ANNEX 6A
CLASS F4 JUDGES' GUIDE FOR STATIC JUDGING

6A.1 General

a) Before static judging commences the judges should review the whole entry in order that a standard be established for grading the points to be awarded. The entries should be studied in relationship to each other from a superficial aspect before detailed examination commences. The Chief Static Judge should take this opportunity to ensure that all judges are of a similar mind as to what is involved, particularly with respect to complexity aspects where these are applicable.

b) A trial assessment using one or more non-competition model aircraft should be done prior to the start of the competition to establish a uniform standard.

c) A Chief Judge shall be appointed as a spokesman for the static judges, and if two panels of static judges are to be used, the second panel will have a Deputy Chief Judge appointed to assist the Chief Judge in his work. The Chief/Deputy Chief Judge should discuss the merits and criticisms of each item in his responsible area with the other judges in his team, asking for suggestions for the scores.

d) The static evaluation is broken down into six items as listed in 6.1.10. Judges must discuss each item as a team and attempt to arrive at a unanimously agreed score for each item, although each will retain the right to differ. Any degree of difference should however be minimal.

e) The chief judge should discuss the merits and criticisms of each item with the other judges, asking for suggestions for the scores to be awarded as a basis for further discussion. The use of half points (see 6.1.5.) is important when judging top-class model aircraft. There may be instances where, for example, a 9 would be too low and a 10 too high, and a suitable score might be, say, 9,5.

f) Regardless of the actual marks awarded, it is imperative that an accurate and fair comparison is attained across the whole range of model aircraft entered. The relative mark of one model aircraft compared to another is the most important standard to be achieved. Judges are encouraged to make use of analysis sheets and electronic or other archive devices to achieve this comparison.

g) Upon the completion of the static judging of each model aircraft, the chief judge must check all score cards for completeness before submitting them for processing. The panel of judges has the right to alter scores retrospectively that they subsequently feel to be wrong (eg first model aircraft deviations, details not proven by documentation, over-looked commercial items).

Sufficient time must be allocated by the organisers for this review to be done. Only when the Chief Judge agrees that this has been achieved should the scores be released for publication.

h) If model aircraft are flown before being static judged (see 6.1.3.), any damage sustained during flight shall be ignored by the static judges provided the model aircraft is intact and it is practical to do so.

6A.1.9. Documentation for Proof of Scale

The minimum documentation as stated in 6.1.9.4. must be provided. Failure to comply shall result in penalty marks as follows:

a) Less than 3 full photos of prototype:	ZERO points for Scale Accuracy	(6.1.10.1)
Possible downmarking of Realism		(6.1.10.4)
Possible downmarking of Craftsmanship		(6.1.10.5)
Possible downmarking of Scale Detail (6.1.10.6)		
b) Missing or unauthorised drawings:	ZERO points for Scale Accuracy	(6.1.10.1)
c) No photo of subject aircraft:	ZERO points for markings	(6.1.10.2)
Possible downmarking for Realism		(6.1.10.4)
d) Incomplete colour documentation:	ZERO points for Colour	(6.1.10.3)

The documentation stated above is the absolute minimum required for participation. In reality more comprehensive evidence is needed to assess the model aircraft relative to the prototype. As the full size aircraft cannot be presented it follows that the photographic documentation provided should be as comprehensive as possible if a high score is to be achieved.

All documentation should relate to the subject aircraft whenever possible; variations from this must be clearly marked if not otherwise obvious. All relevant notes and corrections to the documentation should be in English.

The static judges have a difficult task to do in a short period of time. Documentation should therefore be presented in a format that can be quickly and accurately assessed. Superfluous or contradictory evidence should be avoided. The documentation should be presented on separate sheets to avoid the requirement for judges to continually turn pages for cross-references. A stiff A2 size sheet is considered to be the largest that may be comfortably handled by the judges. It will assist the judges if the documentation is presented in a format that reflects the sequence of the judging aspects, eg: Side view, End view, Plan view, Markings, Colour, etc.

6A.1.10. Static Judging

Items 6.1.10.1. must be judged at a minimum distance of 3 metres in F4B and 5 metres in F4C from the centre of the model aircraft. A handler should be prepared to position the model aircraft as directed by the judges. No measurements are to be taken and the model aircraft must not be handled by the judges.

The model aircraft must be judged against the documents presented and judges should award marks solely on this evidence. The quality of the documentation/evidence provided by the competitor will normally be reflected in the score that the judges award. Accurate and clear evidence deserves good marks if the model aircraft matches this. Judges must ensure that a competitor does not benefit by default by submitting poor or incomplete documentation.

Judges must assess both accuracy and complexity in those aspects where indicated.

6A.1.10.1. Scale Accuracy

The photographs are the prime means of determining the accuracy and realism relative to the full size aircraft and must always take precedence over drawings if there is any doubt concerning an item of scale accuracy. Caution should however be exercised when determining rigging angles using photographs that are taken at an oblique angle, as these might give the wrong impression. In this particular case the drawing may be a more appropriate reference for checking dihedral and incidence angles.

Then using photographs and drawings, check:

Side view, this may be either left or right depending upon the most suitable photograph. A check should be made of the fuselage outline, cabin or canopy shape, cockpit aperture shape, engine cowling and spinner shape, outline of fin and rudder, wing and tailplane sections. Also the shape, angle and position of landing gear legs and tail wheel or skid, the size of wheels and tyres. On multi-wing aircraft a check should be made of wing stagger, wing gap and the shape and arrangement of struts and incidence wires.

Front-end view, for dihedral, wing thickness and taper, wing struts, bracing and gap on multi-wing aircraft. Also the thickness of fin, rudder and tailplane, cross-sections of fuselage and engine cowling, cowling shape and cutouts, propeller size and shape, shape of cockpit canopy or windshields; size, shape, position and angle of landing gear, wheel track, tyre thickness.

Upper-Plan view for wing outline and fairings, aileron size, flaps; tailplane size and outline; elevator size, shape and cut outs, trim tabs, fuselage shape and taper, cockpit or canopy shape, engine cowling shape.

6A.1.10.2. Colour

<u>Colour Accuracy:</u>

Correct colour may be established from colour photographs, from accepted published descriptions if accompanied by colour chips certified by competent authority, from samples of original paint, or from accepted published colour drawings. Also check colours of national markings, lettering and insignia. Camouflage colour schemes should show the correct degree of merging of the shades.

<u>Colour Complexity:</u>

Consideration should be given to the greater effort involved in reproducing multi-coloured finishes compared to model aircraft which feature only one or two basic colours. The system for awarding colour complexity points should be agreed before starting competitive judging. Up to two complexity points may be given for each main colour that covers a significant part of the airframe. A maximum of a single point may be given for each minor colour, such as those for the insignia struts, guns, bombs etc. Basic colours of black and white should attract a fraction of a complexity point. It is again essential that if high marks are to be awarded, a comprehensive standard of colour documentation must be presented.

6A.1.10.3. Markings

If just a single panel of 3 judges is involved, much of the Markings aspect can be assessed whilst checking scale accuracy. The relative positioning and shape of the markings on the model are often a good indication of scale accuracy as they highlight errors in shape and outline. The opportunity to check markings on the underside of the model can also be taken whilst checking the plan view.

<u>Markings Accuracy:</u>

Check the position and size of all markings and lettering. Particular emphasis should be made to the relative positioning of markings to other markings and key features on the airframe. Check

that the style and thickness of all letters and figures are correct. Check that any trim strips are of the correct dimensions and are correctly positioned. Check camouflage patterns.

Markings Complexity:

Prior to commencing the competition the judges should agree the principle for awarding complexity points in relation to markings. A high mark for complexity is not solely dependent upon the number of markings, but the difficulty in achieving the required effect. Complex lettering, particularly when spread over a large area or relating to key positions on the airframe, should attract a higher complexity mark than sparsely positioned markings of more simple design. Curved lines are usually more complex than straight lines. Camouflage patterns should be considered carefully, with the more complex styles involving irregular patterns and indistinct edges being rewarded accordingly. For high marks to be given in this section it is important that documentation is presented covering all the markings to be assessed.

6A.1.10.4 Surface Texture and Scale Realism

Realism is a question of how well the model aircraft captures the character of the full size aircraft. The judges should ask themselves if they are looking at the subject aircraft in miniature, or just a model aeroplane?

The texture and appearance of the surface of the model aircraft should be a good reproduction of that of the prototype. Fabric covered types should be covered in the correct material, and the outline of stringers and wing ribs should be visible. Ply covered or wooden monocoque types should be correctly simulated and any sag between the ribs and formers should be apparent if this is present on the prototype. Metal stressed skin types should show simulation of panels and rivets. In all instances, the appropriate gloss, or matt finish should be correctly reproduced.

If the subject aircraft is an unblemished museum example then the model aircraft should be in similar pristine condition. If the subject aircraft is an operational aircraft then a degree of weathering and signs of regular use should be evident if appropriate to the full size machine.

The documentation should show these aspects and the judges should mark accordingly.

6A.1.10.5. Craftsmanship

This section deals with the skill, ingenuity, general finesse and complexity involved in the construction of the model aircraft.

Craftsmanship Quality:

The model aircraft should be checked for quality of workmanship, with particular reference to clean, sharp edges, especially trailing edges of wings and tail surfaces; correct gaps at hinge line of control surfaces; close fit where non-scale joints are used for dismantling the model aircraft or access hatches used for model aircraft operation.

Non-scale Items such as switches, needle valves, silencers, control horns, etc should not be visible.

Craftsmanship Complexity:

Judges should consider the overall complexity of the design awarding higher marks for more intricate shapes and structure.Special items of ingenuity may also be rewarded under this section.

In assessing both the above aspects judges should consult the competitor's declaration and check for any components that have not been made by the competitor (see 6.1.9.4e) and adjust the marks awarded accordingly.

The points that are awarded must again reflect the standard of documentation presented.

6A.1.10.6. Scale Detail

Check that items such as those listed are present on the model aircraft where applicable, and that they are accurately reproduced and correctly positioned.

Hatches	Brake pipes
Handles	Landing gear springing
Footsteps	Tyre treads
Doors	Wing slots
Armament	Navigation and landing lights
Bomb racks	Pilot head
Control cables	Walkways
Control horns	Tanks
Fairings	Radiators
Bracing	Filler caps
Turnbuckles	Louvres
Struts	Cooling gills
Lacing or stitching	Mass balances
Aerials	Instrument panel
Venturis	Cockpit or cabin interior detail

The points awarded should reflect both the accuracy and the quantity of scale detail present.

Scale Detail Accuracy:
The documentation presented should clearly show the features that are being assessed. Higher marks should be awarded to those competitors who accurately reproduce these items.
Scale Detail Complexity:
A well-documented highly detailed model aircraft should score proportionately more than a model aircraft with little detail, even if the full-size prototype is itself sparsely detailed. Judges should ensure when marking this aspect that they are relating to the complexity of detail actually on the model aircraft, not awarding marks for just what the prototype should have.

F4K FLIGHT JUDGES GUIDE

General:

All flying manoeuvres must be judged bearing in mind the performance of the full size prototype. The aim of the scale flight schedule is to recreate the flight characteristics and realism of the full-size aircraft. Judges must not therefore confuse scale contests with aerobatics contests

The errors mentioned under each manoeuvre cannot be an exhaustive list of all possible faults. They are intended to show the sort of mistakes that are likely during that manoeuvre. These errors examine each manoeuvre from three aspects:

1. The shape, size and technical requirements of the intended manoeuvre.
2. The positioning of the manoeuvre relative to the judges position or other datum.
3. The scale realism achieved relative to the subject aircraft.

It remains the responsibility of the judges to decide upon the importance of each error and deduct marks accordingly, always taking into account the characteristics of the full size aircraft.

Each manoeuvre must be announced prior to commencement and called on commencement by the word “NOW". All flying manoeuvres must be announced upon completion by the word "FINISHED".

The flying judges will be seated alongside the landing area in a line parallel with the wind direction. This axis will be referred to as the “judges’ line”. The Contest/Flight Line Director will be responsible for the measuring of wind direction. If, in the opinion of the Contest/Flight Line line will be adjusted accordingly.

Unless there is a conflict with safety, the pilot should at all times be permitted to choose the direction of take-off and landing to allow for unexpected changes in wind direction. This provision will also apply to manoeuvre 6.3.7.M (Touch-and-Go) since this consists of both a landing and take-off.

Apart from the manoeuvres mentioned above, all manoeuvres must be performed parallel with the judges’ line such that if any part of the manoeuvre is performed behind the judges’ line it will score ZERO

In the interests of safety, any manoeuvres overflying a designated area behind the judges’ line laid out for the protection of spectators, officials and other competitors or helpers, will score ZERO.

The height and positioning of individual manoeuvres should be proportional to that expected in a full size display typical to each prototype.

