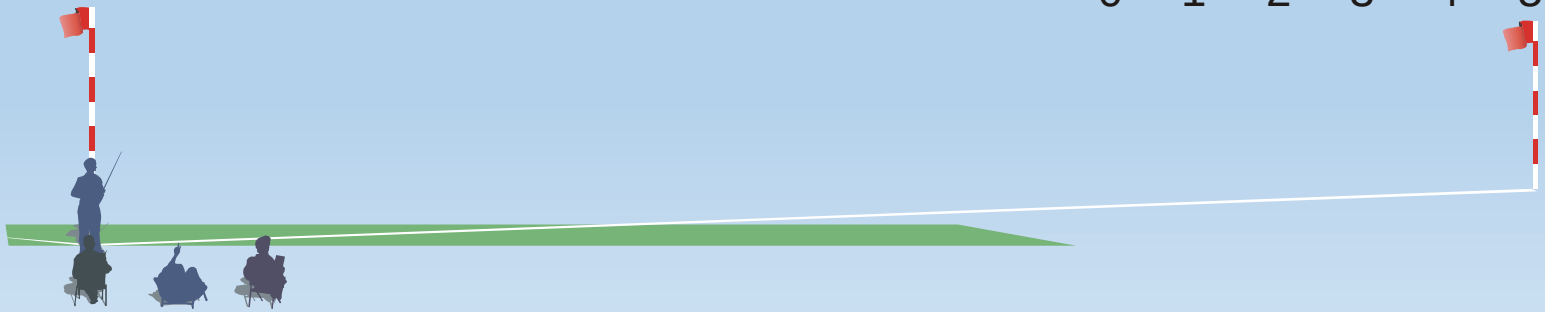




How to downgrade
Positioning – Box sides

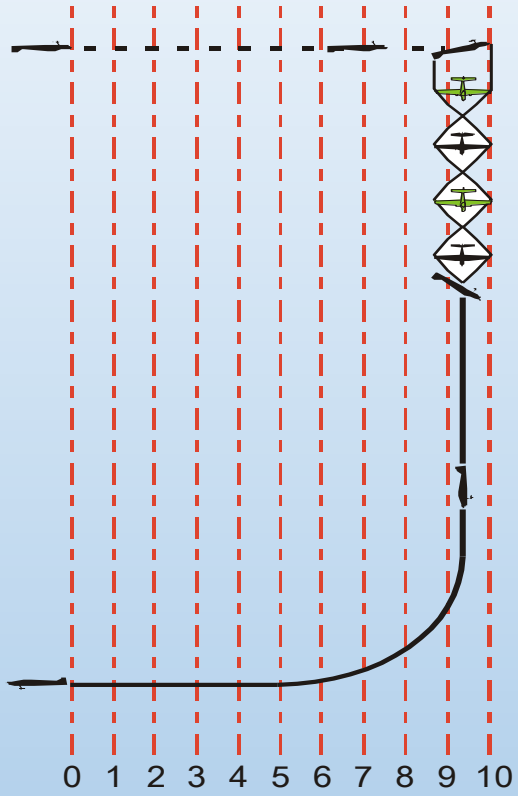
5 points downgrade
(50% of manoeuvre = outside)

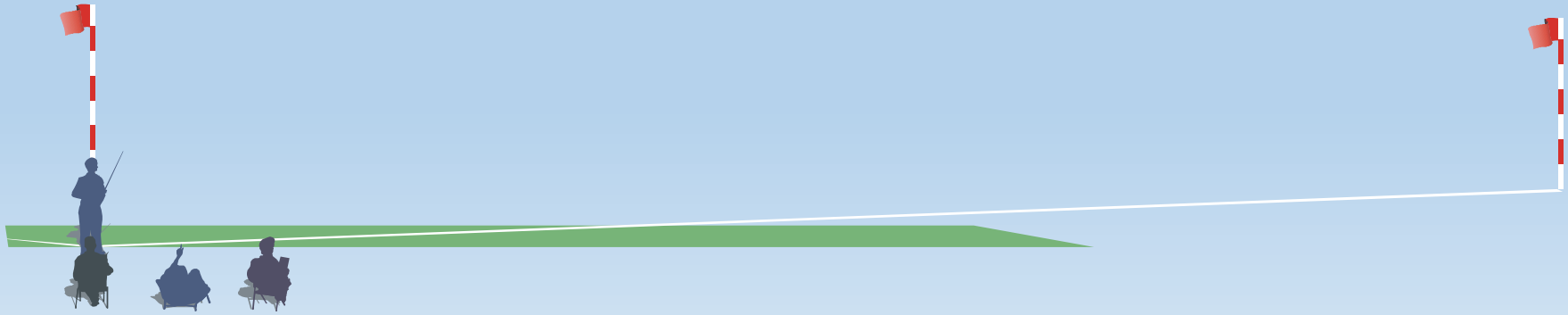




How to downgrade
Positioning – Box sides

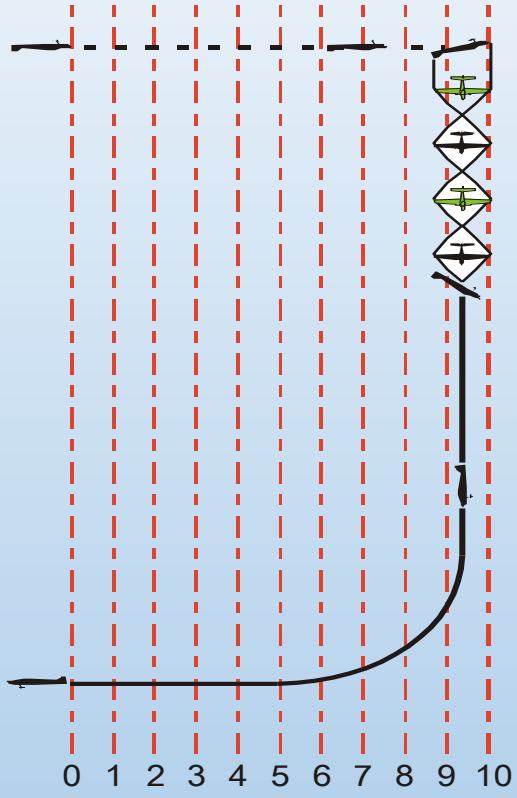
No downgrade
(Entire manoeuvre = inside box marker)

