

You should be alert to these rules no matter what the particular maneuver is that is currently being flown. Beyond these, there are a few maneuver specific rules you must get from a judging seminar or from study of the Flying & Judging Guide. The twelve General Rules are:

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|-------------------|------------------|-------------------|
| - Wind Correction | - Line Length | - Follow the Arc |
| - Line Alignment | - Line Centering | - Arc Centering |
| - Line Omission | - Corner | - Roll Execution |
| - Line Addition | - Radius | - Roll Hesitation |

Each of these is covered in turn below but consider first when judging actually begins:

Sequence start - The start of judging for the sequence occurs when the pilot pulls/pushes from the horizontal entry line for the first maneuver. Until then, no deductions are to be made, i.e., the entry line to the first maneuver is not judged.

Maneuver start - For maneuvers after the first in a sequence, judging begins for that maneuver as soon as the aircraft reaches a horizontal line after completion of the previous maneuver. Each maneuver must begin and end on a horizontal line. It is a 2 pt deduction (one from each maneuver) if that line is omitted.

1. - Wind Correction

All the maneuvers that we fly must be wind corrected. It is the responsibility of the pilot to fly a "true" figure for the judge no matter what the wind may be doing. Therefore:

- No deductions are to be made for plane attitude required for wind correction.
- No deduction for wind caused displacement that occurs when the aircraft is stalled. There are four instances in our maneuvers when the aircraft is stalled.

They are: Spin entry; Snap; Hammer rotation; Tail Slide slide.

Given the preceding all normal judging rules apply resulting in appropriate deductions.

2. - Line Alignment

We fly in a simple three axis air space. The X axis is parallel to the Deadline which is 100 feet out from the pilot station and parallel to the flight line as defined by the CD. The Y axis is perpendicular to the X axis and with the X axis forms a horizontal geometric plane that is the ground surface we fly over. The Z axis is perpendicular (vertical) to that ground plane.

Within this three axis space we fly lines that must be :

- parallel to the X or Y axis (Y axis flight is called "cross box")
- Either horizontal, vertical or at a 45 degree angle to the horizontal, only
- Flown with the wings perpendicular to the prescribed plane of flight.

At all times, the judge must rate each line within the figure and measure it against this standard. Should the aircraft deviate from any one, two or in all three axis', that deviation should result in a deduction that is .5 of a point for each 5 degrees of deviation.

For example, if the Aresti calls for a 45 degree up line to be flown parallel to the X axis and the pilot flies the aircraft such that the line is moving away from the judges at a 20 degree angle (yaw) and is also 35 degrees to the horizontal (pitch), the deduction for that line within that maneuver is 3 points. If the aircraft also has its wings at a 5 degree angle (roll) to the plane of the required 45 degree up line he gets dinged another .5 of a point.

This three way standard (yaw, pitch and roll) must be applied to all lines within all figures except for Family Two (turn or roller). In addition, the yaw standard (parallel to the X or Y axis) applies to the arcs that join the lines within figures and should be judged to the same standard of .5 of a point for 5 degrees of deviation. The roll standard (wings perpendicular to the plane of flight) also applies to all lines and arcs within figures with the same deduction except when the aircraft is rotating in an optional element such as a roll, snap or spin or when executing a Family Two maneuver (turn or roller).

3. - Line Omission

There are certain instances where an aircraft may omit a required line and still be judged to be in accordance with the Aresti, i.e., not zero'd. Two examples are:

- omitting the line that is required to be flown between maneuvers
- omitting one or both of the line segments that are supposed to be flown on either side of an optional roll element done on a line

If this occurs, the standard deduction is 1 pt for each omitted line

4. - Line Addition

It is also possible for a pilot to fly a line where he shouldn't. For example, an Immelman with an half roll at the exit is to have NO line between the 180 degree half loop and the half roll. If there is a visible line, it is a 2 point deduction.

Note that the F&JG indicates that if the unwanted line is noticeably extended, this deduction should be increased. However, it gives no guideline for what the increase should be nor does it say when a very long line is sufficient to zero the maneuver. You are on your own in these cases - just be consistent.

5. - Line Length

In general, the lines that form Base Figures need not be the same length. There are cases, however, where they need to be of equal length. Some examples are:

- The sides of a square, diamond or octagon loops
- The lines in Family three figures (only seen in the upper classes)
- The length of the 45 degree lines in a Cuban Eight

If the lines are supposed to be of equal length and they are NOT, the deductions are:

- A visible length variation but less than 2 to 1 results in a 1 pt deduction
- A variation of 2 to 1 but less than 3 to 1 results in a 2 pt deduction
- A variation of 3 to 1 or more results in a 3 pt deduction max

In such a case the first line flown within the figure sets the standard against which all subsequent lines are compared.