Unless specified otherwise, manoeuvres that are carried out in a horizontal plane (eg Straight Flight, Figure Eight, Triangular Circuit) should commence on a flight path that is about 60º elevation to the judges. Manoeuvres such as the Descending Circle and Spin should start at a higher elevation. Judges should down mark manoeuvres as too high, too low, too far away, or too close if they consider the positioning to be so.

After each flight, the Flight Judges will record any non-standard event that causes downgrading or loss of flight points. If for any reason the mark awarded is corrected or changed, the change must be initialled by the judge. The Chief Flight Judge will review all flight score sheets for completeness and fairness and justification of any zero scores. As examples: missed manoeuvres, manoeuvres flown out of order, out of flight time, flying behind the ”Judges’ Line”, or crash landing. The Chief Flight Judge must then sign the score sheets before they are sent for processing.

Realism in flight

As 6C.3.6.11

TAKE OFF WITH 90º TURN AND 180º TURN (MANDATORY)

To start the manoeuvre, take off smoothly from the centre of the helipad. The model must ascend vertically over the centre of the helipad until the skids or landing guides are at eye level, with tail rotor facing the centre judge. Hold this position for a minimum of 10 seconds, followed by a 90º clearing turn to the left or right side. Hover in this position for 5 seconds followed by a 180º clearing turn that is also held for 5 seconds. (View figures 2A and 2B)

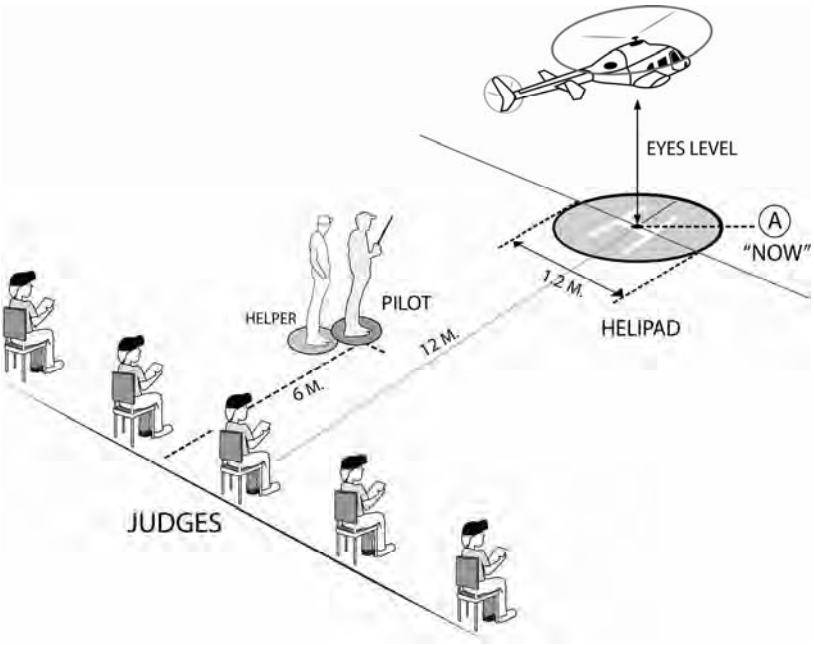
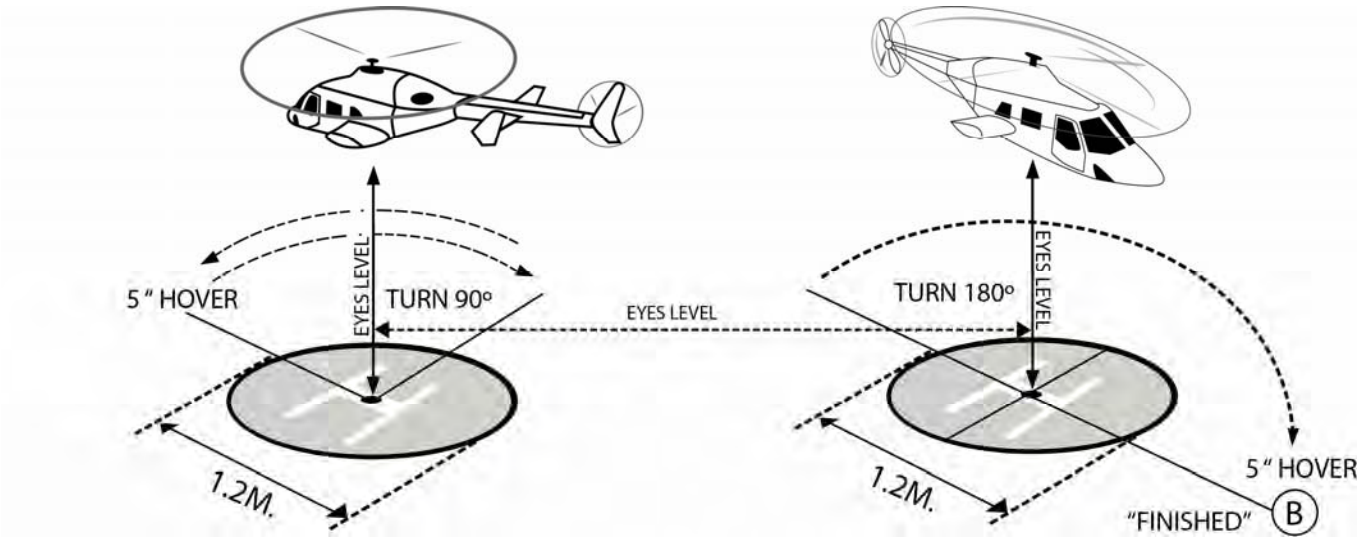


Figure 2(A):

Figure 2(B):

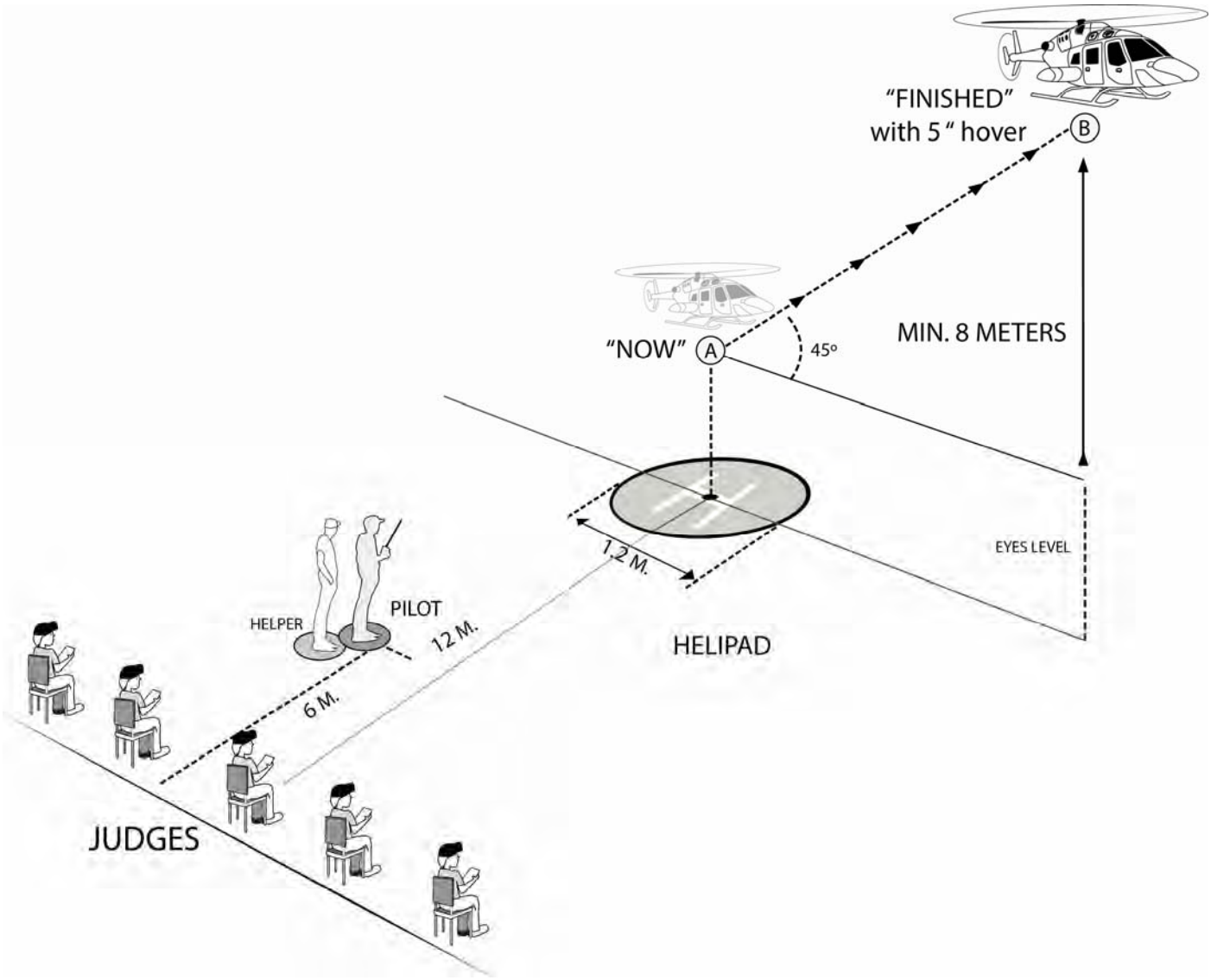


ERRORS:

1. Constant height of two meters not maintained.
2. Not centered figure 1 on judge's position or helipad center figure 3.
3. Two far away/too closed/too high/too low over helipad center.
4. Start and finished not centered on judge's position.
5. Climb up not smooth, continuous and steady.

45º CLIMB OUT (MANDATORY)

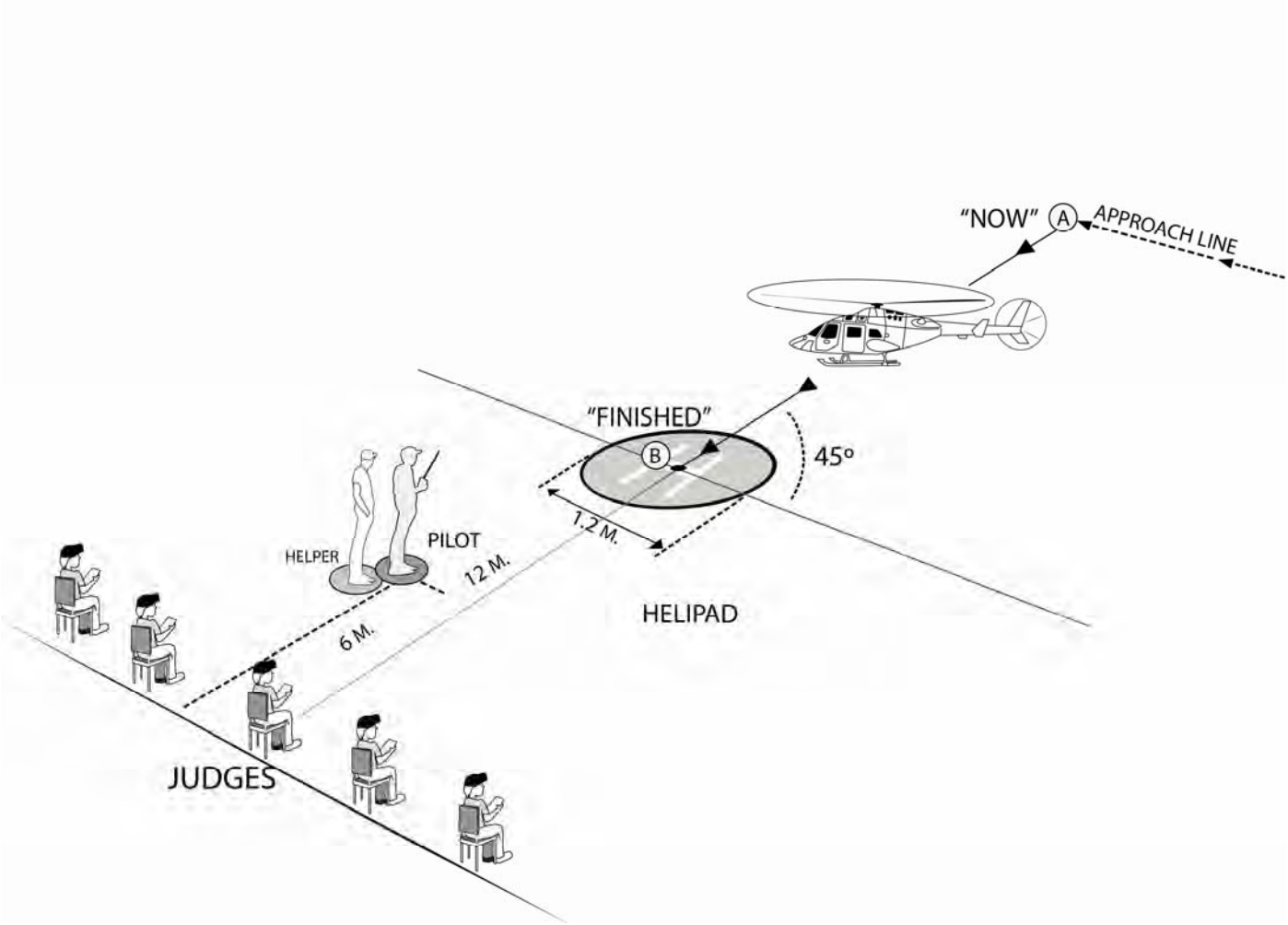
The manoeuvre starts at eye level (Point A) with a 45º climb out parallel to the flight line, finishing at point B. This figure can be made to left or right side.