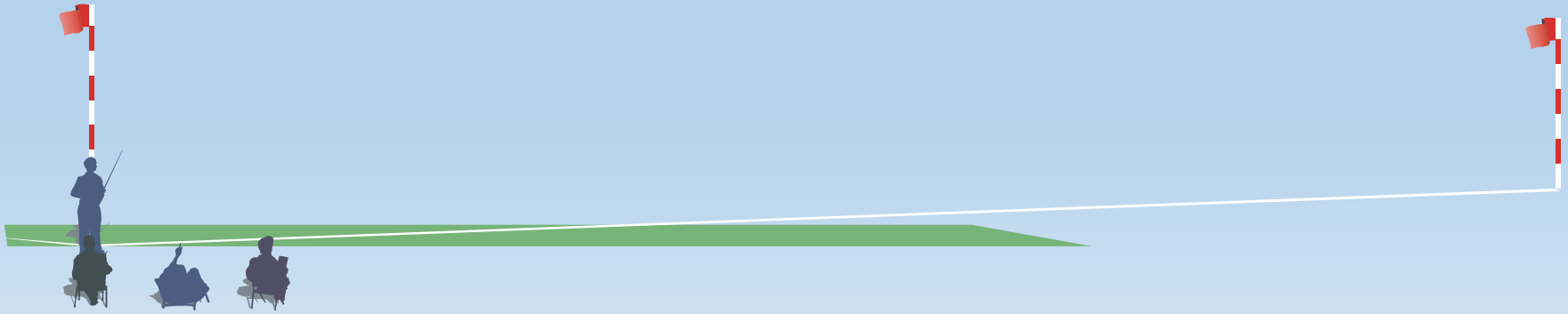




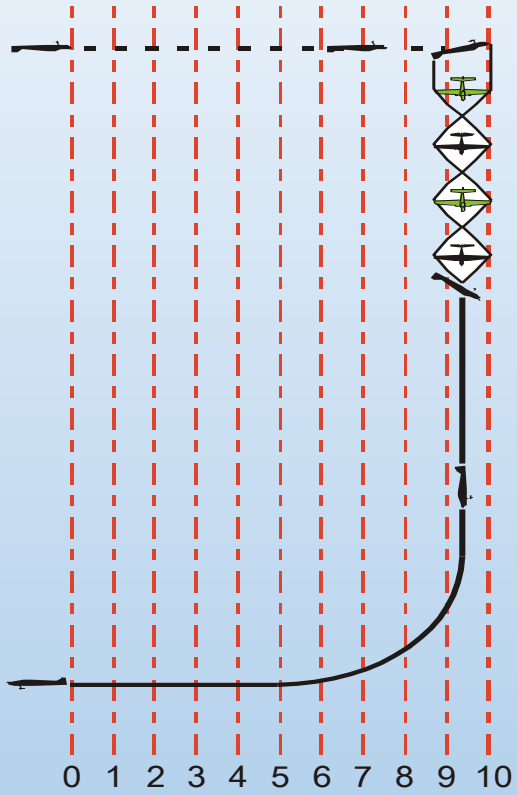
How to downgrade
Positioning – Box sides

3 points downgrade for positioning.
(30% of manoeuvre = outside box marker)

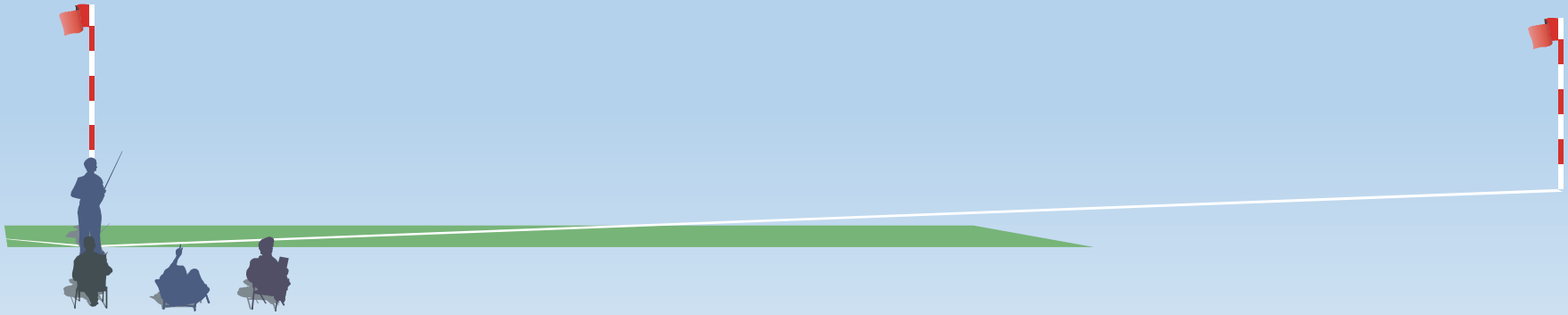




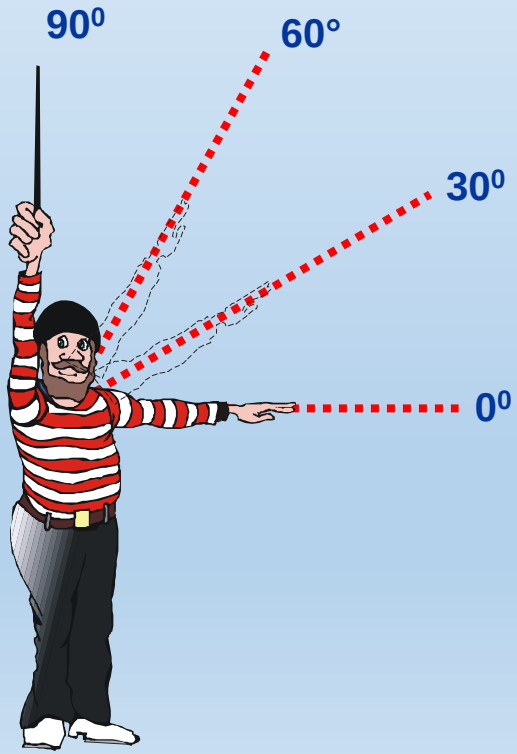
How to downgrade
Positioning – Box sides

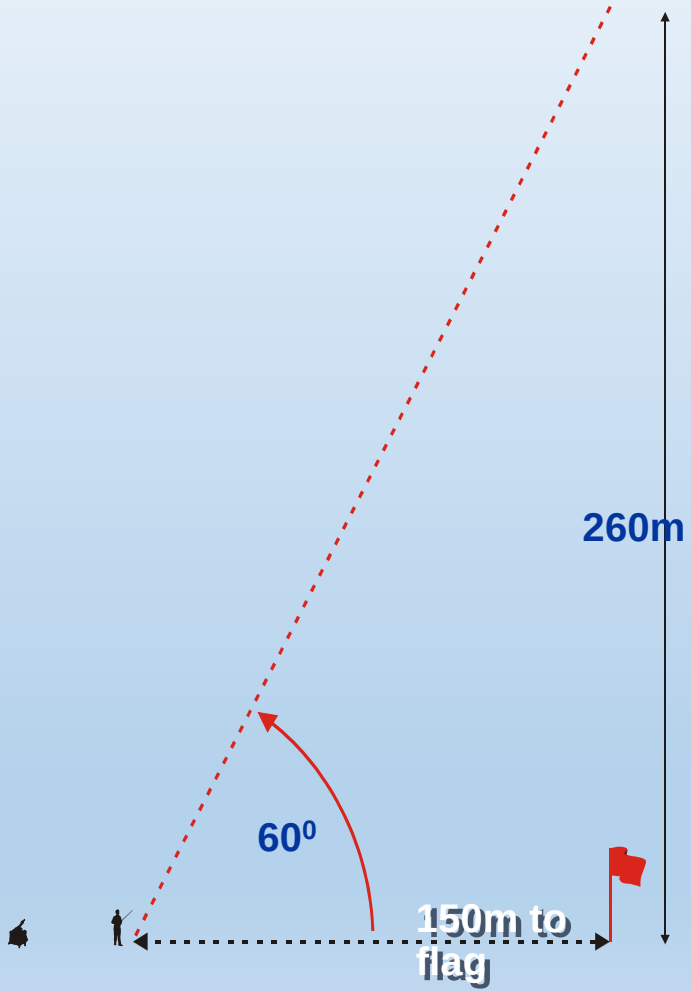


6 points downgrade for positioning.
(60% of manoeuvre is outside box marker.
60% is still inside!)



