ANNEXED DOC 6G

6G.2.4 Optional Maneuvers (New optional Maneuvers)

N Straight Flight

O Horizontal Circle

P Landing Approach and Landing

Q Mountain Landing

R Quick Stop

S Tail – in Circle

T Hover "M"

U Obstacle Flight

V Horizontal Eight

W Procedure Turn

X Wingover

Y Triangular Circuit

Z Horizontal Square

AA Personnel/Freight Transport

AB "Invisible" Flight with Emergency Climb

AC Rescue

AD Cargo Flight

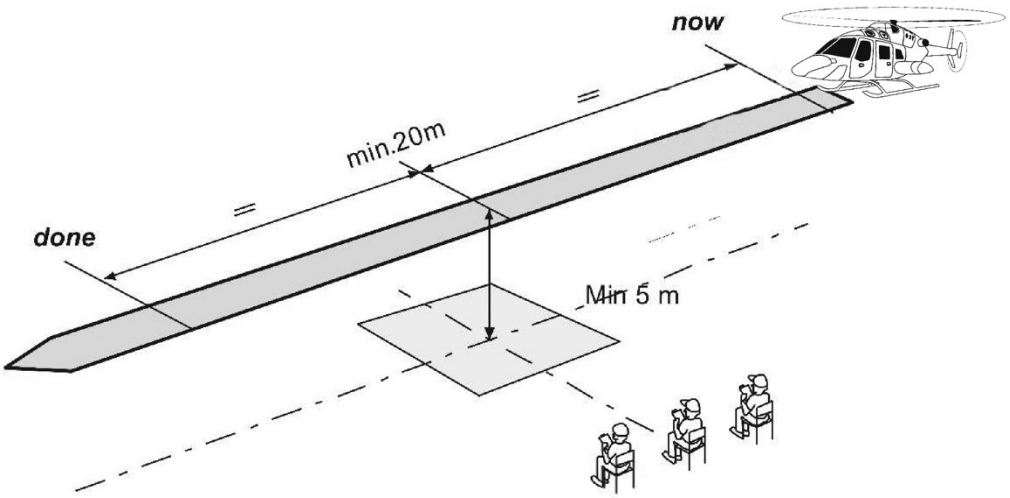
AE Light Demonstration

AF Overshoot

AG Drop Demonstration

N Straight Flight (OPTIONAL)

The model flies at a straight and level flight of at least 20 m, parallel to the 12 (15) meter line at a minimum altitude of 5 meters. A constant speed must be maintained over the entire distance.

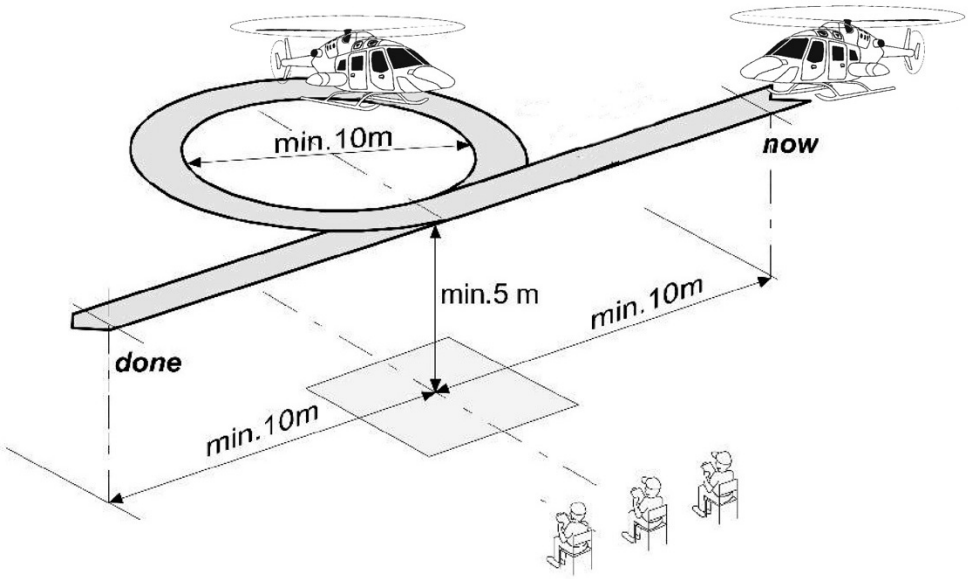


Errors:

1. Model does not fly straight
2. Model does not fly at a constant height
3. Model does not fly over the 12-meter line
4. Model does not fly parallel to the judge's line
5. Manoeuvre shorter than 20 m
6. Manoeuvre flown below 5 m
7. Flight path is not stable
8. Flight speed not constant

O Horizontal Circle (Left or Right) OPTIONAL

The model approaches in a straight and horizontal flight on a line that runs parallel to the judge line and is at least 10 meters. At the intersection of the 12- meter line, the model flies a 360° curve and ends the figure identically to the excursion to the flight.
The flown circle must have a diameter of at least 10 meters and the altitude of the entire figure must be at least 5 meters.