ERRORS:

1. Not starting at eye level
2. Not finishing the manoeuvre at Point B (8 Metres height).
3. Not keeping the climb out parallel to the flight line.
4. Climb out not smooth and at a continuous 45º angle.

TRANSLATIONAL LANDING (OPCION 1)
At the point A, the helicopter will begin a translational straight-line descent with 45º to a soft final landing on the helipad.

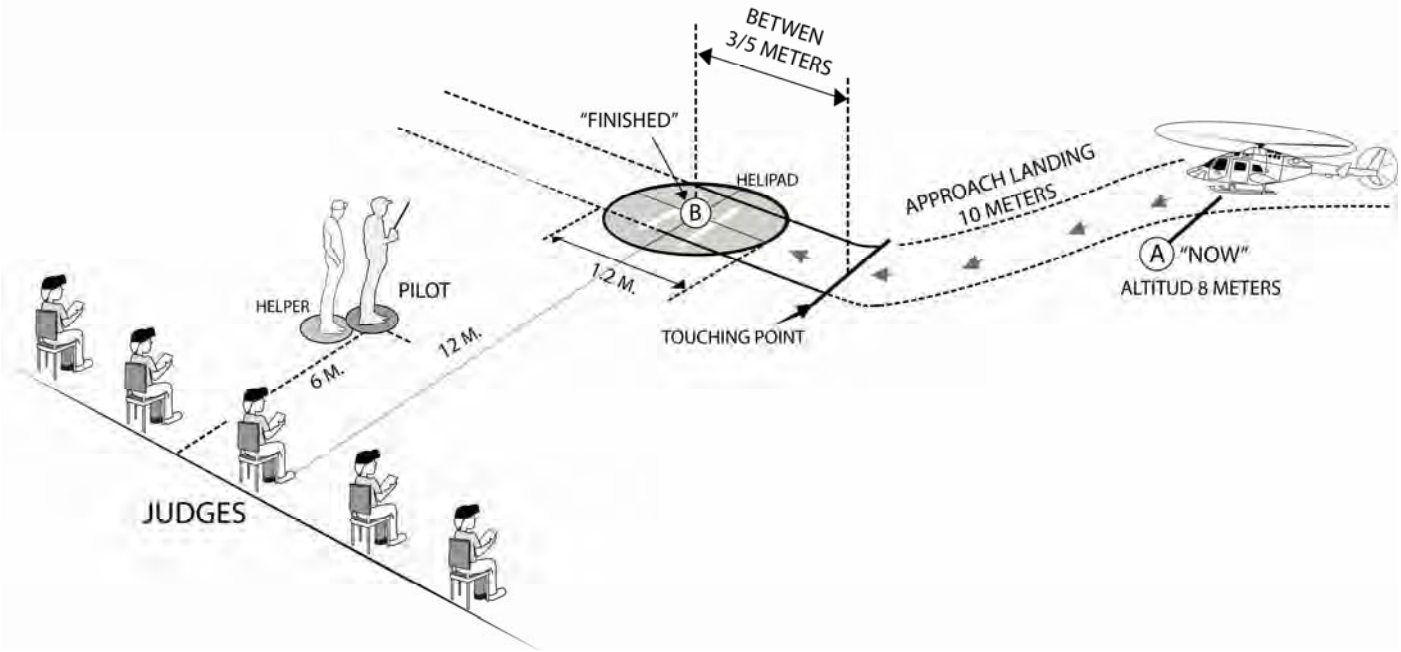


ERRORS:

1. Insufficient climb achieved.
2. The angle of descent is not constant throughout maneuver.
3. Model aircraft not smooth and steady.
4. Too far away/too close/too high/too low
5. Model no landing on helipad center.
6. The descending angel is different to45º

RUN ON LANDING (OPTION 2)

The model approaches parallel to the flight line, descending smoothly. The manoeuvre starts at point A, which has a minimum height of 8 metres. The model must touch down at a distance of between 3 to 5 metres from the helipad, sliding to a stop within the helipad. This manoeuvre can be made to the left or right side.

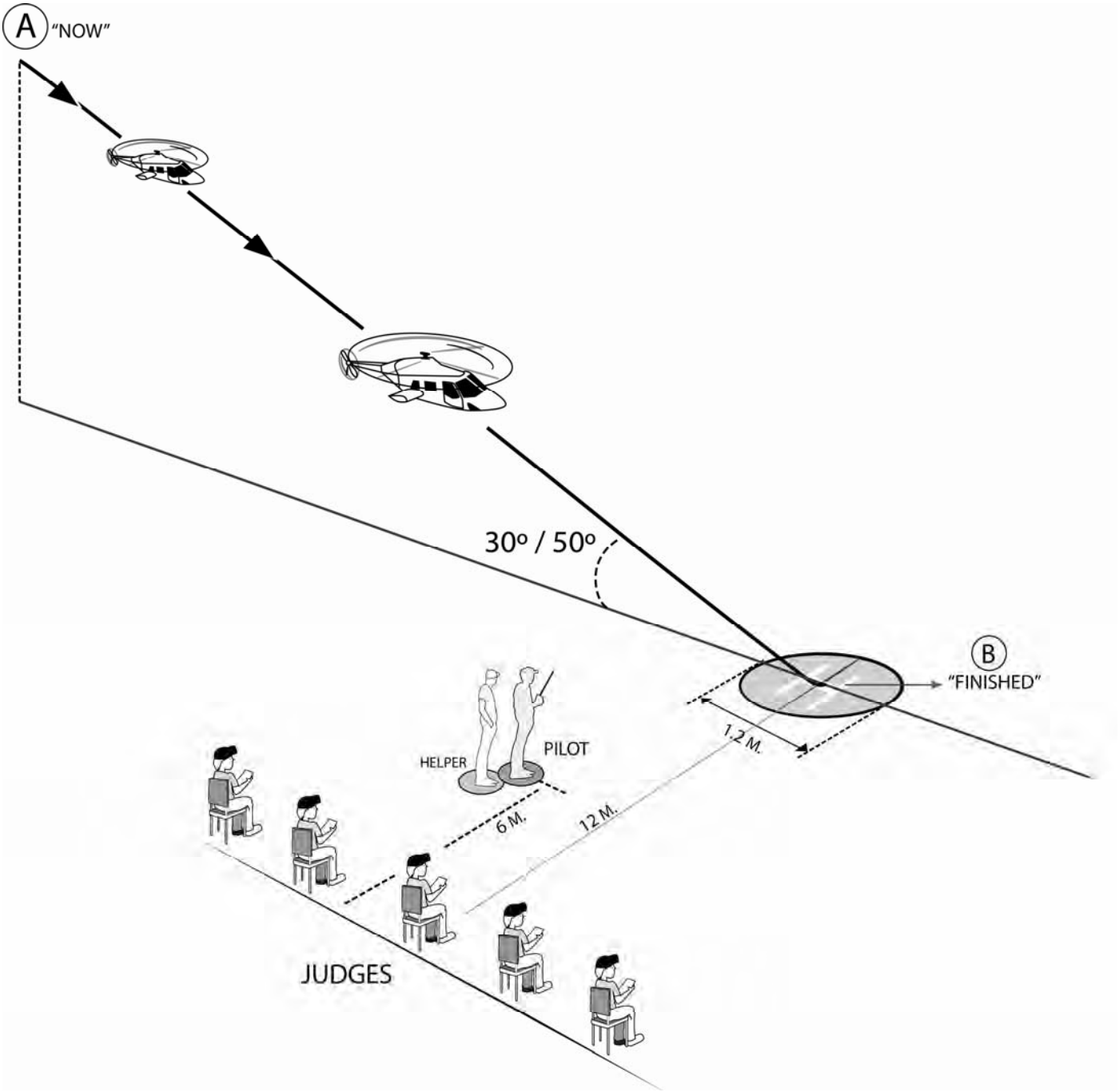


ERRORS:

1. Model descent not smooth and continuous.
2. Start and finish of manoeuvre not parallel with the flight line
3. Run on slide is too short or too long
4. Run on slide is not smooth
5. Model does not stop within the helipad.
6. Model no landing on helipad center.

AUTORROTATION LANDING (OPCION 3)

The model enters the manoeuvre at minimum height of 20 meters, descending at an angle that is between 30º and 50º, parallel to the flight line. The model must be in an autorotation state and the engine must be disengaged before the manoeuvre starts. The manoeuvre ends with the model landing safely within the helipad. This manoeuvre can be made from the left or right side.



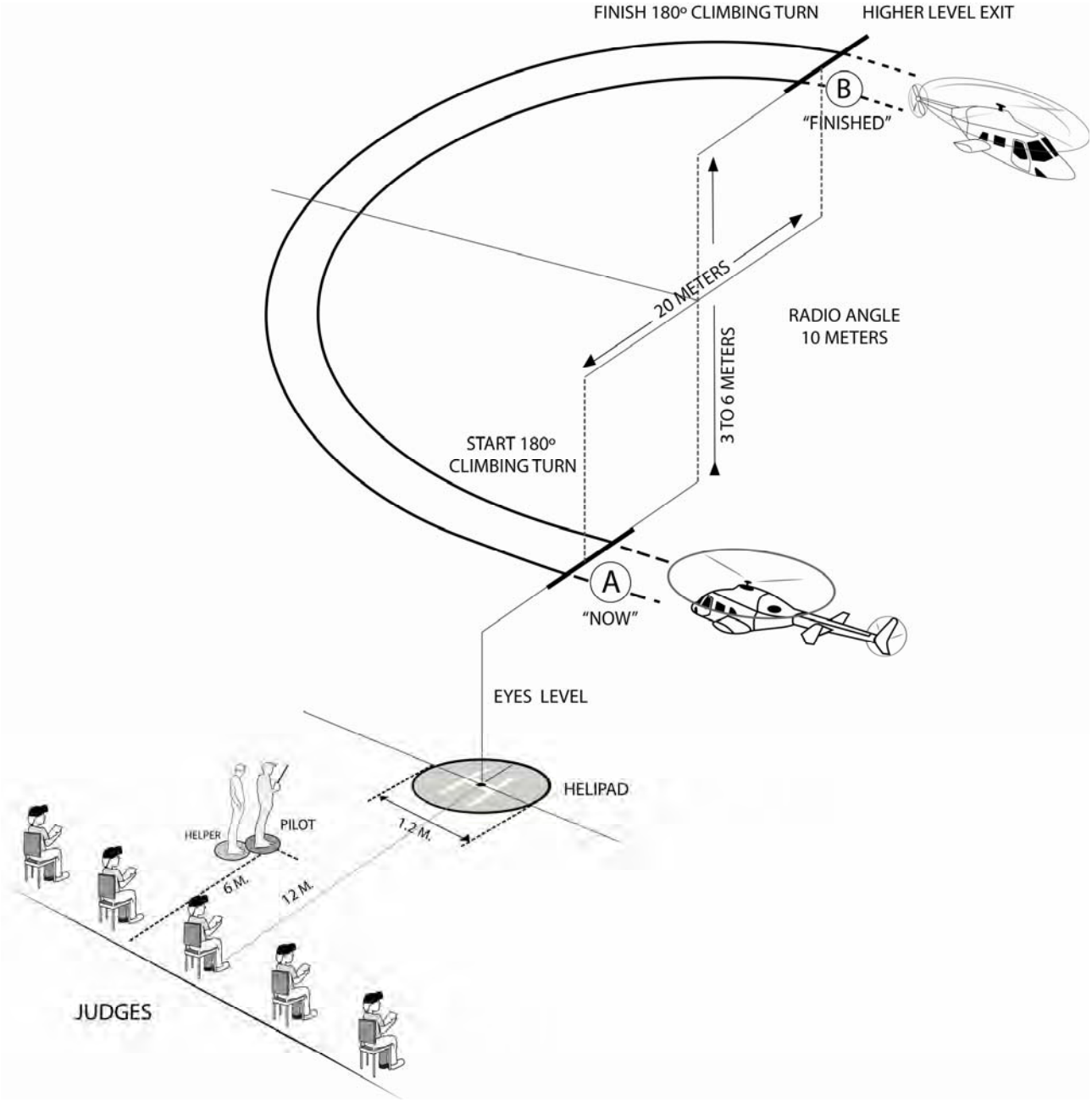
ERRORS:

1. The model bounces on touch down
2. Model does not perform a smooth landing
3. Not a constant descent.
4. Model does not land within the helipad.
5. The engine was not stopped.
6. Model does not land parallel to the flight line.
7. Model no landing on centre of helipad.
8. Too far away/ too closed / too low / too high
9. The main rotor edge out of the helipad circle

NOTE: The competitor may only choose one option in each round landing.