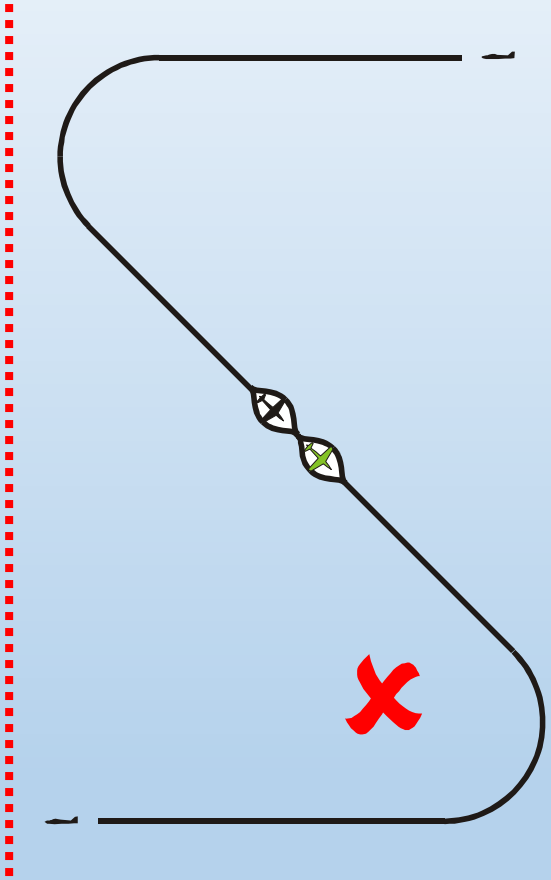
How to downgrade
Positioning – Vertical

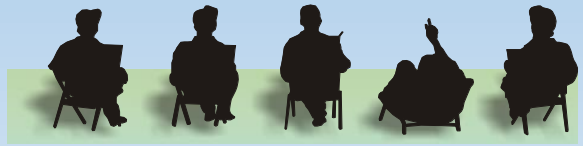




How to downgrade
Positioning – Center

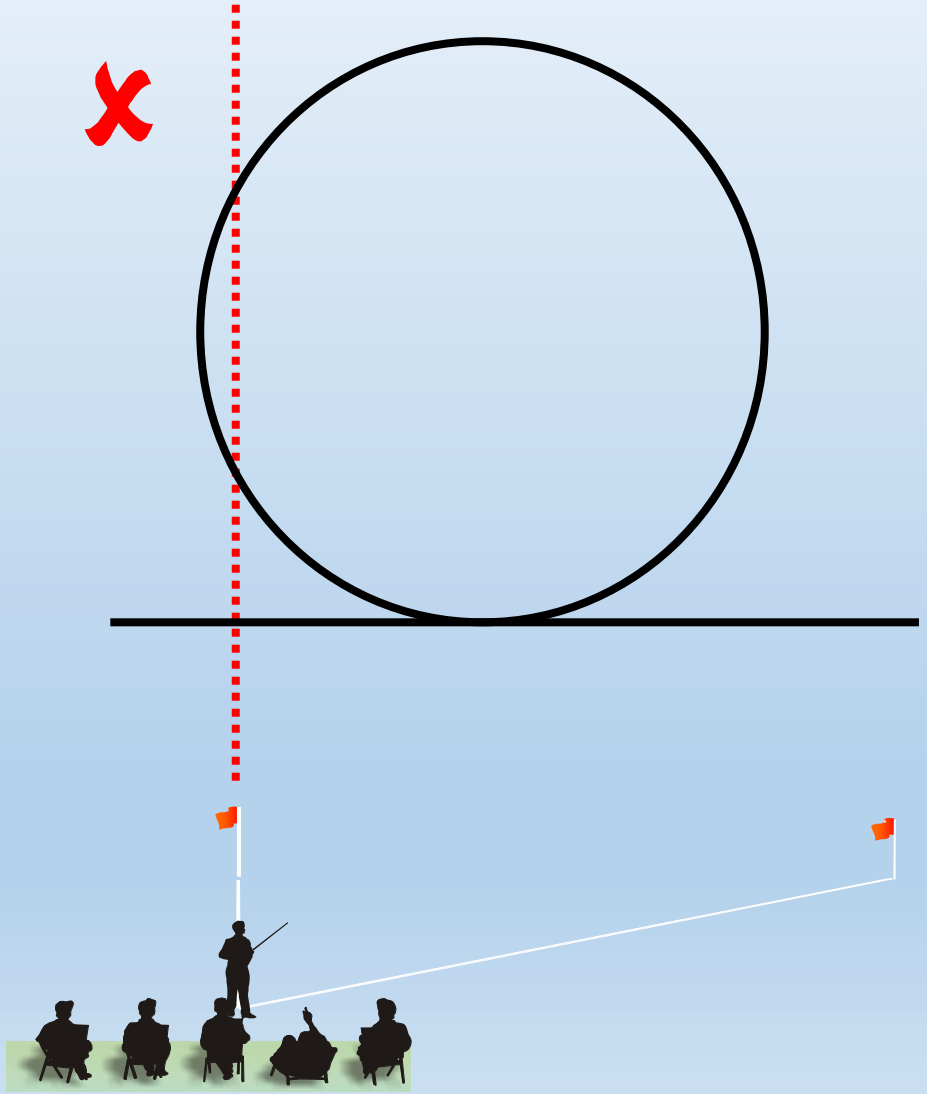
Off-centre positioning…
minus 3 or 4 points!
(for this example)





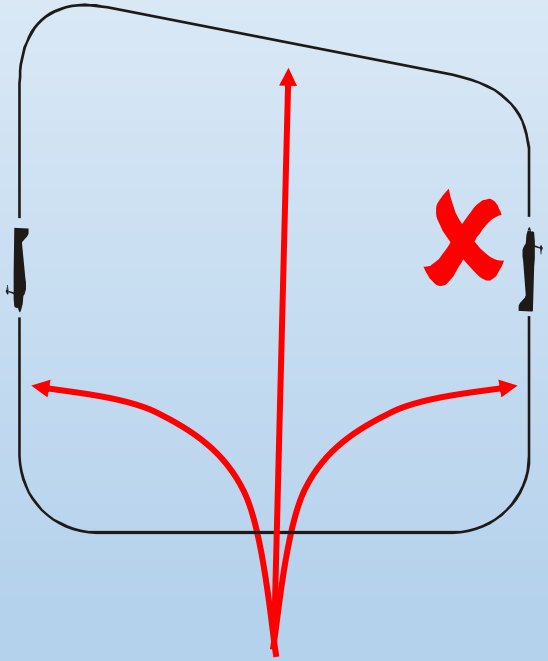
How to downgrade
Positioning – Center

Off-centre positioning…
minus 2 or 3 points!
(for this example)



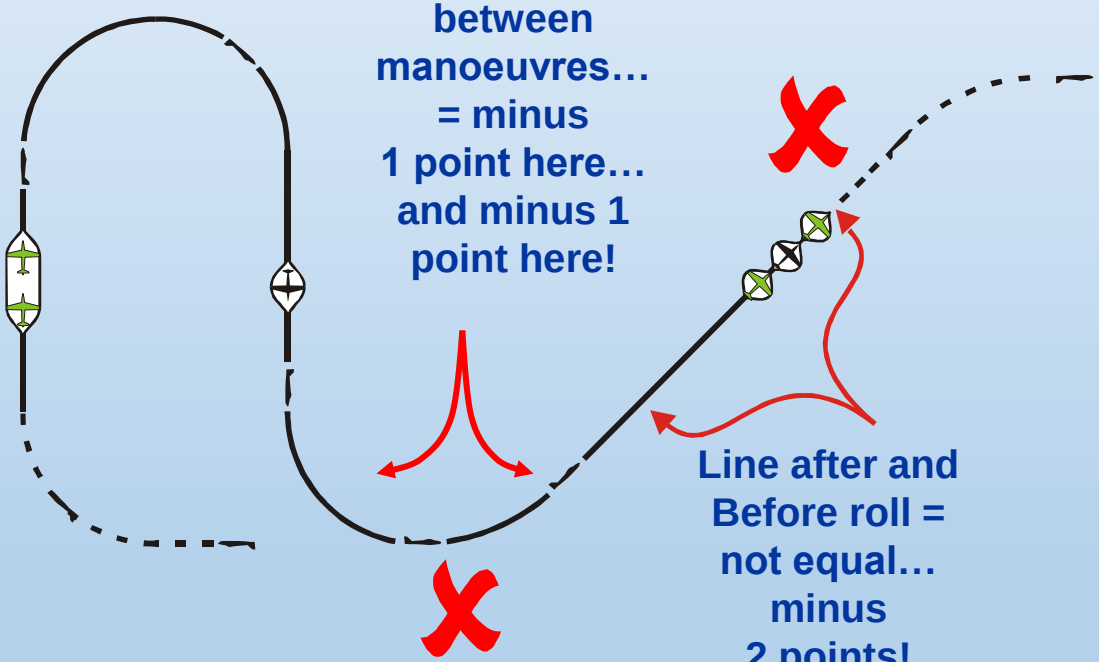
How to downgrade
Other criteria

Minor mis-relation between line lengths = minus 1 point!



