

Pilot training for 2026 : July 18, 2026

Dear friends

It goes without saying that all the comments that follow are only advice.

In order to achieve the most effective training possible, it is advisable to follow three important rules.

1st Rule :

It is desirable to have the most complete possible tracing of the area of evolution.

It is not enough to place 2 flags 10m apart, a central circle and a point for the pilot's position if the other markers are absent.

If the pilot does not have a coach, which is unfortunately often the case, at a minimum the intermediate markers **A** and **B** and the 120° flags must be drawn for the pilots.

For pilots who are fortunate enough to have a coach, it would be desirable to have the most complete tracking possible.

A cross at each judge's position, flags for the 120° frame of the judges and the one behind the central judge in **C1**.

Additional remarks:

In Spanish, French, etc., we differentiate between the word "figure" and the word "manoeuvre". A figure involves several manoeuvres. Whereas in English, the same word, "manoeuvre," is used: A manoeuvre (figure) involves several manoeuvres.

To avoid any misunderstanding, I will distinguish between the two in the following comments.

Why are the reference points "**A**" and "**B**" important ? Because they are passing points that must be strictly respected when carrying out certain figures.

The point "**C1**" is also important provided that the judges' 120° frame is materialised because if the coach stands on this point he can check if the figure is well centred and if the helicopter is outside the 120° window.

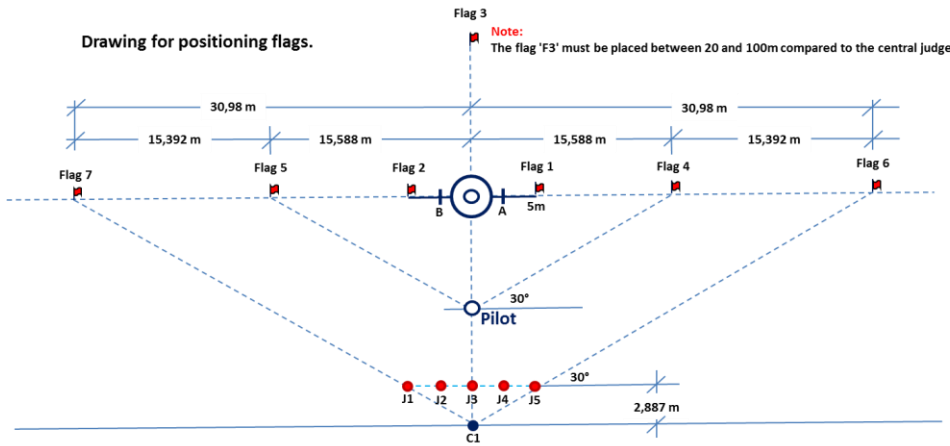
The judges' location must be marked (cross, see the drawing a little further on), because the coach will have to move along this line during the static figures and not at the pilot's height.

The 120° reference points for pilots are necessary in order to start the aerobatic manoeuvre as early as possible.

As in a competition, it is necessary to place a flag far away on the centre line so that the coach can check the centering of the aerobatic figures.

To materialise all the points where it is necessary to put a flag or a cross, it is necessary to sink into the ground one the tube (see photo) so as not to have to do it every time.