A CHANDELLE

From a straight and level flight al eyes level, the model aircraft passes the judges and then performs a 180º climbing turn in a direction away from the judges, resuming straight and level flight on the opposite heading. The rate of climb should be commensurate with that of the prototype

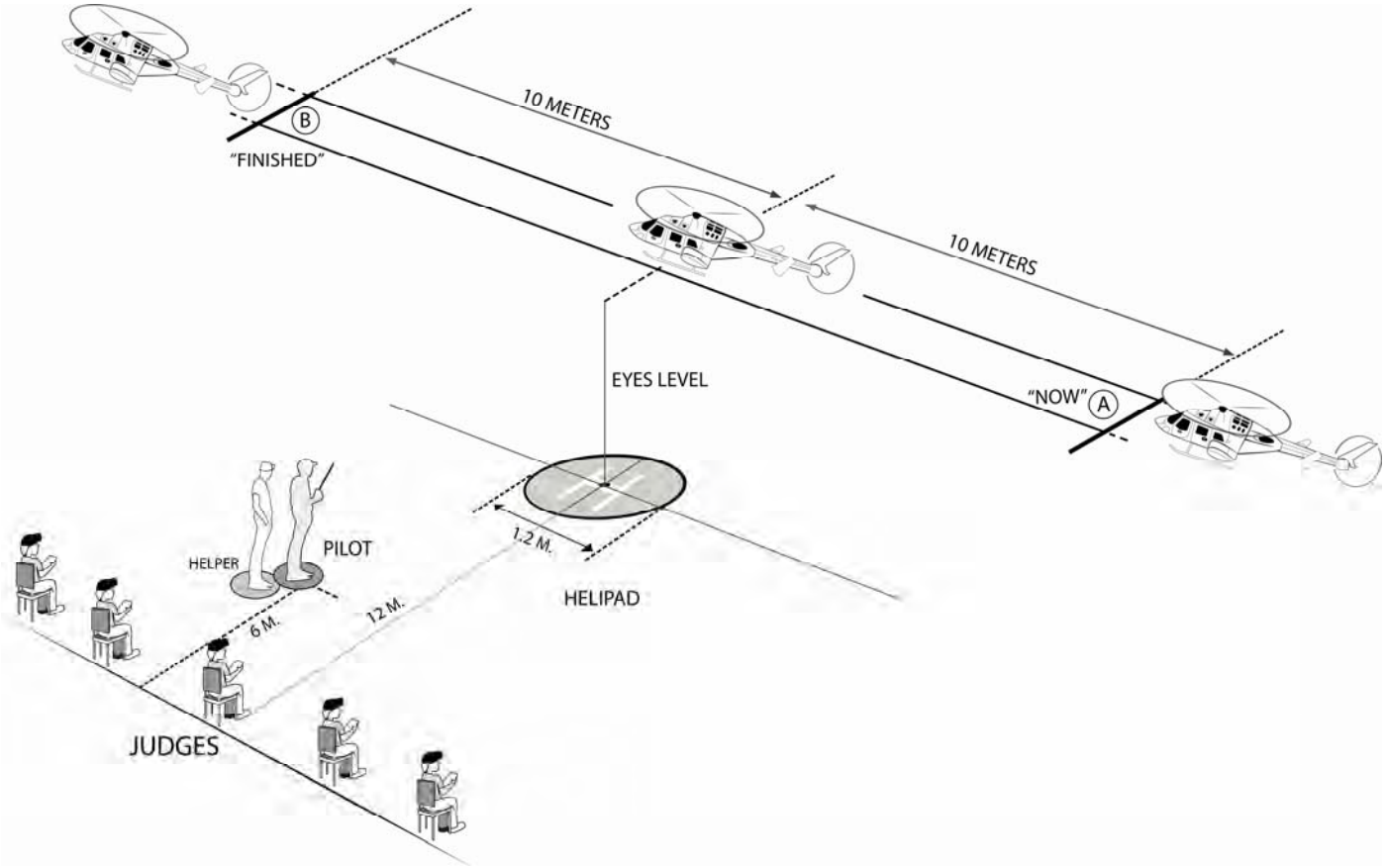


ERRORS:

1. Turn not smooth and continuous.
2. Climb not smooth and continuous.
3. Half height gain not at 90° position.
4. Excessive/unrealistic engine power used to achieve the climb.
5. Insignificant high gain.
6. Start and finish not centered on judges' position.
7. Entry and exit paths not parallel with the judges' line.
8. Final track not 180º opposite to entry.
9. Entry and exit not in straight and level flight.
10. Too far away or too high.

B FLY PAST AT CONSTANT HEIGHT.

Model aircraft approaches in straight flight at a constant height not exceeding 2 meters for a minimum distance of 20 meters, This is in effect a low fly-past. The maneuver will be done to the left side or to the right side.

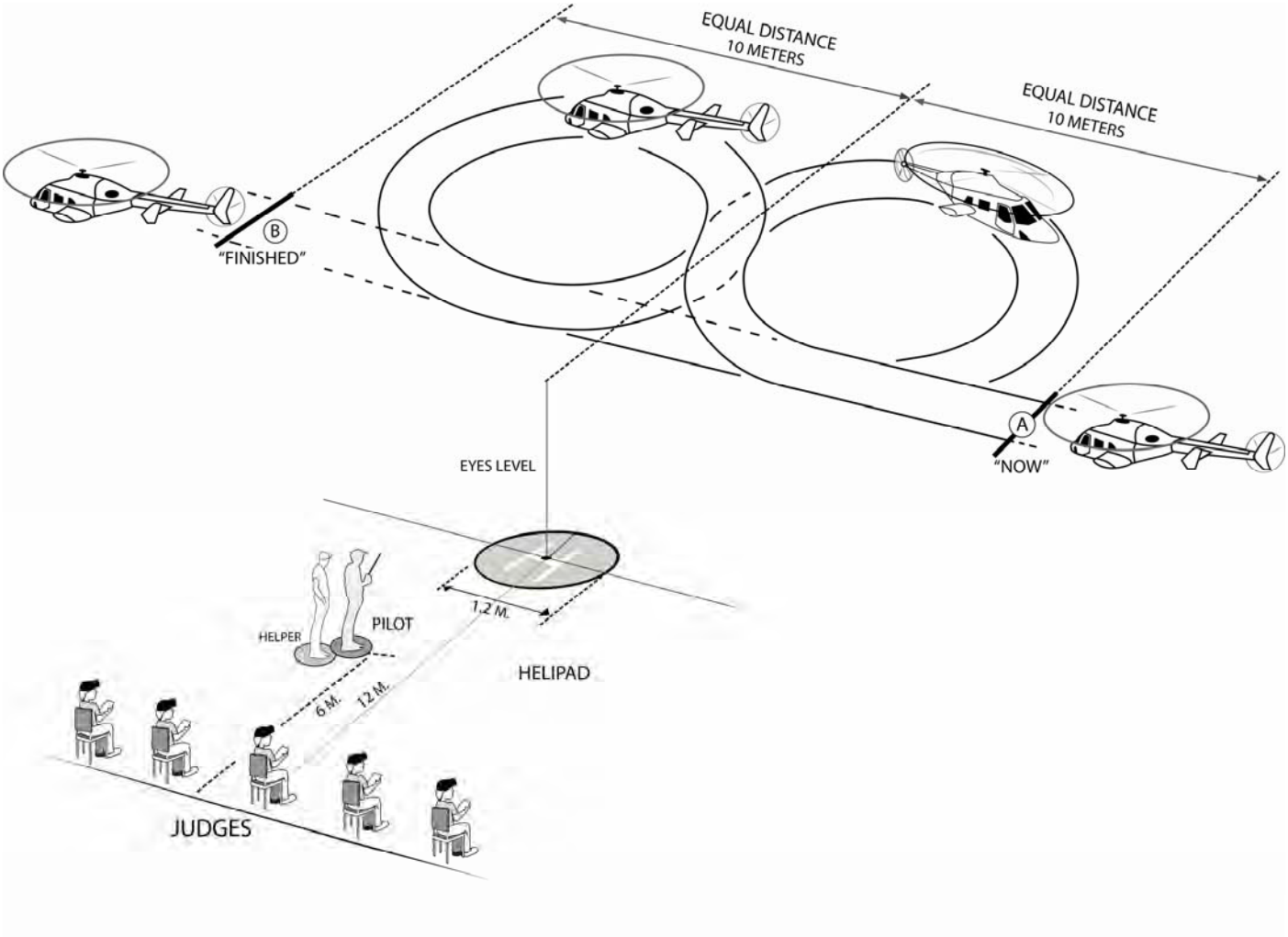


ERRORS:

1. Not a straight course (slight corrections acceptable with light aircraft).
2. Not constant height
3. Not 2 meters or below
4. Not pass over the landing area
5. No centered on judges' position
6. Not parallel with the judges 'line
7. Too short distance (too long is not an error)
8. Model aircraft flight no steady.
9. Too far away/too closed / too low

C FIGURE EIGHT

The model aircraft approaches in straight and level flight on a line parallel with the judges' line, and then a one-quarter circle turn is made in a direction away from the judges' line. This is followed by a 360º turn in the opposite direction, followed by a 270º turn in the first direction, completing the maneuver on the original approach line. The intersection of the maneuver shall be on a line that is at right angles to the direction of entry and passes through the centre of the judges'
line.

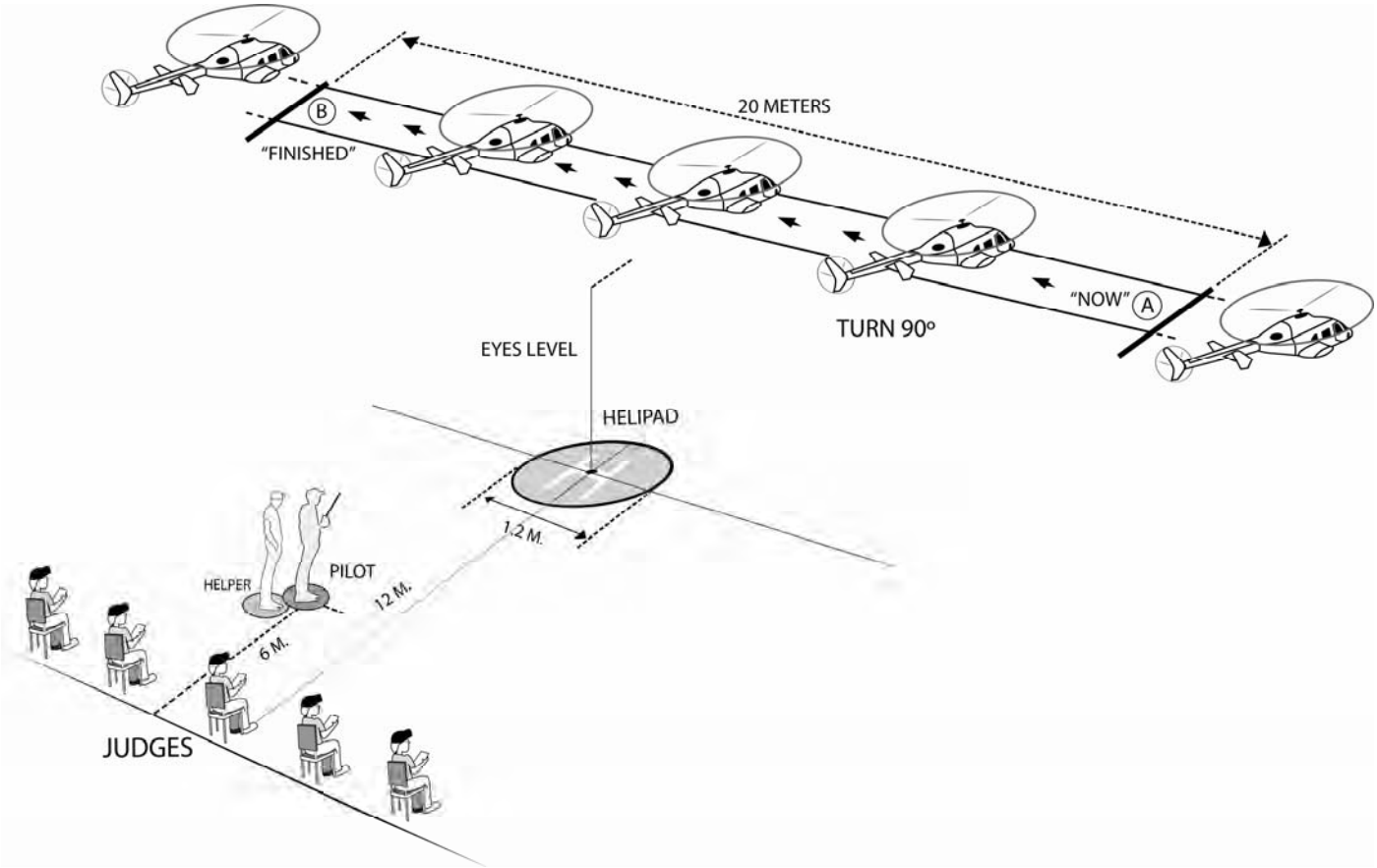


ERRORS:

1. Entry into first circle not at right angles to original flight path.
2. Circles unequal size.
3. Circles misshapen
4. Constant height not maintained.
5. Intersection not centered on judges' position.
6. Entry and exit paths not on same line.
7. Entry and exit paths not parallel with judges' line.
8. Overall size of maneuver not realistic for prototype.
9. Model aircraft flight path not smooth and steady.
10. Too close/too high/too low/ too far

D SIDEWAYS FLIGHT

Model aircraft approaches in straight flight at a constant height not exceeding eyes level parallel to the judge's line. In the point A start with nose of model aircraft facing opposite to the judge's position during the rest of the maneuver to the end, keeping the height to the end of the maneuver. This is a low side fly past. This maneuver will be done from the right side or to the left side.