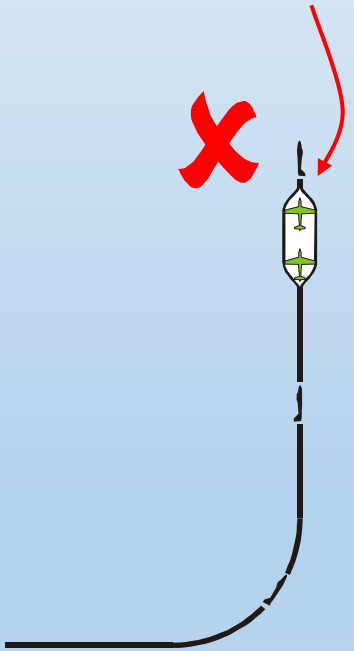
(This example maybe minus 2 or 3!)

No line between manoeuvres… = minus 1 point here… and minus 1 point here!

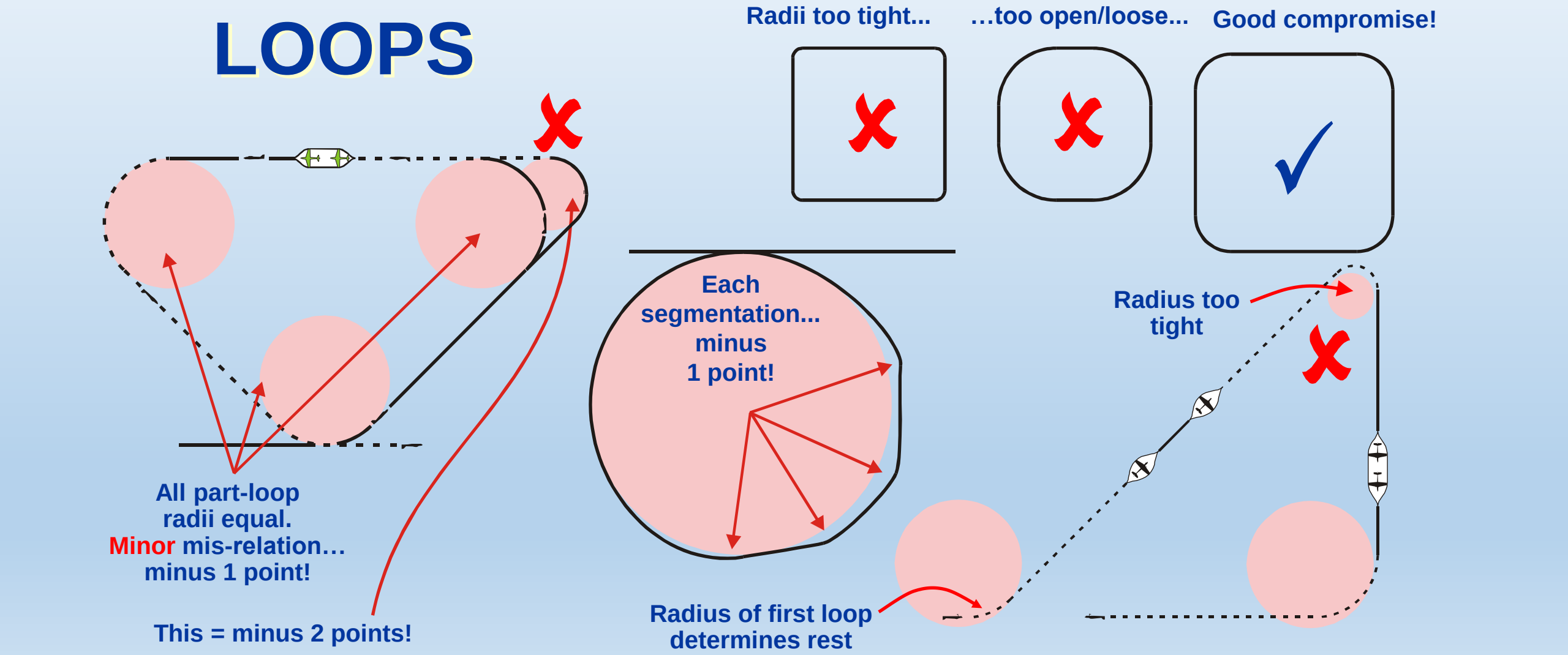


Line after and Before roll = not equal… minus 2 points!

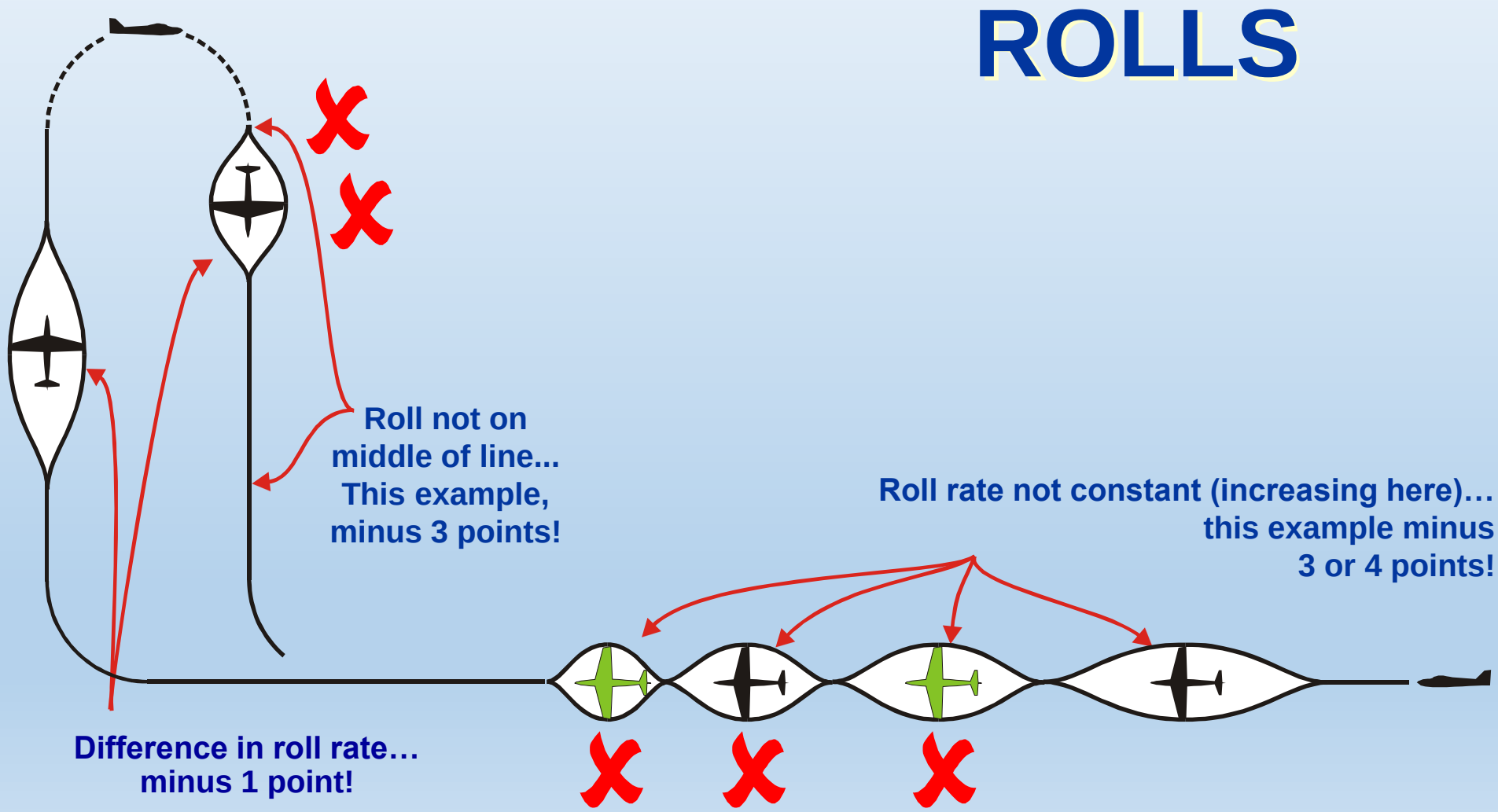
No line after roll… = minus 3 points!



