F3A Aerobatics Judging Guide

Principles to judge and weighting are: geometrical accuracy (50%), smoothness/gracefulness (25%), positioning (12.5%), & size relative to other manoeuvres in flight (12.5%).

Judging is based on the trajectory of its centre of gravity rather than attitude of the aircraft, manoeuvres must be wind corrected except where the aircraft is in a stalled condition (Spins, Stalls and Snaps). Criteria of judging: type of defect, severity of defect, number of times defect occurs, positioning of manoeuvre and size relative to other manoeuvres in flight.

Basic rule is to deduct 1 point for 15 degrees variation from defined manoeuvre geometry, lines should be judged more harshly than yaw or roll.

Defect	Downgrade
Lack of Gracefulness/Smoothness	1 - 3
Sizing different relative to other manoeuvres in flight	1 - 2
Positioning - *Appropriate distance out should be based on visibility of aircraft*	
Manoeuvre not centred (per 15 degrees)	1 - 4
More than 175m out (visibility is the criterion), >200m = 2-3 pts	1 - 3
Outside 60 degree markers, further out is worse (based on % out of box)	1 - 10
Lines	
Length of lines not graded	No deduction
Manoeuvre doesn't start and end with a horizontal line	1 per manoeuvre
Mis-relationship between lines	1 - 2
Rolls not centred on lines (except Split S and Immelmann)	1 - 2
No line before/after roll (except Split S and Immelmann)	3
Loops	
Radius of first loop determines radii of subsequent loops or part loop in the manoeuvre (ie. All loops or part loops must have same radius)	1 - 3 per change
Segmentation	1 or more per event
Departure from vertical plane	1 to 3
Turn-arounds are for positioning, entry/exit altitude can be different height	No deduction
Rolls	
Variation in roll rate	1 or more
Slowing down / speeding up at end of roll	1 per 15 degrees
Start or stop not crisp (each)	1
Not centred on lines (except Split S and Immelmann)	1 - 2
No line before/after roll (except Split S and Immelmann)	3
Change in pause length within manoeuvre	1 or more per event
Missed or extra point in point roll(s)	1 per 15 degrees
Roll or part-roll in wrong direction	Zero scored
Roll/Loop Combinations	
For Immelmann & Split S, roll not immediate before/after loop or part loop	2
For Immelmann, roll starts before loop or part loop completed	1 per 15 degrees
On Cuban 8's or half Cubans, rolls must be centred on lines	1 - 3
Humpty Bumps must have consistent radii in all part loops	1 - 3
Integrated rolls or part rolls not smooth and continuous and correctly integrated	1 per 15 degrees

Snap Rolls - *Use same basic judging criteria as axial rolls above. If it's not an axial or barrel roll, it's a snap roll*	
Attitude (positive or negitive) at pilot's discretion	No deduction
Stall/break from line of flight not observed but model still auto rotates	1
Stall/break from line of flight not observed and barrel rolls	Severe (5+)
Axial roll disguised as a snap	Severe (5+)
Aircraft unstalls during snap	1 per 15 degrees

Spins - *Nose up attitude, nose drops as aircraft stalls, simultaneously, wing drops in direction of spin*	
Gain in altitude prior to spin	1 per 15 degrees
Severe yawing/weathercocking when near stalled	1 per 15 degrees
Drift when stalled or near stalled (not outside aerobatic zone)	No deduction
No stall, snap rolled, or spiral-dived into spin	Zero scored
Slides into spin	1 per 15 degrees
Forcing spin in opposite direction on initial rotation	Severe (5+)
Forcing spin from high angle of attack with down or up elevator	4 - 5
Conditions (ie. no wind) may mean aircraft doesn't completely stop	No deduction
Rotation errors judged in same manner as rolls	1 per 15 degrees
Reversal of rotation not immediate (eg: becomes unstalled)	Severe (5+)
Roll rate in reversal significant (slight difference ok)	1
Unloading spin	1 per 15 degrees
Specific attitude of aircraft during spin not judged as long as remains stalled	No deduction
No visible vertical line following rotation(s)	1

Stall Turns	
Pivot up to ½ wingspan	1
Pivot up to 1 wingspan	2 - 3
Pivot >1 ½ wingspans	4 - 5
Pivot >2 wingspans, flops over	Zero scored
Torques off	1 per 15 degrees
Pendulum movement after pivot	1
Skid before reaching stall turn (early rudder)	1
Drift when stalled or near stalled (not outside aerobatic zone)	No deduction
Part loops on entry/exit not constant and equal radius	1

Rolling Circles - *Mainly about maintaining consistent circular flight path, altitude, roll rate and roll integration*	
150m distance requirement not applied. Deduct where >350m	1 - 3
Deviations in geometry	1 per 15 degrees
Either performed towards or away from judges	No deduction
Roll or part roll in wrong direction	Zero scored
Apply same rules as per rolls	

Note: This judging reference is not intended to replace the FAI Sporting Code 2017 - Annex 5B - Manoeuvre Execution Guide.

When judging, please judge others, as you would expect others to judge you, judge honestly and judge fairly.

The APA Committee.