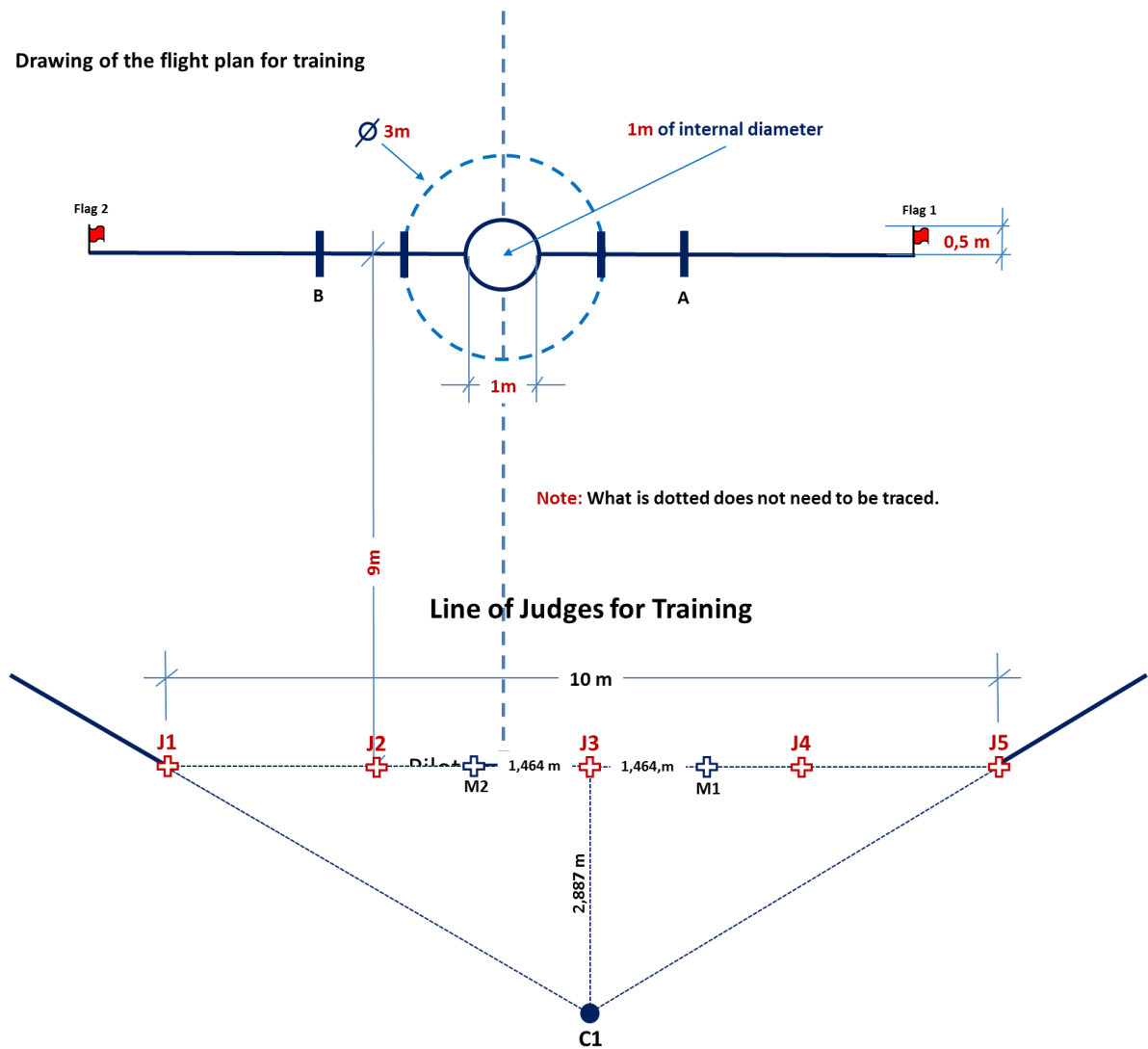
Drawing for positioning flags.



Note 1: The flags (or cones) F4 and F5 serve as references for the 120° frame of the pilots.

Note 2: The flags (or cones) F6 and F7 serve as references for the 120° frame of the judges.

Drawing of the flight plan for training



Comment:

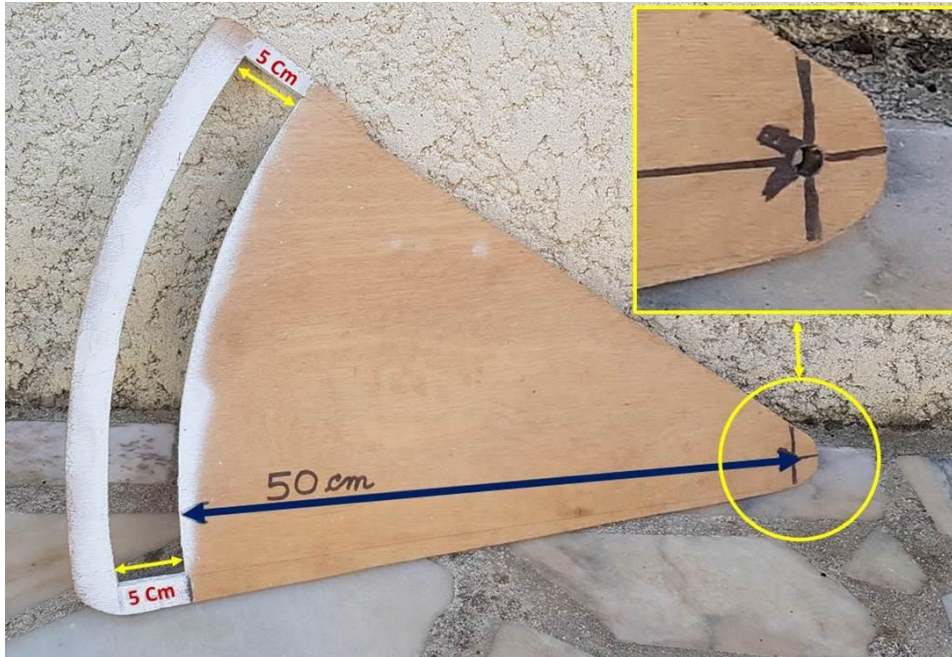
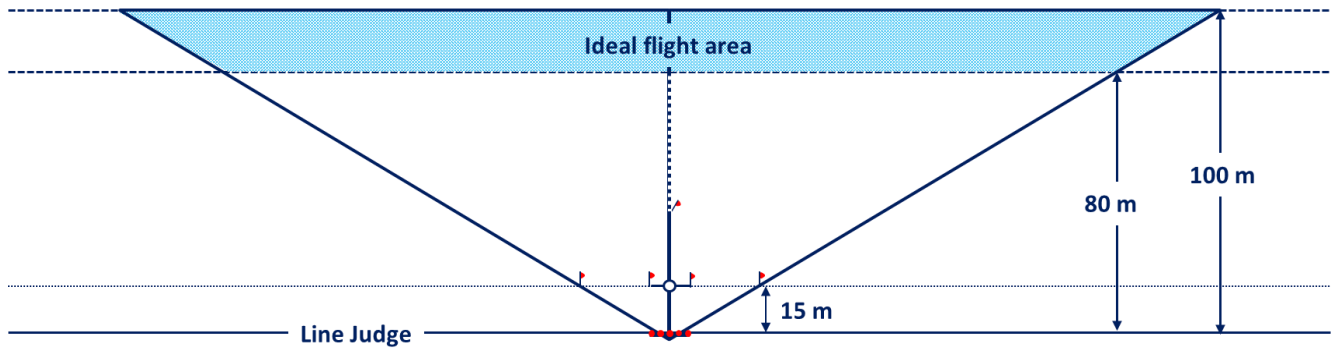
The lines do not need to be tracked for training, crosses or flags are enough!

Positioning oneself at the location of the C1 marker has two uses.

To check if the flags for the judges' window (120°) are correctly positioned extending far beyond the location of judges 1 and 5.

If the coach positions himself in this location during the aerobatic manoeuvres, it allows him to check if the helicopter is going out of the window.

Ideal Flight area



2nd Rule :

This rule applies to both the pilot and the coach.

- It is imperative to read section : 5D.1 Generalities as it specifies how each manoeuvre must be carried out.
 - I put this section 5D.1 after the third rule.
 - It is necessary to read each figure description carefully and not just skim it, because to perform a figure as perfectly as possible you need to know all its subtleties.
- In the comments that follow I will detail all the manoeuvres that constitute a figure.

3rd Rule :

The presence of a coach is necessary to progress, but of course, he does not need to be there for each training.

If the pilot has no choice and is alone, he will have to place a camera on the judges' line at position 4 then 2.

Unofficial texts (draft for 2028)

5D.1 General Rules for Manoeuvres.