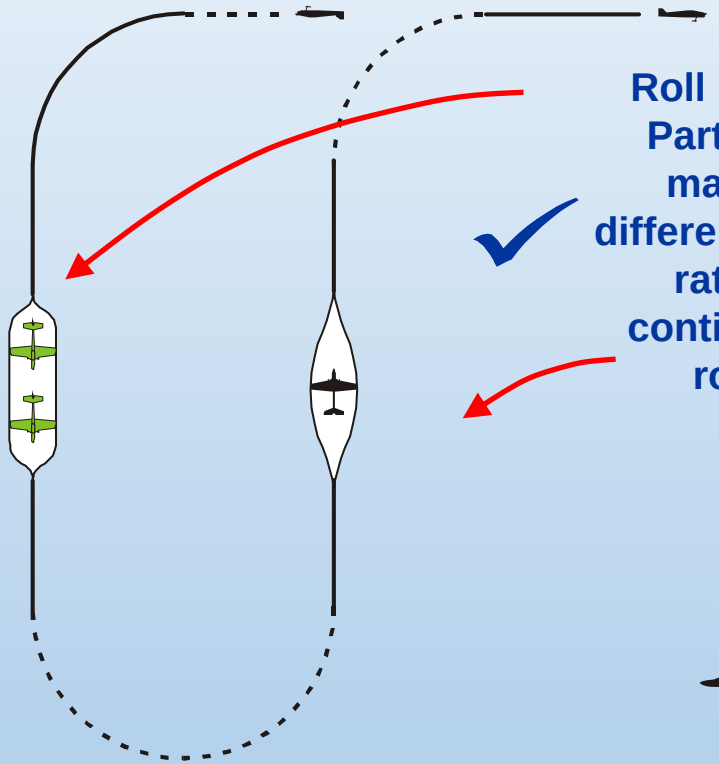
How to downgrade
Other criteria



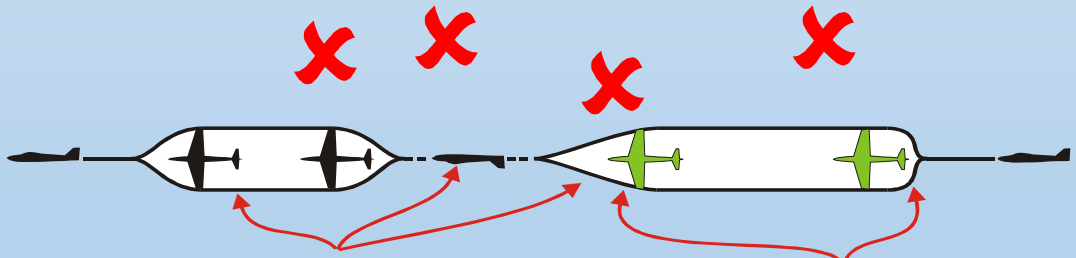
How to downgrade
Other criteria



How to downgrade
Other criteria



Roll rate of Part-rolls may be different to roll rate of continuous rolls



Not equal length of lines between part-rolls
minus 1 point for each!

Different roll rate…
minus 1 point!

Between consecutive continous rolls and part-rolls in opposite direction there must be no line!

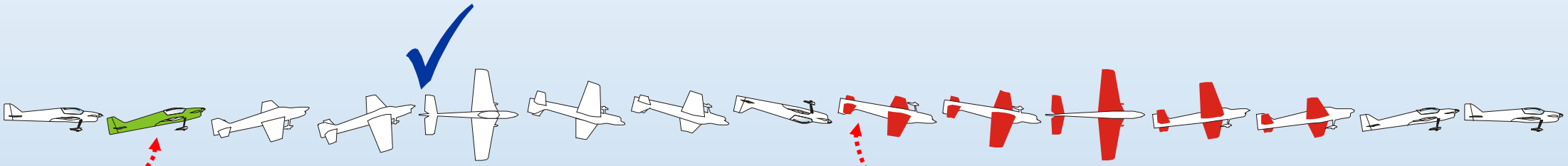
How to downgrade
Snap Rolls

A SNAP ROLL is basically a spin in the horizontal axis.

The model aircraft rolls with a continuous high angle of attack (positive or negative).

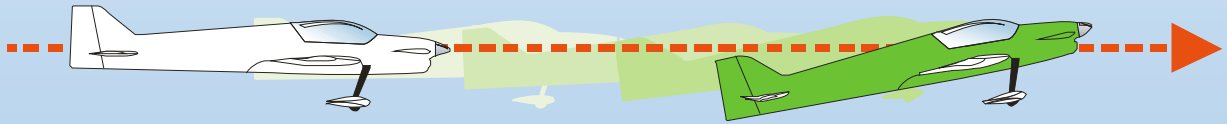
The tail should describe a corkscrew path.