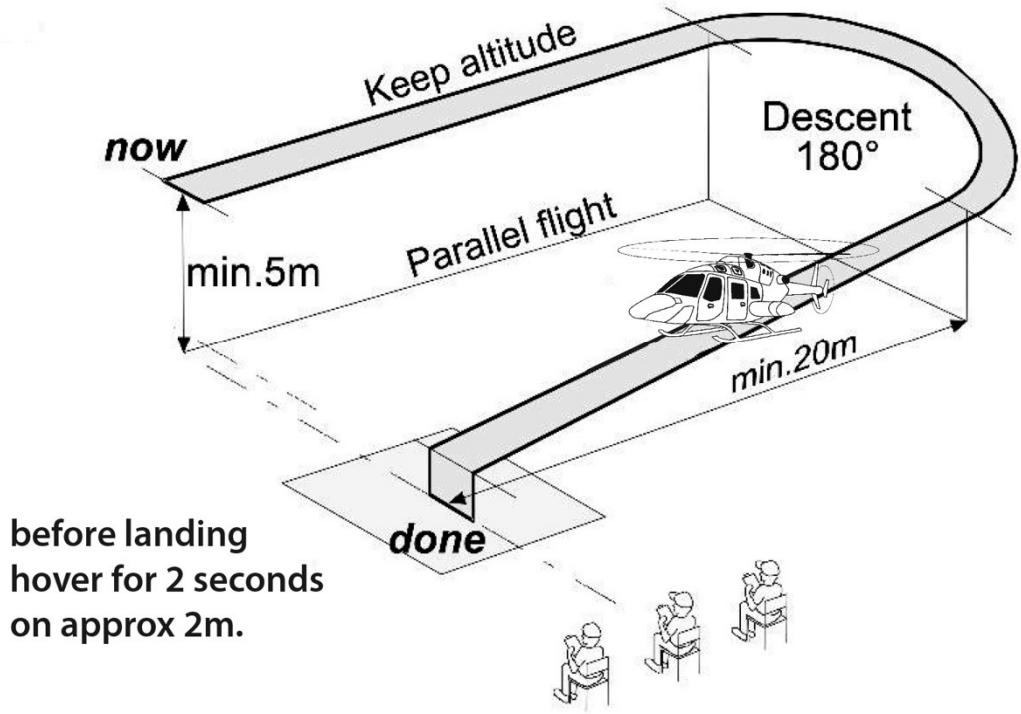


Error:

1. The entry and excursion are not at least 10 meters long
2. The flight altitude is not at least 5 meters
3. The entry and excursion are not in the same line
4. The entry and excursion are not parallel to the judges' line
5. Circle is not at least 10 meters in diameter
6. Circle failed, warped
7. The intersection is not in the center of the 12meter line

P Landing Approach and Landing (OPTIONAL)

The model begins the figure with a transverse approach at a height of at least 5 meters. In the extended axis from the middle of the 12meter line, the parallel approach begins. The route of the transverse approach is at the discretion of the pilot. This is followed by a 180° turn with simultaneous descent to the center of the middle landing square.
If a landing gear is present on the model, it is extended at the beginning of the descent. Above the circle (Ø1.5 meters), the model hovers for at least 2 seconds
and then lands gently and evenly.