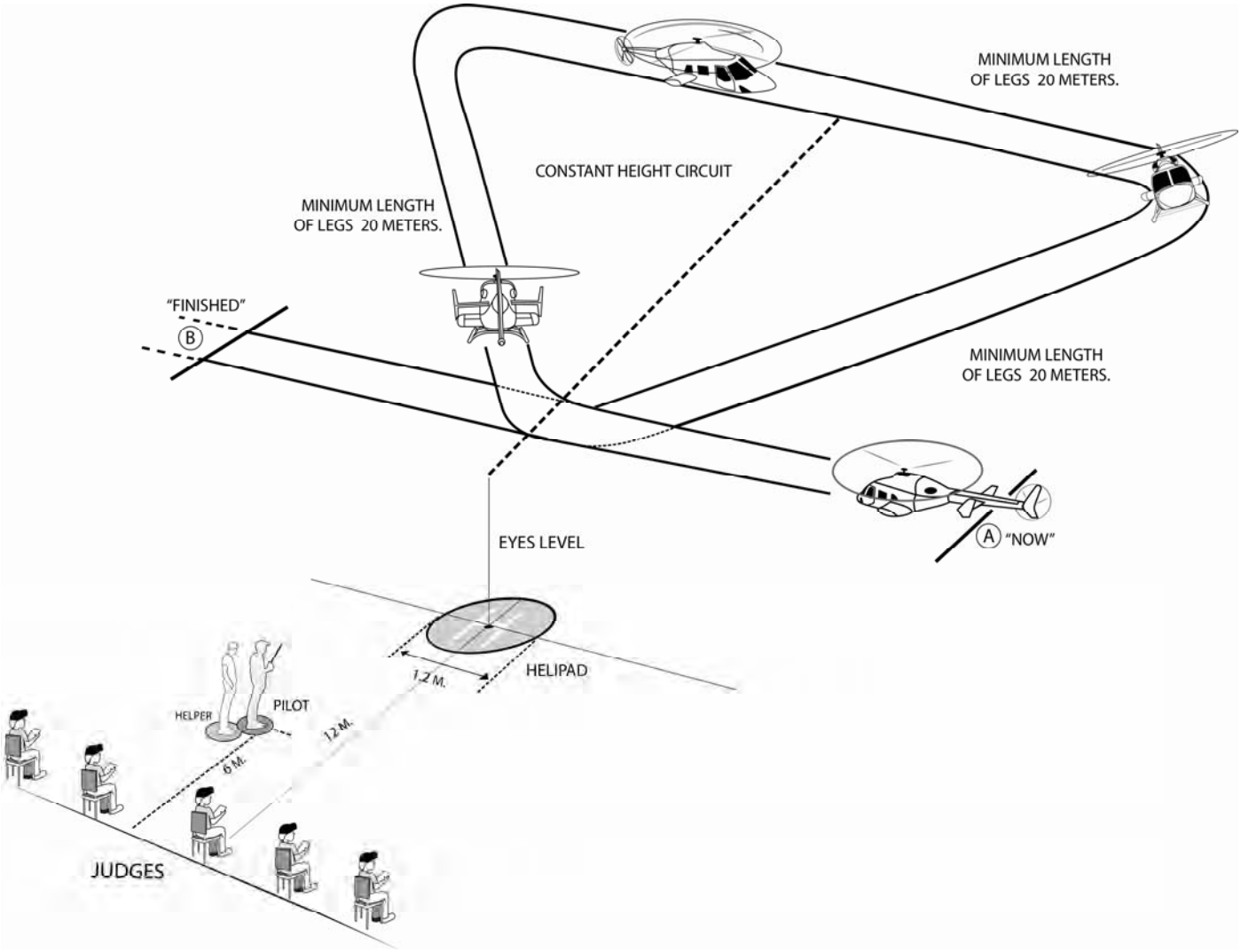


ERRORS:

1. Too far away/too close/too high/too low.
2. Not constant height.
3. Height exceeds 2 meters.
4. Nose model aircraft are not facing opposite to the judges' position. (Of 90º)
5. Model aircraft maneuver no steady

E FLIGHT IN TRIANGULAR CIRCUIT

The model aircraft approaches in a straight and level flight in a maximum height of 2 meters to a point directly in front of the judges then turns away to track away from the judges' line, flies straight and level for a minimum of 30meters, turns to track parallel with the judges' line, flies a further minimum of 30 meters, then turns to track towards the judges and flies a further minimum of 30 meters to a position above the centre of the landing area, which completes an equilateral triangle (a triangle with sides of equal length), before making a final turn to intercept the original entry track.

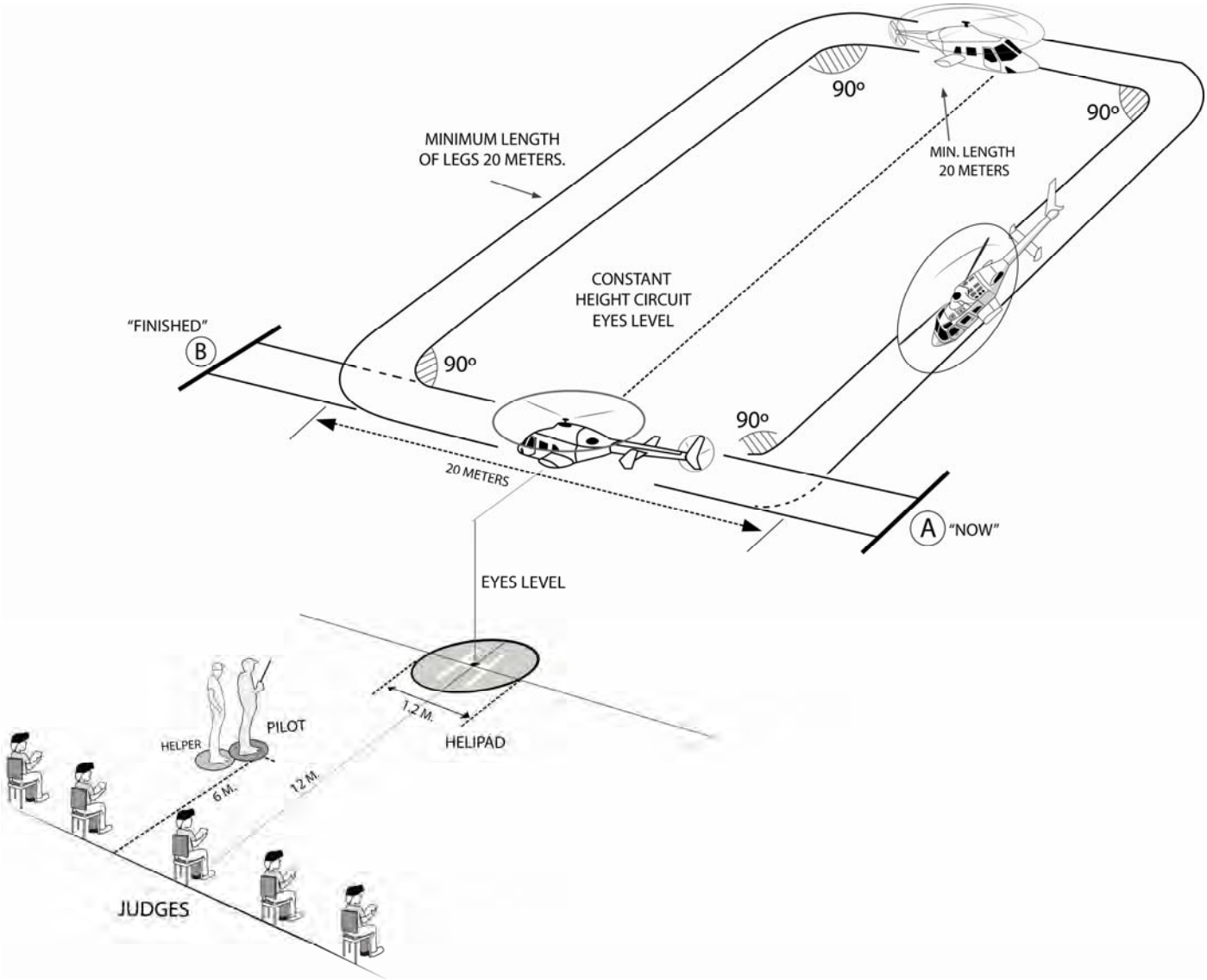


ERRORS:

1. Not commenced and finished at points equidistant from the judges.
2. Model aircraft changes height.
3. Rate of turn at corners not constant or inside corners of triangle not 60°.
4. Sides of the triangle are not straight.
5. Sides of triangle are not equal lengths.
6. Sides of the triangle are too long or too short.
7. Apex of triangle not centered on judges' position.
8. Correction for drift not properly made.
9. Start and finish tracks not the same.
10. Start and finish tracks not parallel with judges' line.
11. Too far away/too close/too high/too low.
12. Not constant and smooth

F FLIGHT IN RECTANGULAR CIRCUIT

The model aircraft approaches in straight level flight at eyes level to a point directly in front of the judges, then continues for a minimum of 5 meters before it turns away to track 90º from the judges' line and flies straight and level for a minimum of 10 meters before turning to track parallel with the judges' line for a further minimum of 5 meters, turns to track directly towards the judges for a minimum of 10 meters, to a point in front of the judges, before completing a final turn to intercept the original entry track. This maneuver describes a rectangle over the ground.



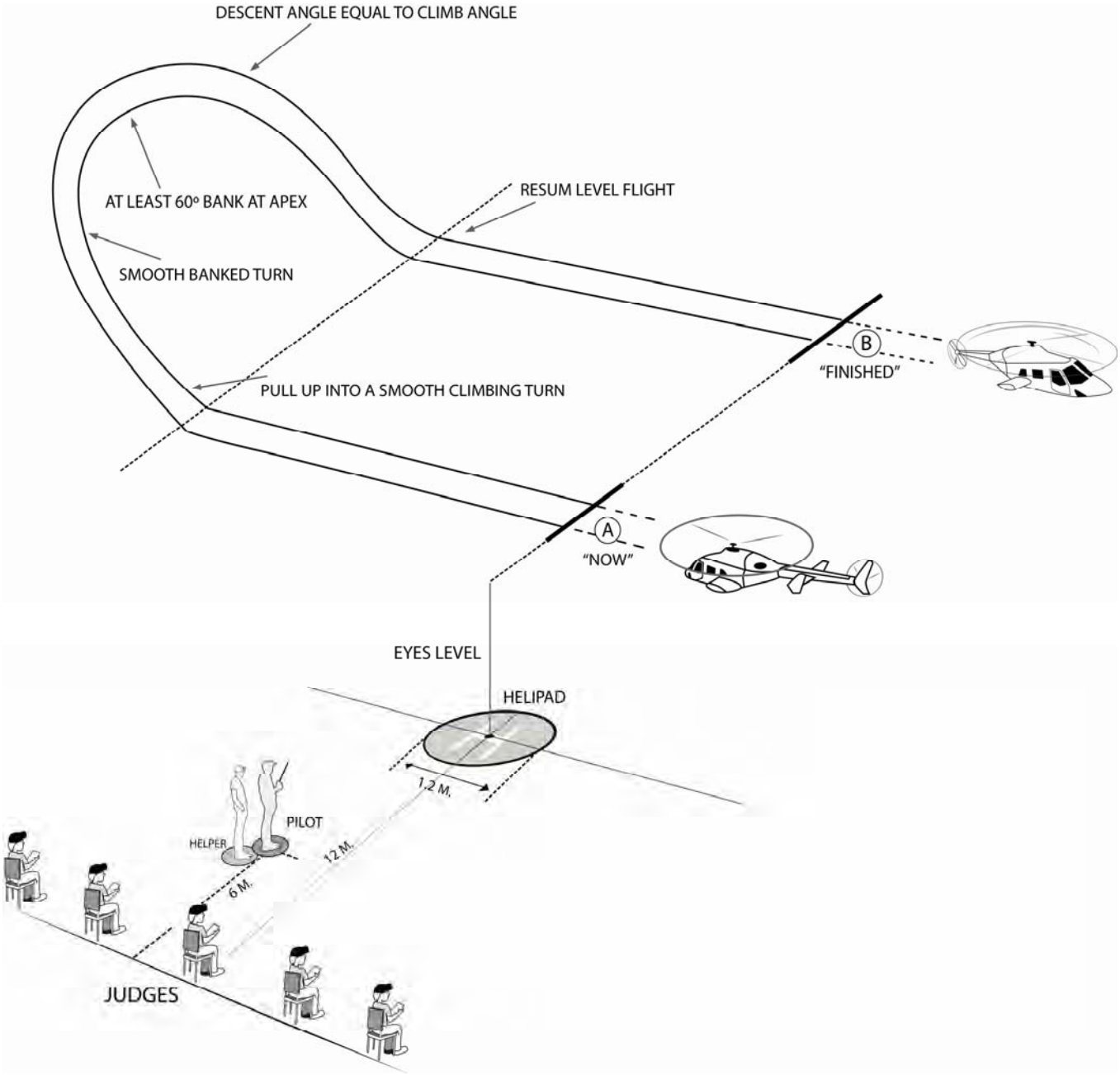
ERRORS:

1. Not commenced and finished at points equidistant from the judges.
2. Model aircraft changes height.
3. Rate of turn at corners not constant or corners not 90°.
4. Legs are not straight.
5. Legs too long or too short.
6. Opposite sides of rectangle are not of equal length
7. Correction for drift not properly made.
8. Final leg of rectangle not centered on judges' position.
9. Start and finish tracks not the same.
10. Start and finish tracks not parallel with judges' line.
11. Too far away/too close/too high/too low.
12. Not constant and smooth

NOTE: The maneuver must be done according with a relationship between the straight legs 2:1

G 180º ASCENDING TURN

The model aircraft approaches in straight and level flight on a line parallel with the Judges' line. After passing the judges' position a smooth climbing turn is commenced away from the judges. At the apex of the turn, the model should track 90° to the entry track and the bank angle should be at least 60º for a non-aerobatic model and at least 90° for an aerobatic model. The height gain should be appropriate to the capability of the prototype. The model then continues on a mirror image of the entry flight path and recovers to straight and level flight at the same height but on the opposite heading to the entry and on a line displaced away from the judges. This manoeuvre can be done from the left or right side.

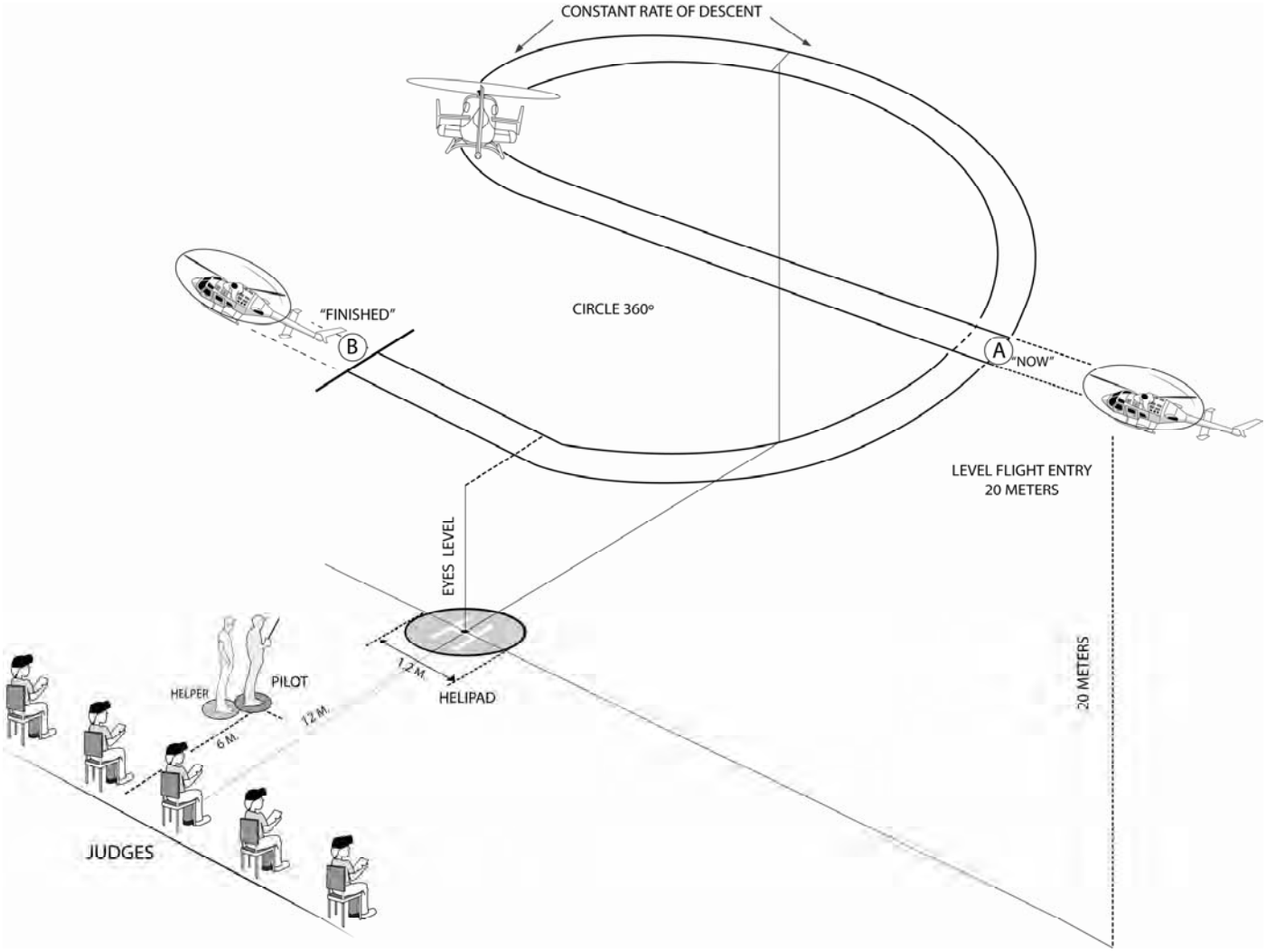


ERRORS:

1. Start and finish positions not as indicated.
2. Insufficient climb achieved.
3. Insufficient bank achieved
4. Climb and descent angles not equal throughout maneuver.
5. Model aircraft does not fly a smooth and symmetrical arc.
6. Entry and exit paths not parallel with judges' line.
7. Overall size of maneuver not realistic for prototype.
8 Model aircraft flight path not smooth and steady.
9. Too far away/too close

H 360º DESCENDING CIRCLE

Commencing from straight and level flight, the model aircraft performs a gentle 360º descending circle over the landing area, in a direction away from the judges, at a constant throttle setting. The maneuver terminates at a minimum eyes level, resuming straight and level flight on the same path. This manouver can be done from left side or right.



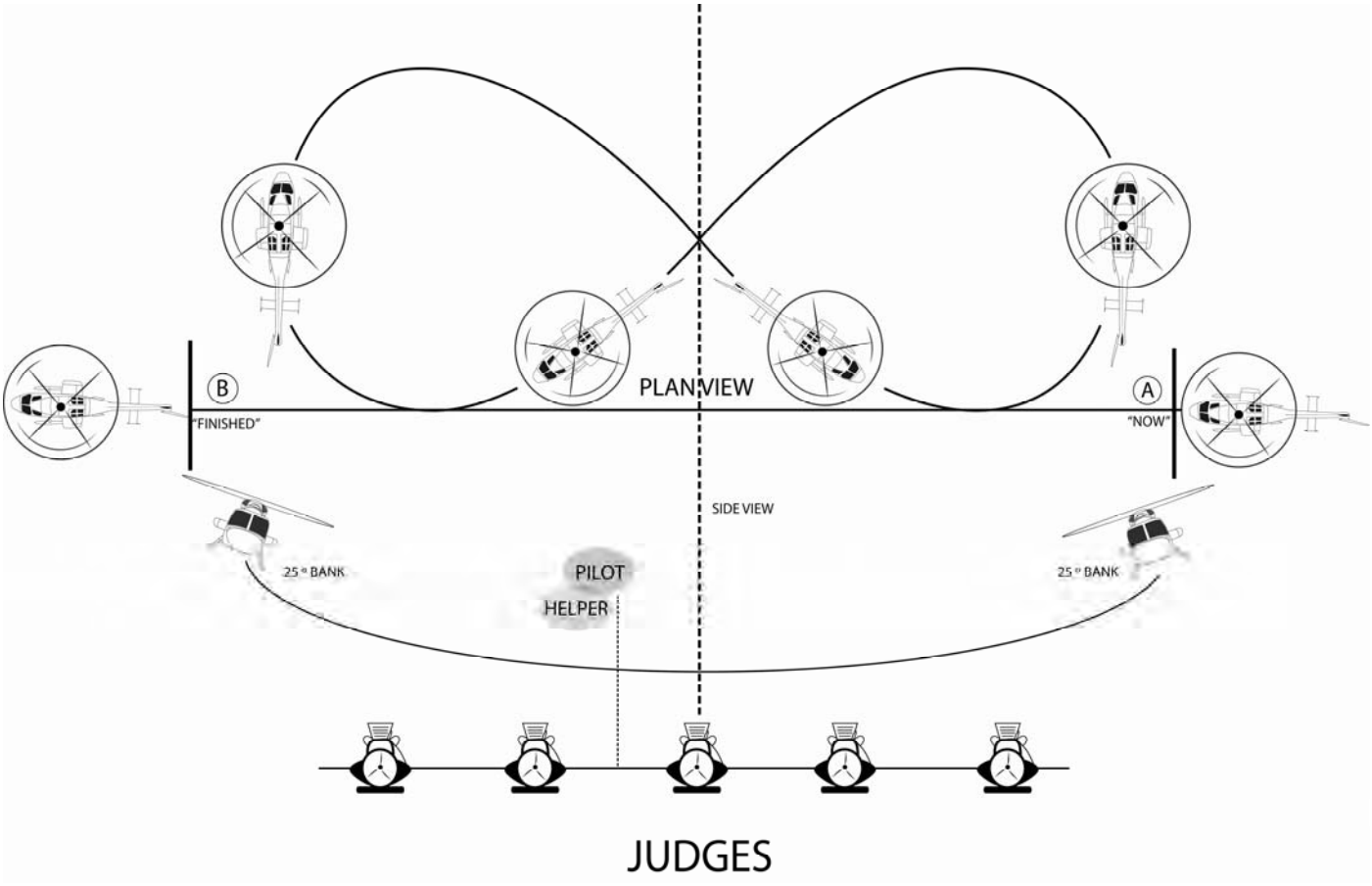
ERRORS:

1. Rate of descent not constant.
2. Descent too steep.
3. Throttle setting not constant or low enough.
4. Circle misshapen.
5. No significant loss of height.
6. Model aircraft does not descend to 6 meters or below.
7. Circle not centered on judges' position.
8. Entry and exit paths not parallel with the judges' line.
9. Start and finish not called in straight and level flight.
10. Too far away, too close.