How to downgrade
Snap Rolls



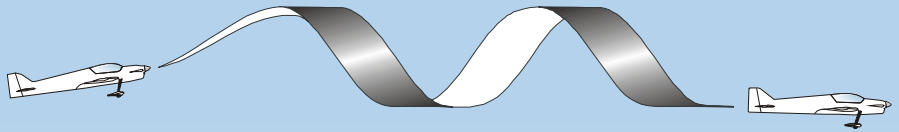
“BREAK” here

FLIGHT PATH (centre of gravity) must be level



Separation of fuselage attitude from flight path

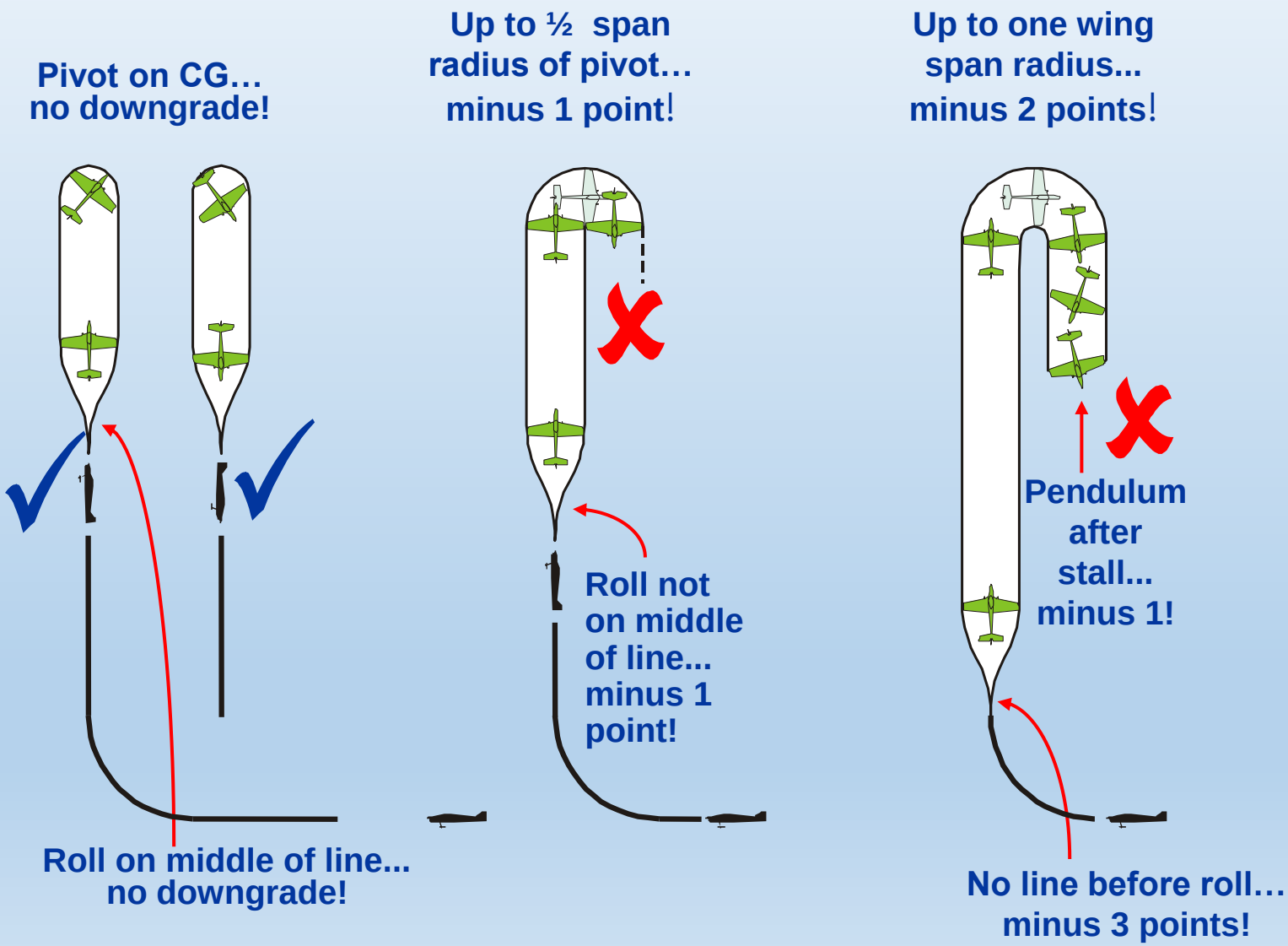
Barrel roll(s) and axial rolls are severely downgraded…more than 5 points!



How to downgrade
Snap Rolls

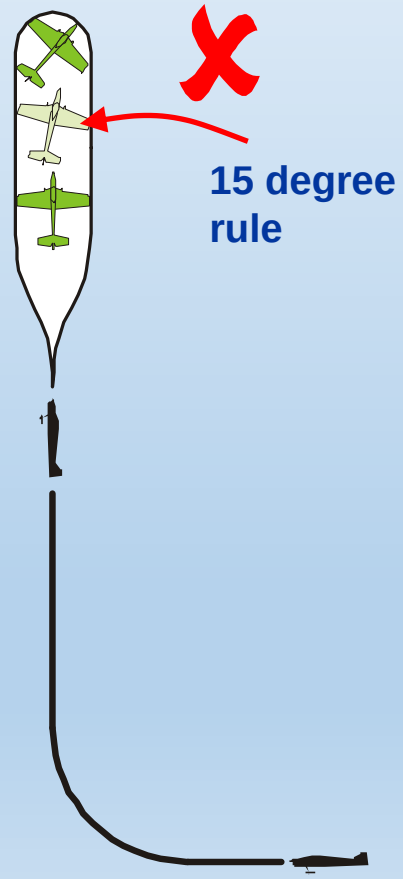
- If it is not a barrel roll….
- And it is not an axial roll….
- Then probably it is a Snap Roll!!
- If it is not a snap roll: Downgrade severly

How to downgrade
Stall Turns



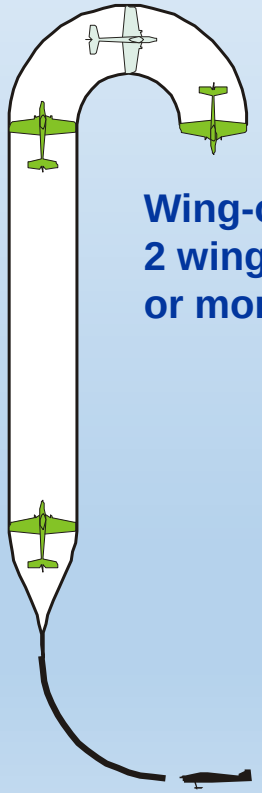
How to downgrade
Stall Turns

“Skid” before reaching Stall position…



15 degree rule

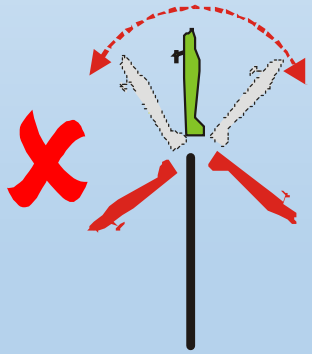
Wing-over… ZERO!