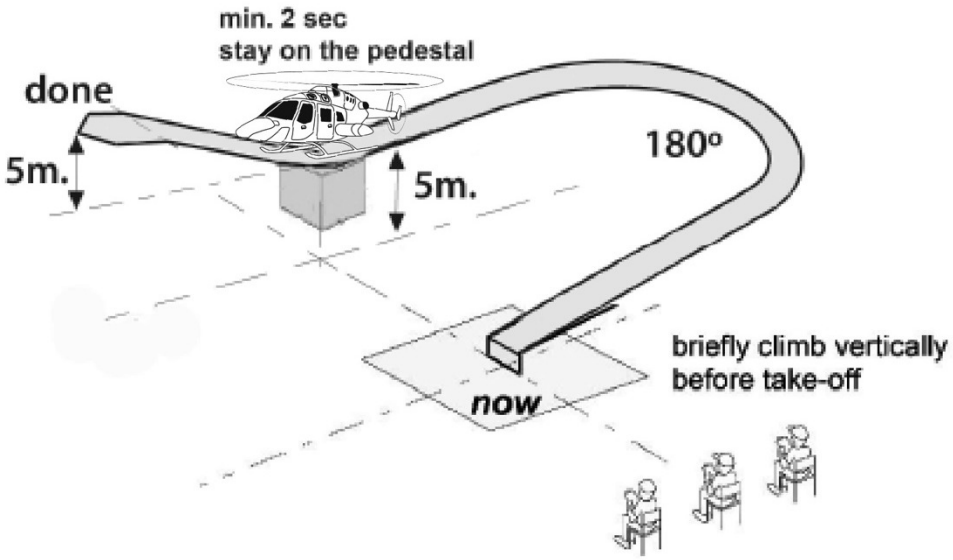


Error:

1. The approach does not start parallel to the landing approach
2. The minimum height of 5 meters is not observed at the beginning of the figure
3. The model does not fly at the same altitude up to the 180° turn
4. At the beginning of the 180° turn, the model does not sink evenly and continuously over the entire route. (The sink rate is too steep or too flat)
5. The model does not fly a regular 180° turn
6. Model oscillates and moves during descent
7. At 60cm floating height no visible hold can be detected
8. Model oscillates and moves during descent

Q Mountain Landing (Optional Maneuver)

The model takes off from the middle circle (Ø1.5 meters) and rises in a slow forward flight to an altitude suitable for approaching the point of contact. The approach curve should describe a 180° turn. The model then sets up with both runners, or .dem chassis in the "mountains" (pedestal). It remains there for at least 2 seconds and then continues to rise to a height of at least 5 meters.



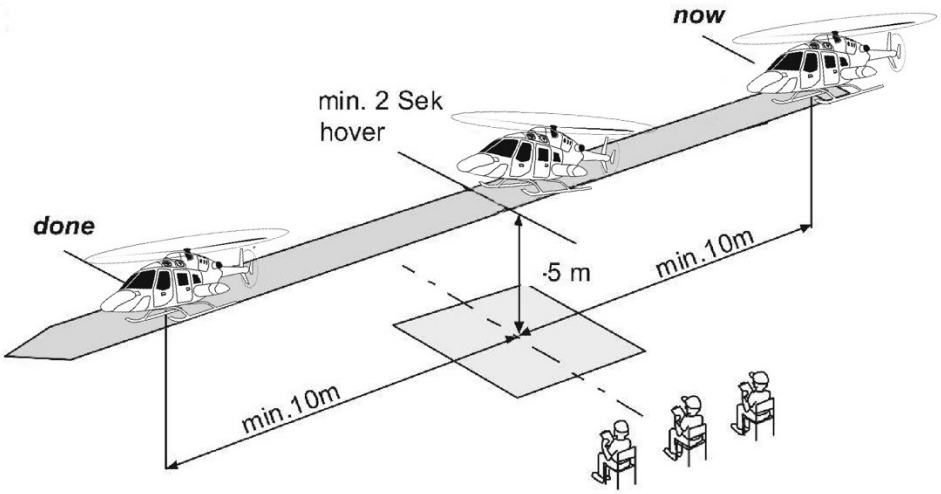
Error:

1. The model does not describe a 180° turn from the take-off field to the landing point
2. The model does not remain on the pedestal for at least 2 seconds
3. The model does not remain quiet on the pedestal
4. The model does not land on the podium

The model does not reach the minimum height of 5 meters after the stopover

R Quick Stop (Optional Maneuver)

The model flies at least 10 meters straight ahead at a brisk speed. This at a height of at least 5 meters and parallel to the judges' line. The Quick stop takes place directly above the center of the 12x12m square. The quick stop must be at least 2 seconds and must be clearly visible. After the stop, a uniform departure
of at least 10 meters takes place at the same height of the approach.