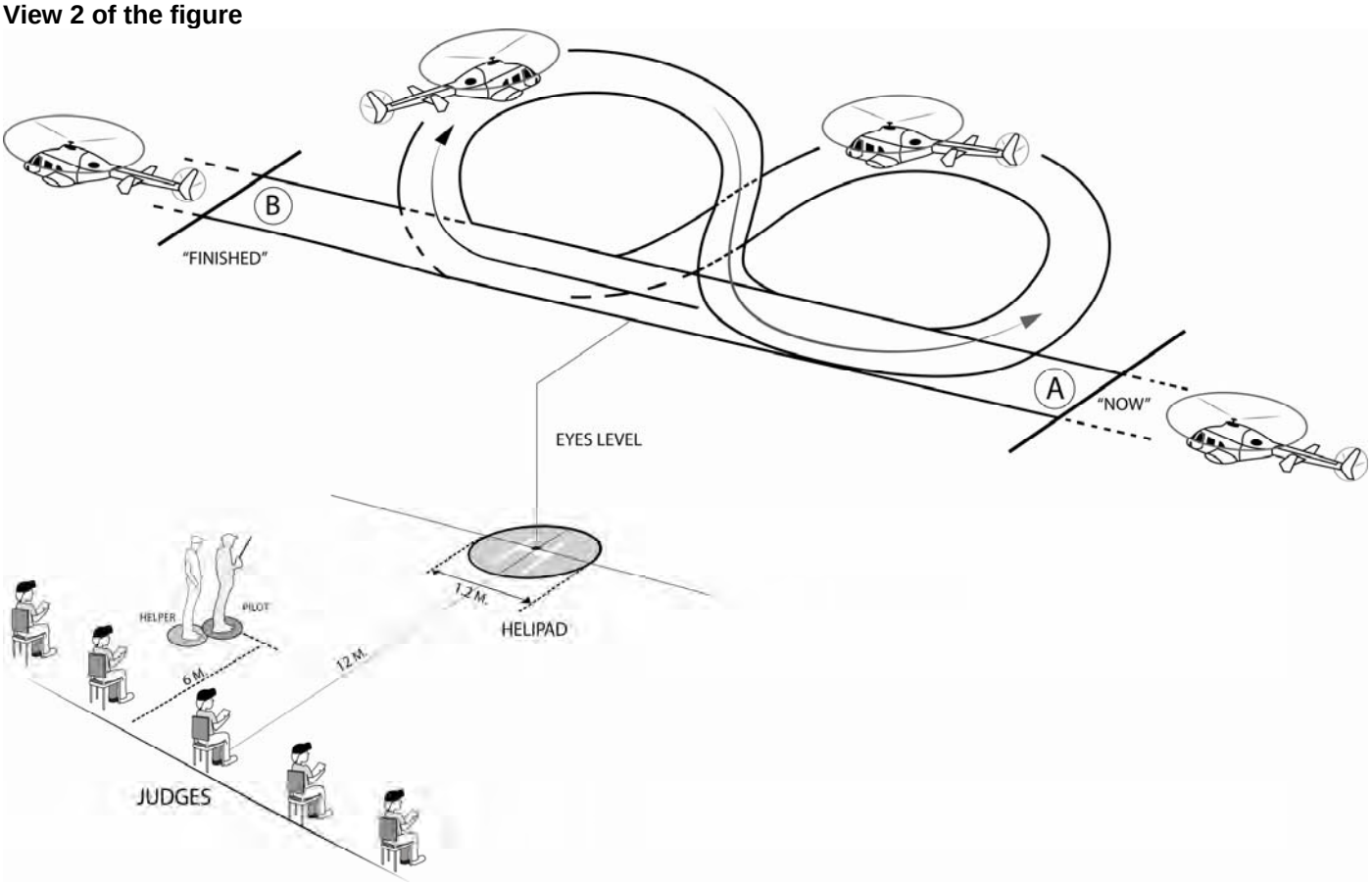
I LAZY EIGHT

The model aircraft approaches in straight and level flight on a line parallel with the Judges' line. When the model aircraft is in line with the judges (the centre) a smooth curving climb is commenced which progresses to a smooth climbing turn of constant radius away from the judges. At the apex of the turn the bank should be at least 25º and the model aircraft shall be on a heading of 90° to the judges' line. The nose of the model aircraft then lowers and the bank comes off at the same rate as it went on. The turn is continued beyond 180º to intercept the centre with the wings level and at the same height as the entry height into the maneuver. At the centre another smooth climbing turn, the shape of which should be the same as the first turn, is immediately commenced away from the judges, The second turn is then continued beyond 180° to cross the centre with the wings level and at the same height as the entry into the maneuver. The Lazy Eight is completed by maintaining this height and heading with wings level before turning to intercept the original approach track to exit the maneuver parallel to the judges' line in straight and level flight. The figure should be symmetrical each side of the judges' position.

View 1 of the figure



View 2 of the figure

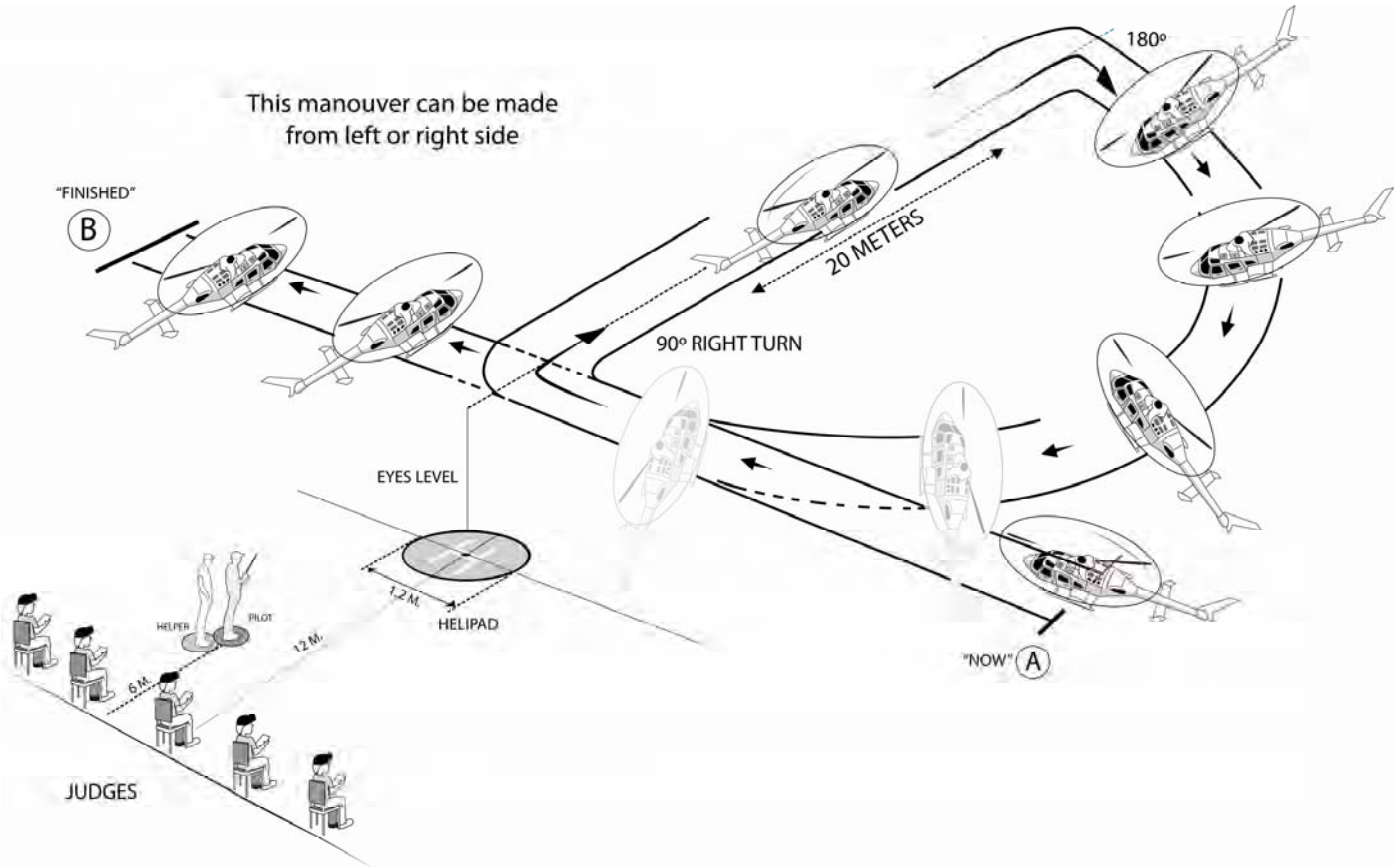


ERRORS:

1 Entry and exit paths not parallel with judges' line.
2 .Insufficient climb achieved.
3 Insufficient bank achieved.
4 Climb and descent angles not equal throughout maneuver.
5. Maneuver not symmetrical about judges' position.
6. Arcs misshapen.
7. Start and finish positions not as indicated.
8. Overall size of maneuver not realistic for prototype.
9. Model aircraft flight path not smooth and steady.
10 Too far away/too close/too high/too low.
NOTE: The competitor will adjust to the model side the maneuver

J PROCEDURE 90º WITH STRAIGHT FLIGHT AND 180º ANGLE

The model come from a straight and leveled flight , front of the center of the judges line make a 90º turn opposite to the judges line, make a 20 meters straight flight, then make a 180º arc making it with the tail rotor to the outside, performs this arc to the intersection to the entry track. This manoeuvre can be done from the left or right side.



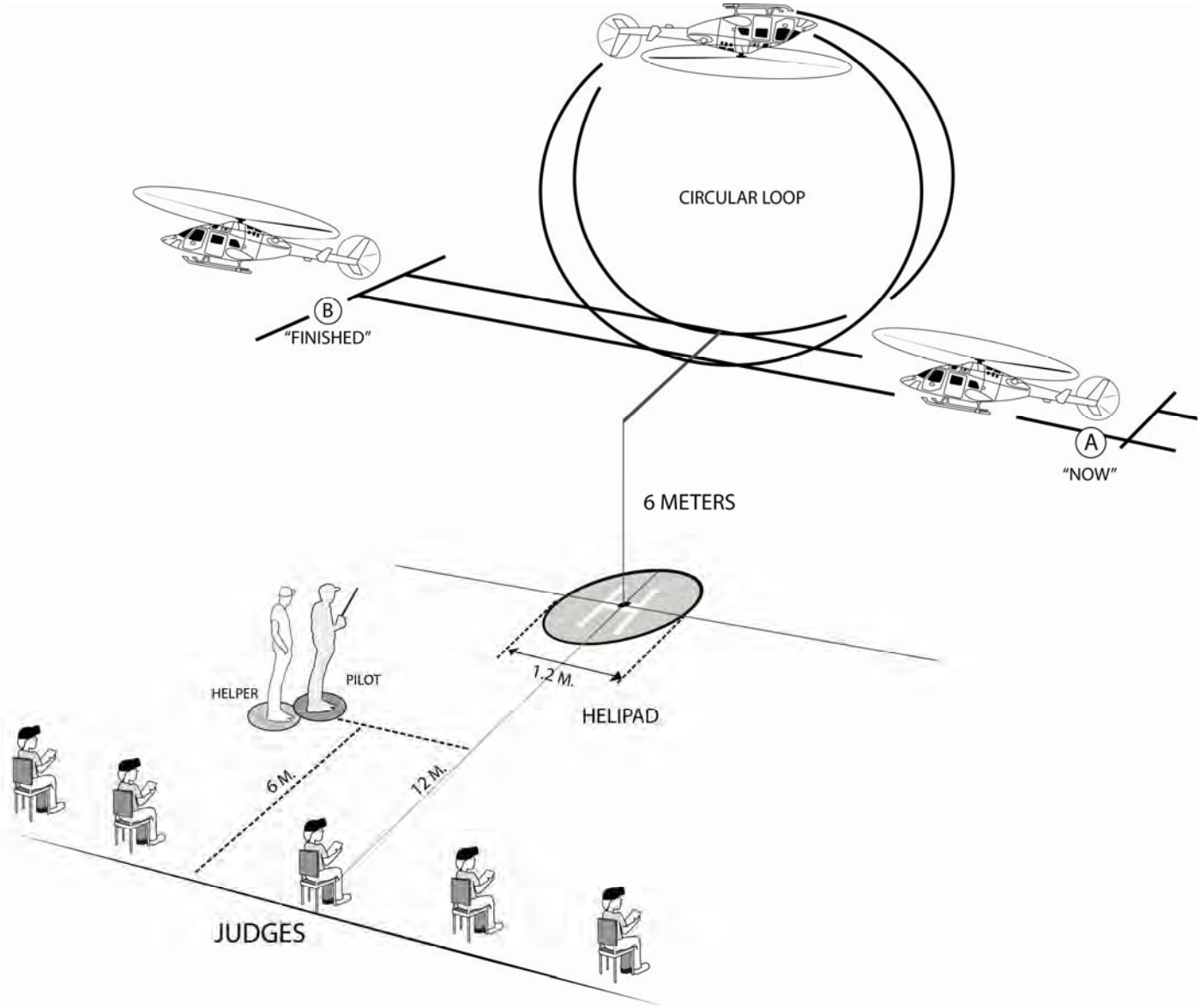
ERRORS:

1. Too far/too close/ too high/ too low.
2. Not a constant high.
3. Not at eyes level.
4. The 90º y 180º turns no constants.
5. The flight line of the model is not smooth and constant.
6. The 20 meters track is not straight

.