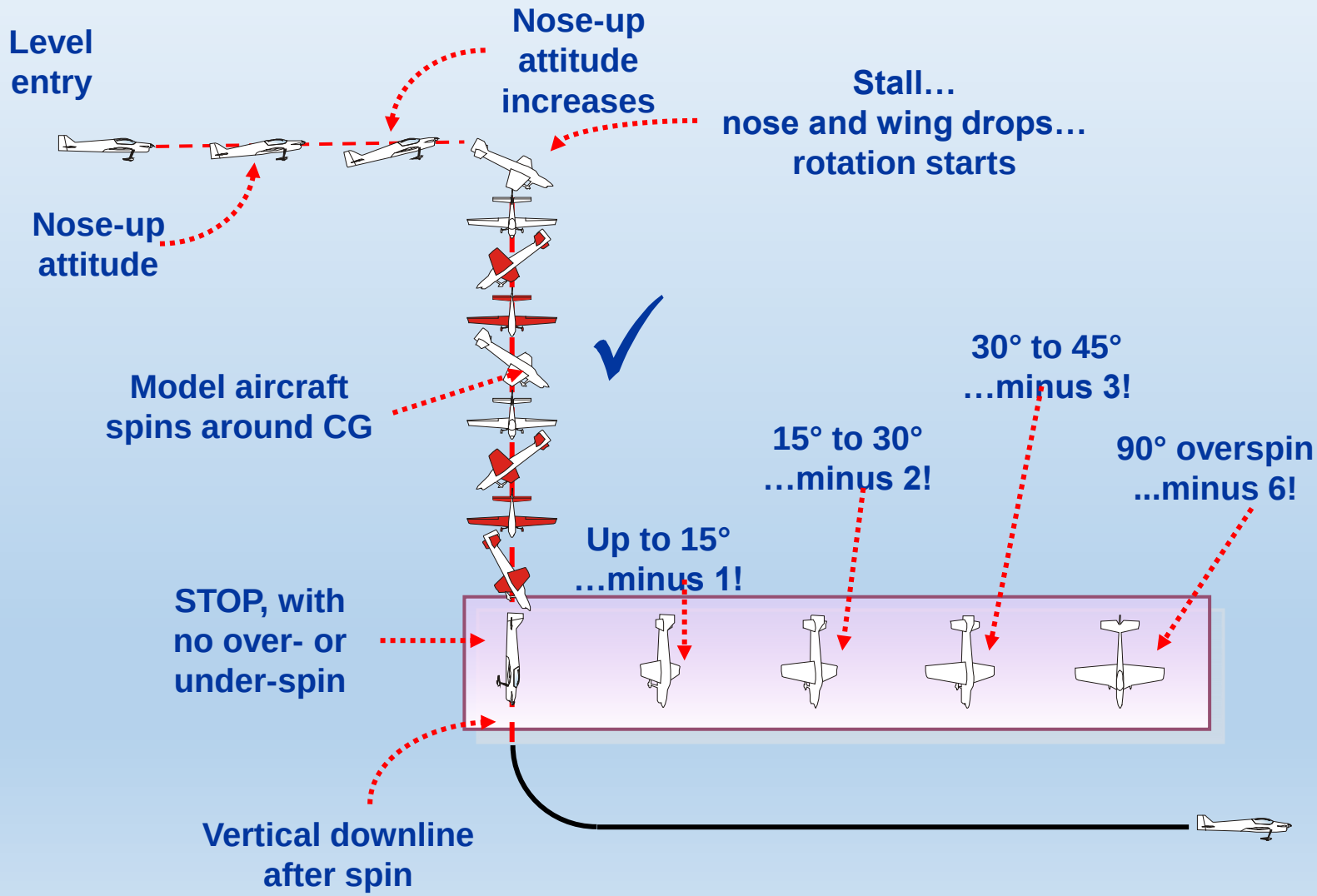
Wing-over = 2 wing spans or more.

Torque-off… 1pt/15 degree downgrade

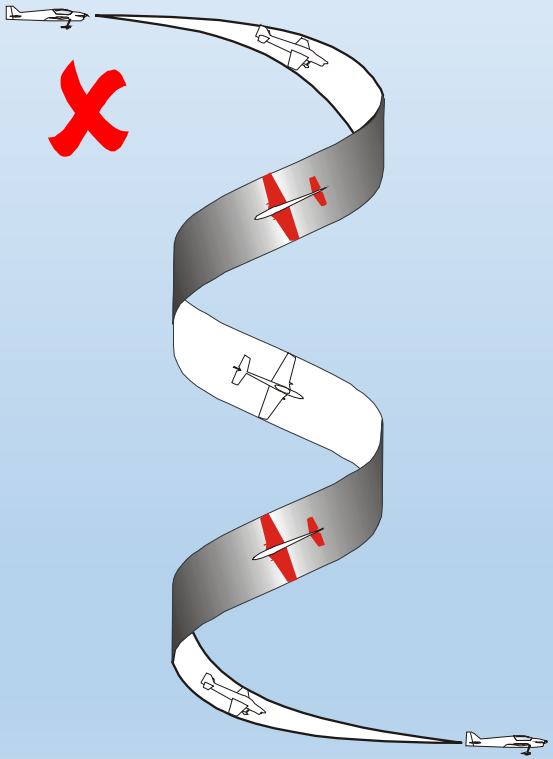
Flop forwards, or backwards… ZERO!



How to downgrade
Spins

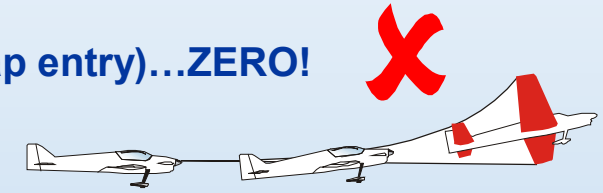


How to downgrade
Spins

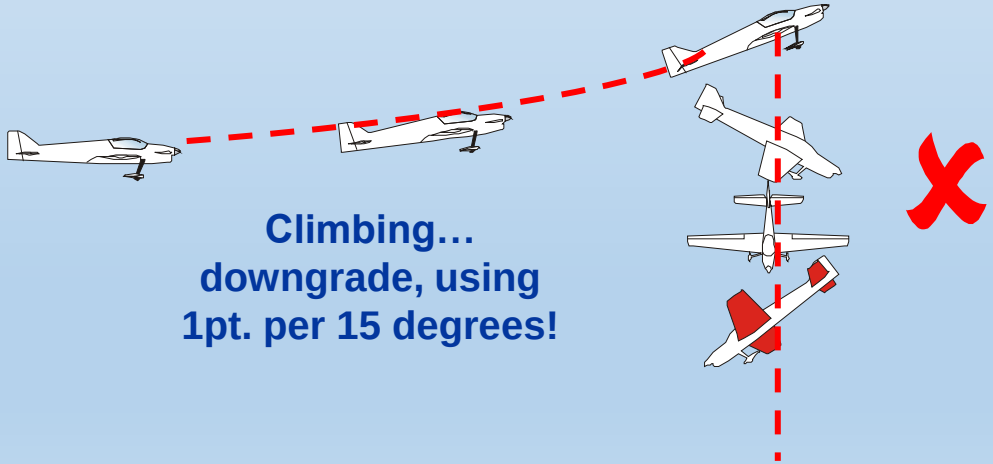


Spiral dive…scores ZERO!

Wing lift (snap entry)…ZERO!

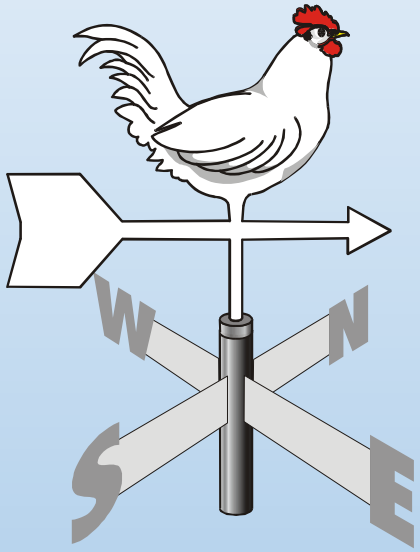


Forced with down-elevator… minus 4 or 5!



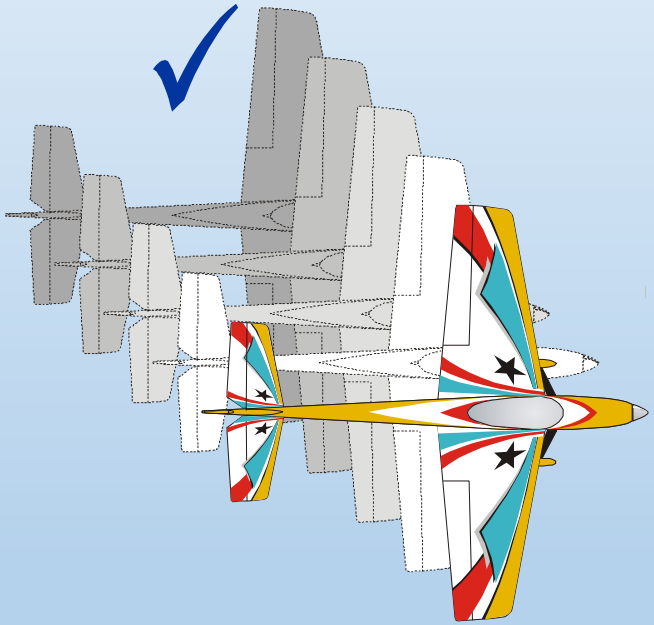
Climbing… downgrade, using 1pt. per 15 degrees!