- (1) The manoeuvres are displayed in pictorial form in Figures 5D-P, 5D-SF and 5D-F for the case where the wind direction is left to right.
- (2) The following descriptions apply to all manoeuvres, if a manoeuvre is not performed as described, this will result in a downgrade point.
- (3) If a manoeuvre is unrecognisable it must be severely downgraded provided that the trajectory remains recognisable otherwise the score shall be zero (0) points.
- (4) If the direction of the manoeuvre (Flip, Pirouette or Roll) are performed in the wrong direction, the score shall be zero (0) points the same shall apply if a manoeuvre is omitted.
- (5) Takeoffs and landings must be smooth and centred on the helipad.
- (6) Ascents from, and descents to, the helipad must be vertical.
- (7) During the hovering manoeuvres all stops must be of 2 seconds minimum duration (unless specified otherwise).
- (8) Circular and linear hovering segments must be performed at a constant speed.
- (9) Every pirouette must be performed around the axis of the main rotor and at a constant turning rate.
- (10) A loop must start at a point "X", have a constant radius and end at the same point "X". The input and output loop segments of a manoeuvre must have the same radius.
- (11) Single or consecutive rolls, must be have a constant rotation rate, the beginning and the end must be clear.
- (12) The rotation of a tail turn must be performed around the main rotor shaft and it must be symmetrical by performing half of the rotation during the ascent and the other half during the descent. The ascent and descent trajectories must be vertical and superimposed; the direction of rotation is not imposed.
- (13) The stall turn rotation must be around the main rotor shaft and can only begin after the vertical ascent has completely stopped. The ascent and descent trajectories must be vertical and superimposed; the direction of rotation is not imposed.

(14) The rotation of a flip must be around the lateral (elevator) axis of the MA.
The direction of the flip is described according to the movement of the elevator/longitudinal cyclic) control stick (Push = Negative - Nose down, Pull = Positive - Nose up).

(15) An autorotation flight begins as soon as the engine is cut off (or at idle) and ends after landing.

(16) During all aerobatics manoeuvres the competitor must maintain his MA above a minimum altitude of 10 m.

(17) Aerobatic manoeuvres flown at a distance greater than 100m from the judges' line will be downgraded.

(18) In case of a dispute the manoeuvre text takes precedence over Figures 5D-P, 5D-SF and 5D-F.

Note : When the word "centred" is used, it means that the MA crosses an imaginary plane that extends from a line drawn vertically upward, from the centre judge out through the helipad, this imaginary plane is called the centre line.

This refers to all Schedules P, SF and F.

Scoring criteria for landings ; See ANNEX 5E paragraph 5E.6.1. (*in annex5E : 2028*)

We've just covered everything related to the flight area, but before detailing each manoeuvre that makes up a figure, but before detailing each manoeuvre, we need to prepare several poles made of reed or bamboo (or other material) to check the different heights.

One pole is 2 m long, one 3.46 m long, one 4.5 m long and one 7 m long.

To have a good foundation, several people will be needed so that the pilot and the trainer can realize what height the helicopter should be positioned at during the different heights and realise that 7m is relatively high.