As noted, the general rule is that lines within figures do not need to be of equal length. Some examples where you might intuitively think that the lines that form the base figure should be of equal length but in fact need **NOT** be equal are: Figure N, Figure Z, Humpites (up/down lines), Stall Turns (up/down lines).

6. - Line Centering

Snaps and rolls are optional elements and when executed on a line, they are supposed to be centered on that line. Also, there may be more than a single optional element called for on one line. If so, the combination of optional elements is to be centered. The centering requirement calls for equal line segments to be flown on either side of the optional element(s). If these line segments are not equal then deductions are to be made in a similar fashion to the line length rule above:

- A visible length variation but less than 2 to 1 results in a 1 pt deduction
- A variation of 2 to 1 but less than 3 to 1 results in a 2 pt deduction
- A variation of 3 to 1 or more results in a 3 pt deduction max

With optional elements the pilot may erroneously omit one or both of the line segments formed by the optional element done on the line. This results in the following deductions:

- Omitting both line segments results in a 2 pt deduction
- Omitting one of the two line segments results in a 4 pt deduction.

This last item is calculated as 1 pt for the omitted line and 3 pts for having very different line lengths, i.e., something versus nothing.

Note that a spin will always be the first optional maneuver flown on a down line. It may be followed by snaps or rolls. These snaps or rolls do **NOT** have to be centered on the line that follows the spin. Centering in this instance is not a judging criteria.

7. - Corner

All the corners that we fly are required to follow a smooth constant radius. Flying a sharp corner results in a deduction which is 1 pt for each sharp corner flown within the maneuver. What constitutes "sharp" is up to you. Just be consistent.

8. - Radius

All arcs we fly, partial loop up to a full loop, must be of constant radius once the radius is established. There is no guideline provided for how much of a radius a judge must see before deciding what the radius is. Again, it's up to you. However, once you decide what the initial radius looks like, any deviation is to be penalized. The deduction is 1 pt for each variation in radius. So once the pilot starts an arc, if you then observe any tightening or easing of the initial radius, you should deduct 1 pt for each occurrence.

9. - Follow the Arc

Optional maneuvers may also be flown on arcs, e.g., a roll at the top of a closed loop. In these instances the flight path of the aircraft during the execution of the optional maneuver is required to track the arc. If it does not track the arc, the deductions are:

- 2 pts if the optional maneuver does not follow the curve of the arc
- 2 pts per visible line on either side of the optional maneuver, if any

As noted above, the optional elements may actually be a combination of rolls and snaps. If this is the case, the execution of the total set of optional elements is still required to follow the arc of the Base Figure and the above deductions apply.

10. - Arc Centering

In addition to “Follow the Arc”, the optional elements done on an arc must be centered on that arc, e.g., the roll done at the peak of a closed loop should be executed such that the aircraft is half way through the roll element at the exact peak of the loop. If the pilot doesn’t achieve this he is to be penalized .5 per 5 degrees that he misses the center.

11. - Roll Execution

When an optional roll element is called for on a line or arc there are two things which are left up to the pilot and which are not judging criteria. They are:

- Rate of roll
- Direction of the roll. If, however, the roll is part of a combination of roll elements, the later element may be specified as “opposite” by the Aresti and so, the pilot only has this choice for the first element in the combination.

Given the preceding, the aircraft is required to:

- Have a constant rate of roll and is penalized 1 pt for each visible variation
- Except for a snap, maintain heading through the roll and is penalized .5 per 5 degrees of pitch and/or yaw deviation
- Stop the roll precisely at the point called for by the Aresti and is penalized .5 per 5 degrees that his stopping point is too much or too little
- Fly linked rolls as a continuous movement and a pause zeros the maneuver

12. - Roll Hesitation

A simple roll (non snap, non hesitation) is to be flown without any pauses in its rolling motion. If there is a visible pause prior to the completion of the called for degree of rotation, the maneuver is zero’d.

A point or hesitation roll must:

- Include exactly the number of pauses called for by the Aresti. Any more or less zeros the maneuver
- Have the same interval for its pauses and periods of rotation and is to be penalized 1 pt for each visible variation.

Note that unlinked and opposite roll elements are required to have a visible pause between the opposite rotational elements. However, the F&JG does not specify what the penalty is for omitting the pause - suggest 1 pt. If the pause is extended such that the judge notes a visible line between the opposing rotational movements, the penalty is an additional 2 pts per the Line Addition Rule.