How to downgrade
Spins



A weathercock is fixed to the earth, but free to swivel into the prevailing wind.

No penalty for drifting with wind.



A model aircraft is not fixed to anything!

Direction of flight

Up to 15° off… minus 1 point!

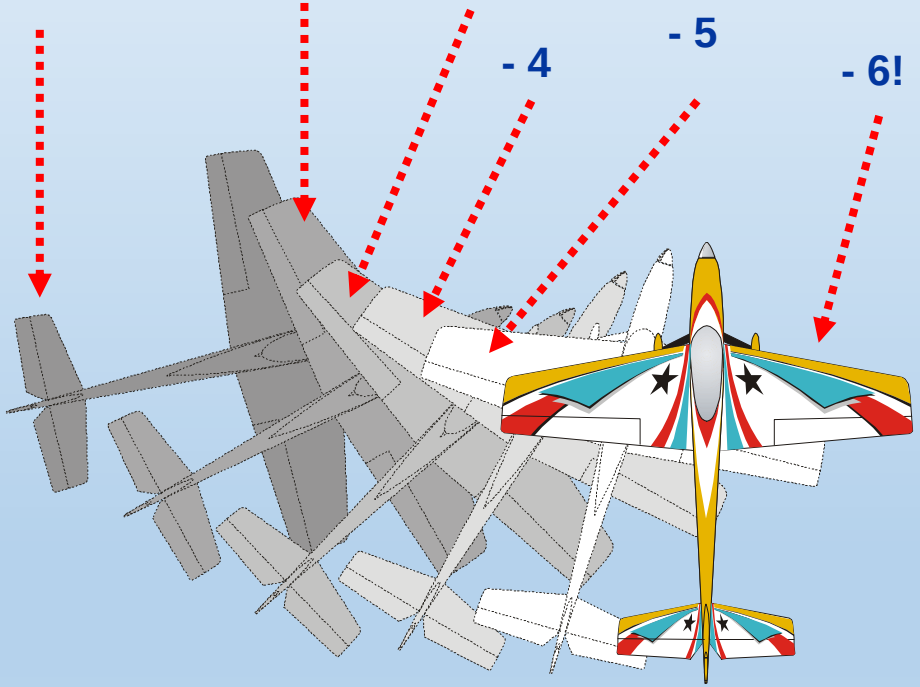
Up to 300 off… minus 2 points!

minus 3 points!

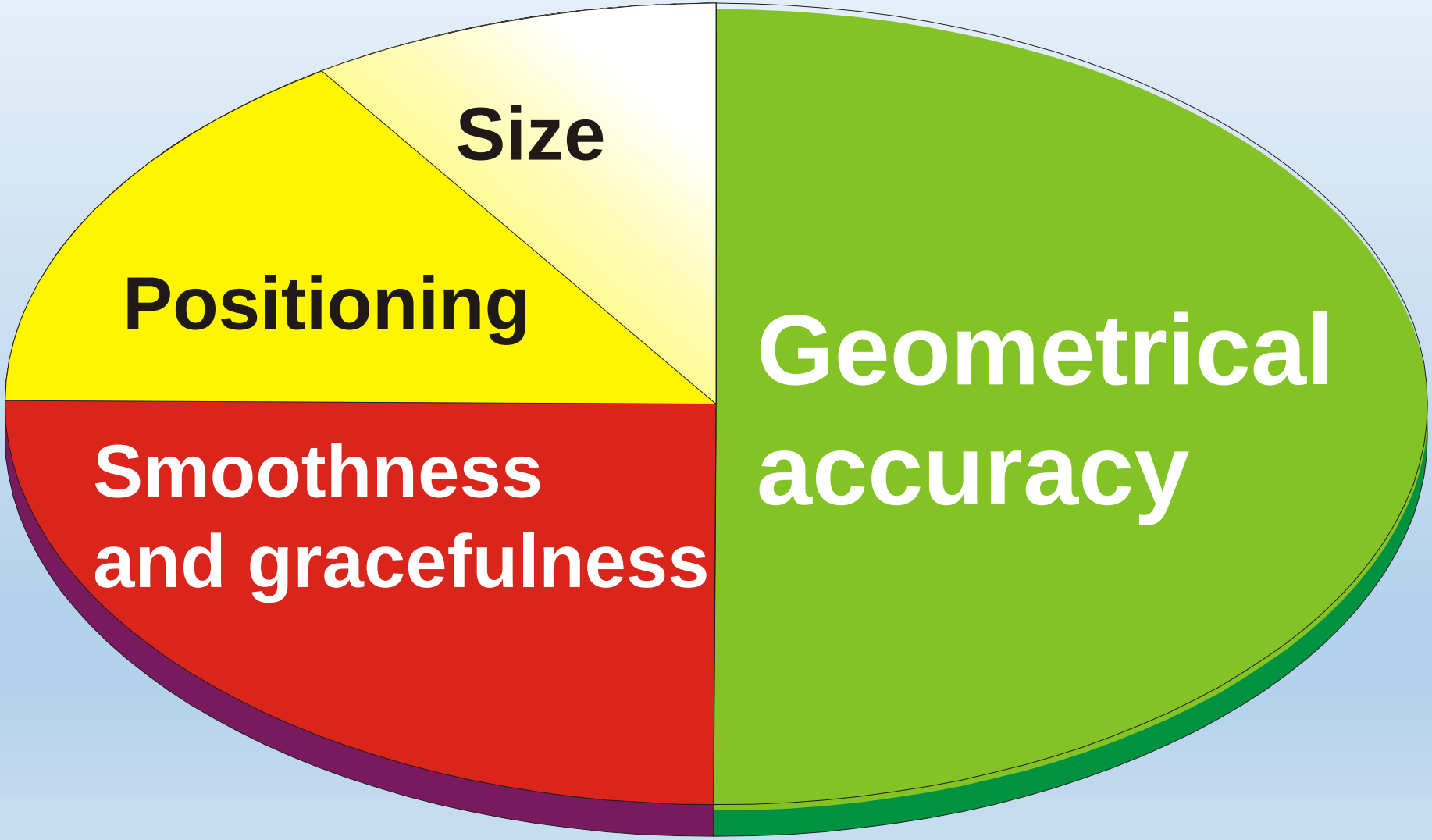
- 4

- 5

- 6!



How to downgrade
Weighting



How to downgrade
Smoothness and gracefulness

Harmonic appearance of the entire manoeuvre

Constant flightspeed

Radii not too tight and not too loose

Rolling speed not to low or too high

How to downgrade
Size

- **The size of a manoeuvre is scored by it‘s matching size relative to the size of manoeuv-ring zone and relative size of the other manoeuvres performed throughout the schedule**

How to downgrade?
Oops!!!

- We are all human
- We are judging a long day with a lot of flights
- So you will miss here and there sometimes a manoeuvre!!

- Use Not Observed N/O

How to downgrade

SCORE BETWEEN

10 and 0!

How to downgrade

BE CONSISTENT!

BE ACCURATE!

BE IMPARTIAL!

How to prepare as a judge?

- Know your schedule(s)!!
  - Like you would fly it yourself or even better
  - Know where the options are so you won’t be surprised
- Be able to read Aresti quickly as a backup
- Reminder sheet
- Make sure you get regular breaks
- Have your protection with you:
  - Sun
  - Rain
  - Wind
- Bring your own (good) chair

How to prepare as a pilot?

- Know your schedule
  - Think in advance, what is coming after the manoeuvre
  - Know the options
- Repair your errors where judges don’t see it
- Make sure your first manoeuvre is great!

That is it!