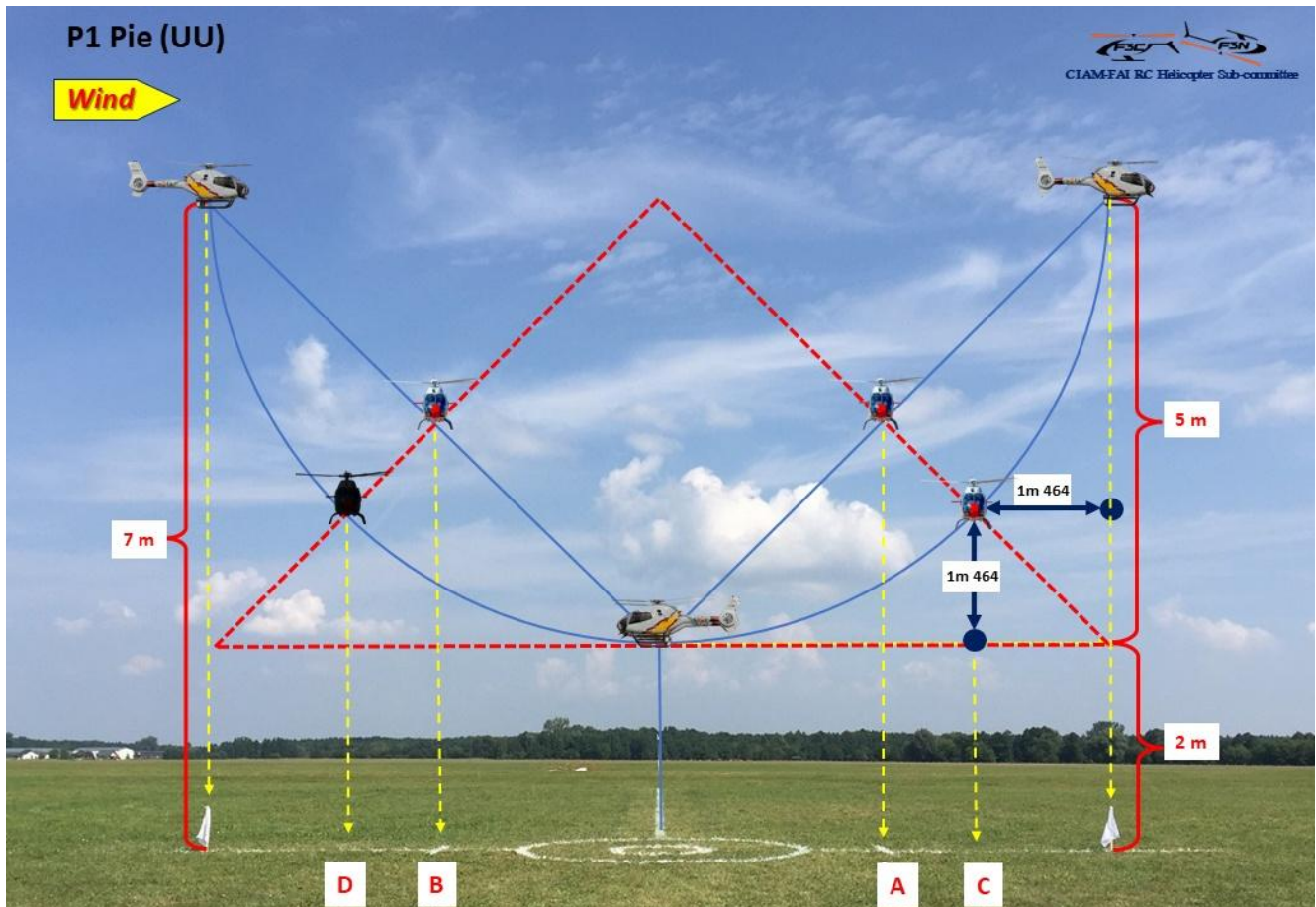
Once these basics are acquired, there is no need to do it every time, but sometimes during the season why not.

Each time, a person has to position the pole right next to flag 2, then the helicopter takes off vertically to check the different heights.

The important thing about this test is to start with a solid foundation for executing the different manoeuvres of a figure.

In detailing the manoeuvres, I will assume that the ascent to 2m or more (+) is correct.

Thanks for your interest



Presentation created by Eladi LOZANO and LACÔME Roger

Reminder in 5D.1: During the hovering manoeuvres all stops must be of 2 seconds minimum duration (unless specified otherwise) so it is not necessary to mention it every time in the descriptions.

P1 : PIE (UU)

Unofficial but precise and clear description.

K Factor = 1.5

Specificity:

- All pirouettes are in any direction.

Description:

- MA takes off **vertically** from the helipad, ascends to 2 m, **stops** and hovers.
- MA ascends backwards on a 45° **straight** line while simultaneously performing a 180° pirouette, **stops** over flag 1 (2) and hovers.
- MA descends backwards and performs a semi-circle with a 5 m radius while simultaneously performing a full 360° pirouette, stop over the flag 2 (1) and hovers
- MA descends forwards on a 45° **straight** line while **simultaneously** performing a 180° pirouette, **stops on the centre line and hovers.**
- MA descends **vertically** and lands **on** the helipad.