K ONE LOOP

From straight flight at 6 meters high at maximum, the model aircraft pulls up into an inside loop and resumes straight and level flight on the same heading as the entry. The model may adjust the speed and size of the maneuver depending on the prototype flight performance. This maneuver can be made from the left or right side

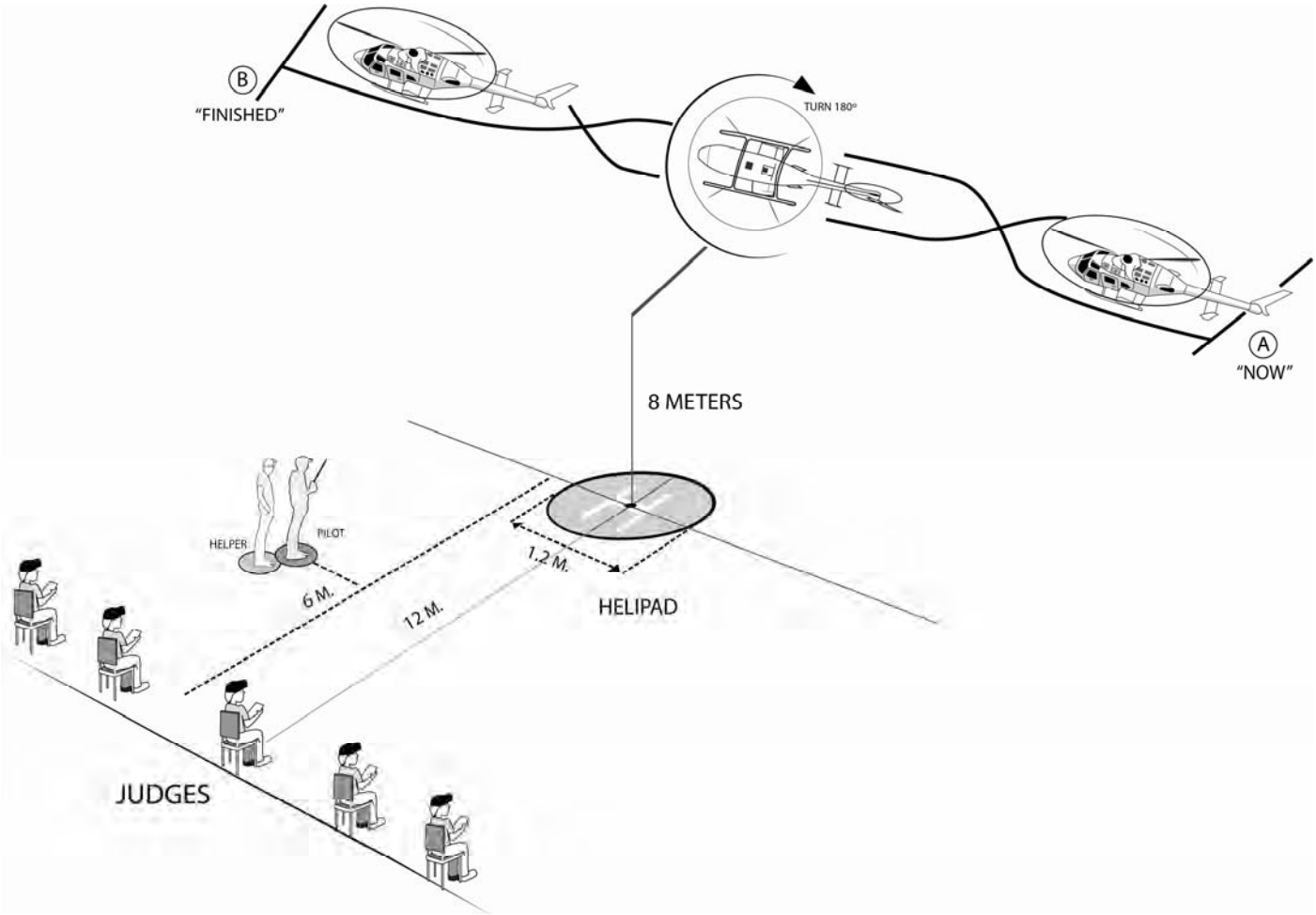


ERRORS:

1. Track of loop not vertical
2. Loop not sufficiently circular, commensurate with the subject type.
3. Size and speed of Loop not in manner of prototype.
4. Not centered on judges' position.
5. Does not resume straight and level flight on same track and height as entry.
6. Maneuver not flown parallel with judges' line.
7. Too far away/too close/too high/too low.

L INVERTED FLIGHT

From straight and niveled flight at 8 meters high, the Model aircraft make half rolls into inverted attitude and makes a straight inverted flight of 20 meters in length, then make another half rolls out of inverted attitude and resumes normal straight flight.. This maneuver can be made from left or right side

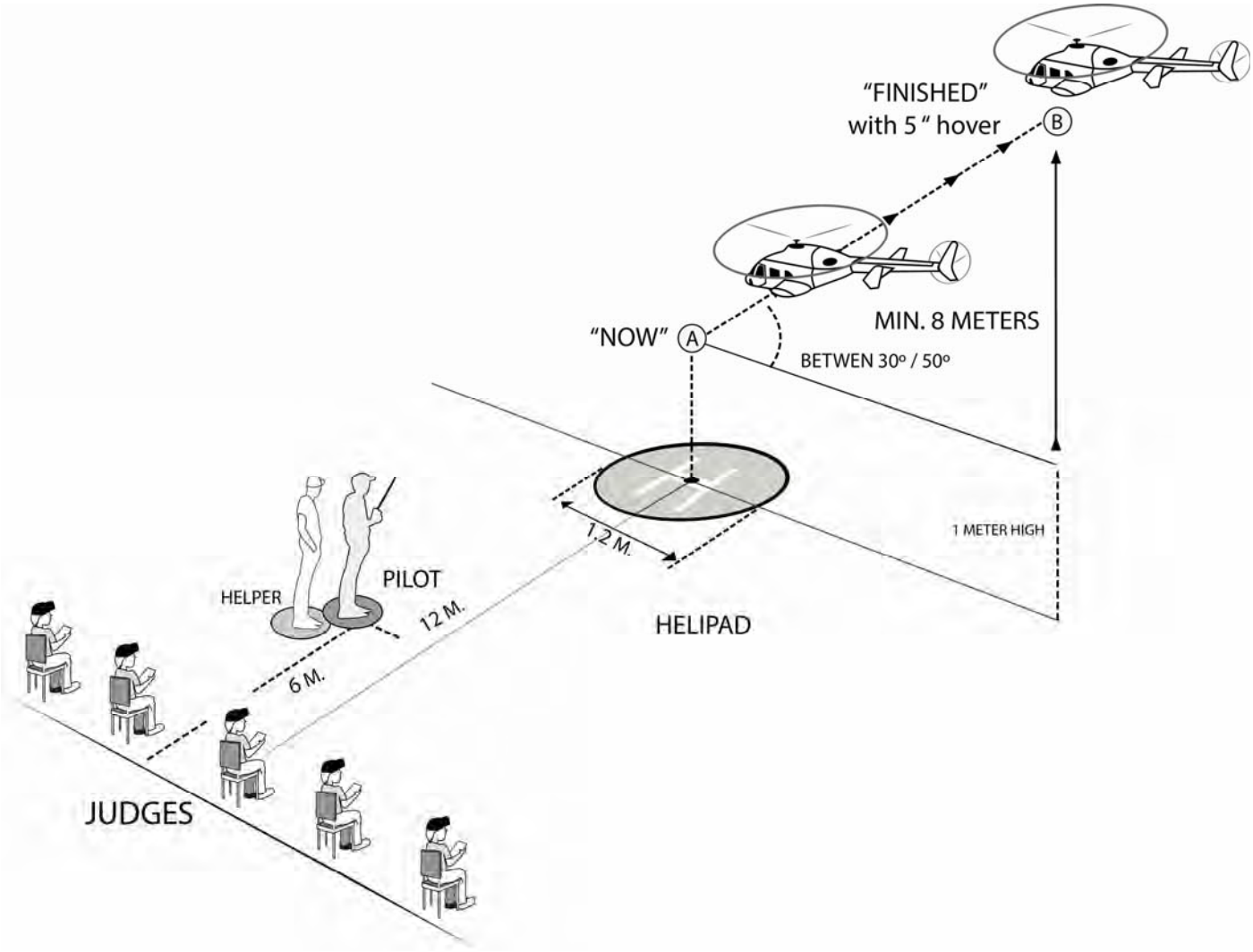


ERRORS:

1. Rate of turn is not constant.
2. The model aircraft changes altitude during the maneuver.
3. The model aircraft does not resume straight and level flight on the correct heading.
4. The model aircraft does not change from 90° to the 270° turn at the correct position.
5. The maneuver is too small or too large in reference to the prototype and scale of the model aircraft.
6. Too far/ to close /too high/too low.

M FIGURE BACKWARD

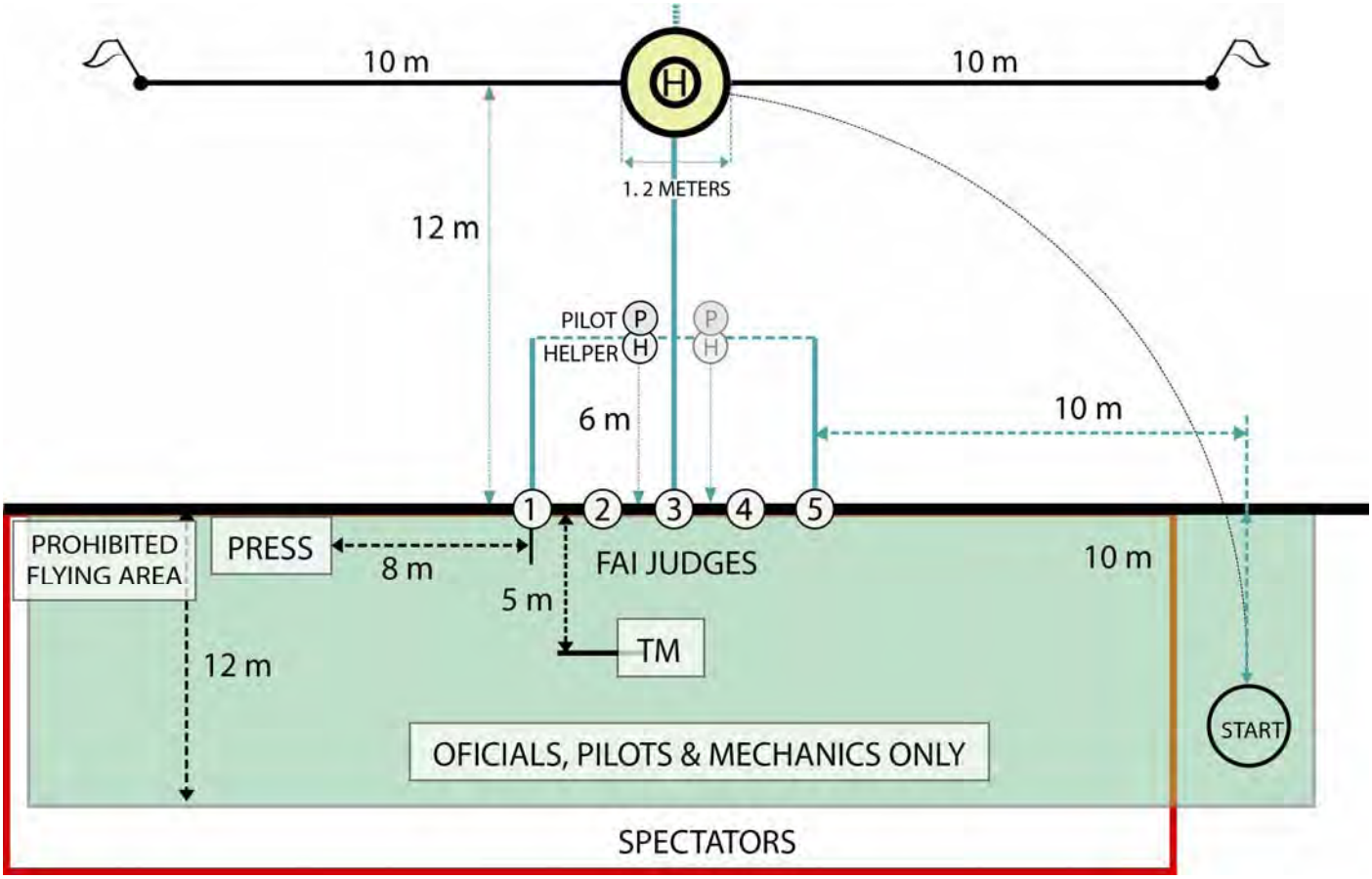
The model start the maneuver at one meter high over helipad center (from the point A) in a smooth angle from 30º to 50º then the maneuver will finish with a 5 seconds hover in the point B in a minimum height of 8 meters.
This figure can be made to left or right side**.**



ERRORS:

1. Finished too low.
2. Ascending angel no between 30º y 50º.
3. Climb up not smooth, continuous and steady.
4. Too far/too close/too high/ too low.

F4K CONTEST AREA LAYOUT



---oOo---