

F3 – Helicopter Technical Notice

Revisions for Early Implementation

It was agreed at the recent CIAM Plenary Meeting that the following amended rules in the Sporting Code Volume F3 - Helicopter dealing with safety considerations and clarification of existing procedures will be effective from 1st May 2016 and will be in force for all remaining 2016 FAI competitions.

ANNEX 5E - F3C Judges' Guide

5E.6.11. - Autorotations

This rule is effective
from 1st May 2016.

~~An autorotation begins when MA crosses an imaginary plane that extends vertically upward from a line drawn from the centre judge out through the centre of the 1m helipad. MA must be in the autorotation state when it cuts this plane, the engine power must be reduced to idle (or off) at this point and the MA must be descending. During the manoeuvre, the forward speed and rate of descent should be constant, which means that the angle of the flight path is also constant. After landing the MA must be parallel to the judges' line. If the flight path is stretched, shortened or deviated from, to reach a circle the manoeuvre must be downgraded. The original flight path gives a basic maximum score according to the description and there will be additional downgrades of 1 or 2 points depending of the severity of the deviation. For example: If the flight path clearly points to a landing close to flag 1 (2) and the path is stretched to reach a circle, the score can only be a maximum of 6 (outside the circles) and there will be an additional downgrade of 2 points for the stretch, so the score can only be a maximum of 4. If the pilot would have landed without stretching, the maximum score would have been a 6. Therefore, stretching the flight path must never lead to a higher score.~~

Scoring criteria for Autorotation landings:

~~Landing gear inside 1m circle = Maximum 10 points.~~

~~Rotor shaft points to inside of 1m circle = Maximum 9 points.~~

~~Landing gear inside 3m circle = Maximum 8 points.~~

~~Rotor shaft points to inside of 3m circle = Maximum 7 points.~~

~~Rotor shaft points to outside of 3m circle = Maximum 6 points.~~

The autorotation begins when the helper announces the figure with „now“ and ends with the landing and the helper calling „finished“. The figure autorotation may contain additional manoeuvres.

The manoeuvre description must state clearly the moment when the engine has to be powered off or set to idle position. In order to obtain the maximum score of 10 points the MA must have executed the flying manoeuvres exactly as described in the manoeuvre description. The MA must land smoothly inside the 1 m circle, it must be parallel to the judges line and the engine has to be powered off or set to idle position.

Scoring:

Flying manoeuvres incl. smooth landing parallel to the judges line = max. 6 points

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Scoring for the landing:

Rotor shaft is inside the 1 m circle = + 4 points

Rotor shaft points to the line of the circle = + 3 points

Rotor shaft is inside the 3 m circle = + 2 points

Rotor shaft points to the line of the 3 m circle = + 1 point

Rotor shaft is outside the 3 m circle = + 0 points

Note: If a flying manoeuvre is missed out or if the engine is not powered off (or not set to idle position), the score for the complete figure shall be zero.

ANNEX 5G - F3N Judges' Guide

5G.6.7. – Flip

This rule is effective from 1st May 2016.

A flip is a rotation about an axis normal to the rotor shaft. Stationary flips need to have a small altitude oscillation (low with RD horizontal, high with RD vertical) which should be less than 50 cm. Lateral deviations of these flips should be downgraded by 1 point per 50 cm.

Travelling flips should not affect the described flight path.

A pushed flip is done by performing the elevator impulse at the transmitter in forward direction. A pulled flip is done by performing the elevator impulse at the transmitter in backward direction.

ANNEX 5G - F3N Judges' Guide

5G.8.6. – EVALUATION OF THE LEVEL OF DIFFICULTY FOR FREESTYLE SCHEDULE

This rule is effective from 1st May 2016.

Replace the current table 5G.8.6 and with the table below:

Aerobic Manoeuvres in Basic Orientations	
10	Examples: Immelmann, short straight passages, loop, loop with full pirouette on top, roll, turn, 540° turn, pirouettes
15	Examples: ½ Cuban eight, long passages, nose-in circle, flips, autorotation
20	Examples: inverted hovering on eyelevel, flip sideward, Cuban eight, flips with hovering stops
20-30	Examples: Horizontal eight, loop sideways, turn with hesitations and/or changes of turning direction, rolling stall turn, autorotation with 180 degree turn, death spiral, knife edge pirouette, speed circle, stationary tictoc, funnel, 4-point roll, multi-point tictoc, Snake
Aerobic Manoeuvres in Several Orientations	
30-45	Aerobic manoeuvres that demonstrate several orientations like inverted, sideways, backwards etc. Examples: Backward Inverted Cuban eight, skids in and out knife edge manoeuvres, snake parallel to flight line and to centerline, different kinds of funnels like waltz
Aerobic Manoeuvres including Piros, Rolls and Flips Etc	
40-55	Aerobic manoeuvres flown in a way where in addition to the CG movement of the main manoeuvre, the model is continuously performing rolls, piros, flips,

	tictocs or similar. In order to get a high score, many orientations must be shown. Examples: Pirouetting Globe, Chaos, Rolling Globe, Rolling circles, Pirouetting funnels
Aerobatic Manoeuvres including Reversals and Transformations	
50-60	Aerobatic manoeuvres flown in a way, where piro, rolls, tictocs or other secondary manoeuvres are included/integrated and reversed in an equal and balanced way. Examples: Rolling globe with roll reversals, horizontal circle with continues flips/rolls so that tail boom is always parallel to centerline, Reversing chaos In order to score near maximum, many orientation changes must be displayed, and flight must include many clearly defined manoeuvres.

ANNEX 5G - F3N Judges' Guide

5G.8. – CRITERIA FOR JUDGING FREESTYLE FLIGHT AND MUSIC FREESTYLE

This rule is effective from 1st May 2016.

For Freestyle and Music Freestyle flights, the entire flights will be judged according to the table below.

Criterion	Max Points Freestyle	Max Points Music Freestyle
Difficulty	80 60	40
Harmony	20	60 50
Creativity	20	40 50
Precision	20 60	20 40
Safe presentation	20	20

For both the Freestyle and Music Freestyle flights the judges can give up to the maximum points (for Freestyle - ~~80~~ **60** for difficulty, **60 for precision** and 20 for the other criteria).

For Music Freestyle only, the points for Difficulty are multiplied by a K-factor of ~~0.5~~ **2/3** and the points for Harmony are each multiplied by a K-factor of ~~3~~ **5/2**. Creativity points are multiplied by a K-factor of ~~2~~ **5/2**.

For Precision the points are multiplied by a K-factor of 2/3 in Music Freestyle.

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