Comments on the following pages :

A brief aside before the comments :

During a competition, **the helper must absolutely have a stopwatch** to check how much time has elapsed between the moment the helicopter left the preparation circle and the end of the hovering manoeuvres.

During training sessions, the coach must occasionally proceed in the same way in order to have a database that will be used during competitions.

Comments : This figure is one of the most difficult for all pilots for 2 reasons:

The translation speed must be perfectly synchronised with the rotation rate for the 3 main manoeuvres.

But we must not forget an extremely important point ; the helicopter must remain constantly within the flight plan between flags 1 and 2, not only are many points lost for this mistake but it induces others because the pilot ends up with bad reference points, it is catastrophic.

The priority is to work on stopping vertically at flag 1 at the end of the 45° ascent.

If this point is not adhered to, there will of course be a penalty, but more seriously, it will automatically trigger further penalties during the descent phase of the half-circle.

There is no point in doing three, four, or five training flights while repeating the same mistake each time; it is essential to film this phase of the flight in order to correct any errors.

You must also respect the 7-meter altitude; anything between 6.50m and 7.20m is acceptable, but at 6m or below, a penalty will be incurred—and this will also lead to further penalties during the descending phase of the semicircle.

Second manoeuvre; the ascent to 45° with a 180° rotation.

This is the first figure of the program and to psychologically impress the judges everything will have to be perfect in order to still have 10 points at the end of the ascent, it's extremely important.

Before the helicopter takes off, the coach (or a camera) must position itself at judge 4's location on the judges' line to verify that when the helicopter has completed a 90° rotation, it is vertically above the intermediate marker "A".

Next, he must move to the location of judge 5 to verify that the helicopter stops correctly vertically above flag 1 and at 7m.

The synchronisation between the speed of travel and the rate of rotation of the pirouette must be perfect. The 180° rotation must not be completed before the helicopter has finished climbing (or vice versa) ; it's a small detail, but an important one.

If everything is respected, not only will the pilot still have 10 points, but the judge will also think, "Here I am dealing with a good pilot," which is psychologically very positive.

From time to time, the coach (or the camera) must position itself in line with the flight path on the left side to check if the helicopter is not moving away (or getting closer) to the judges' line during the 45° ascent

Third manoeuvre ; the half-circle with 360° pirouettes.

This flight phase is undoubtedly the most difficult of this manoeuvre and is very selective.

For this flight phase, the coach will need to move along the judges' line from the location of judge 5 to judge 1 as the helicopter progresses in order to check all the important points.

- That the curve is regular during the descent, with no vertical downward section at the start.

- After completing a 90° rotation, the helicopter must be directly above marker "C" and at the correct height (approximately 3.54m), or slightly more than one meter (1.036m) to the right of marker "A". It is important that it is not directly above the intermediate marker "A", otherwise a penalty of 1 point will be incurred.

- That the synchronisation, translation speed and rotation speed are regular.

- When the helicopter crosses the centre line, it must be directly above the centre of the helipad and not have moved closer to the judges' line. This is why it is important that the coach (or another person) positions themselves to the left of flag 2 from time to time to check the flight plan.

To be repeated for the left side, the coach moves to the front of the

- Regular curve during ascent and regular rotation rate.

- Passing point "D" a good meter (1.036m) to the left of marker "B" and also at the same height (approximately 3.54m).

- Here again, when the rotation stops the helicopter must be at 7m, there must be no ascent without rotation (or vice versa).

- No vertical ascent at the end of the semicircle.

- Same comments for the 45° descent.

Summary of the main key points :

- Synchronisation of translation speed with respect to rotation rate both during the execution of the 45° descent/ascent and the semicircle. The height of 7m.

- The height of 7m.

- Adherence to the flight plan throughout the entire figure.

Thanks for your interest