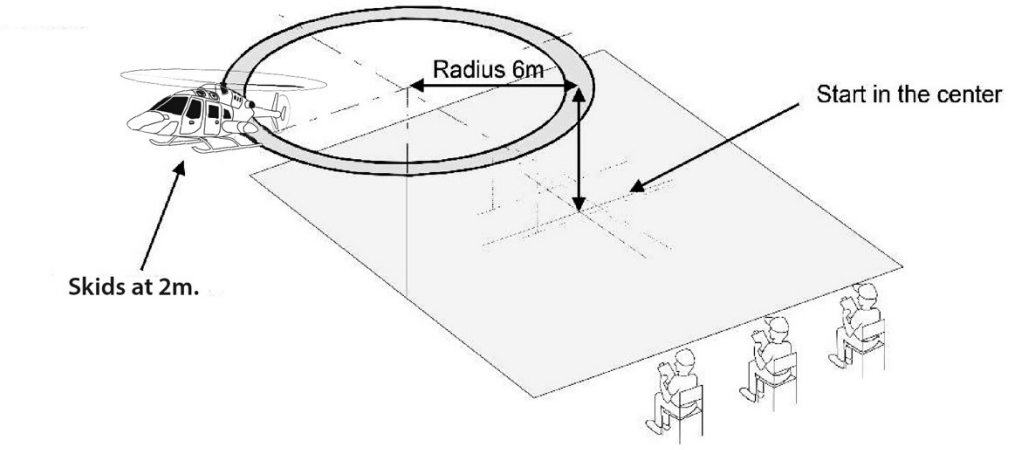


Error:

1. The model must not rise or break out sideways during approach and departure
2. The model does not stop in the middle of the 12x12m square
3. The model does not float at least 2 seconds after the visible stop
4. The model tilts to its side or rises away during quick stop
5. The model erupts uncontrollably
6. The figure is not executed between 5 meters
7. The arrival and departure are not at least 5 meters high
8. Figure was flown as a "hovering figure" and not at a brisk speed

S Tail-in Circle (Optional Maneuver)

Start from the middle circle (Ø1.5 meters) to the pilot's eye level. Pilot is at the center of the circle. Then a short stay of at least 2 sec. Subsequently, a circular flight with a radius of 6 meters is to be flown. The rear of the model always points to the pilot. After 360°, the model remains for 2 seconds before the descent into the middle circle (Ø1.5 meters) begins.

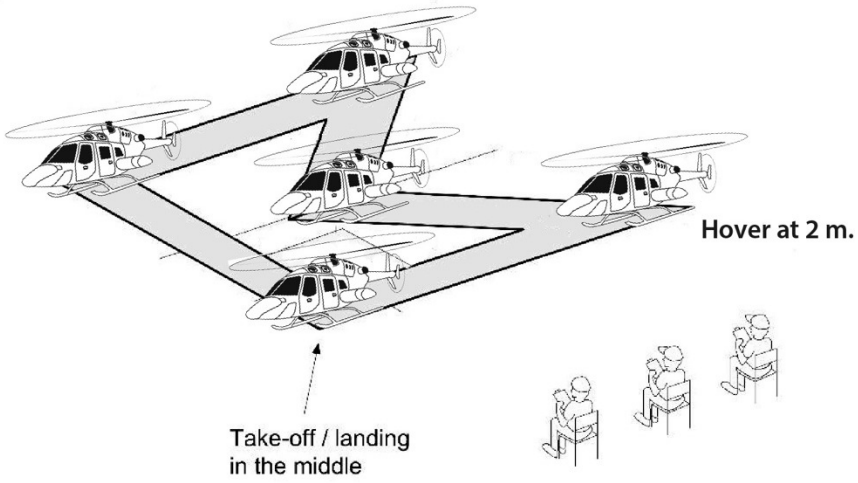


Error:

1. The model oscillates or moves during the ascent or descent
2. The rotation is not uniform and correspondingly slow
3. The rear does not point to the center
4. The altitude is not at eye level
5. The short stay of 2 sec. before and after the tail circle is not present

T Hover „M“(Optional Maneuver)

The model starts from a circle (Ø1.5 meters) and climbs evenly vertically up to eye level. There it floats at least 2 sec. With the same height, the model floats in a diagonal line to the right or left corner of the pilot. After 2 sec. with calm hovering, the model moves with the same height in a straight line to the front corner. After 2 sec. the model shifts to the opposite side and again after 2 sec. back to the corner at the height of the pilot. Finally, the model moves in a diagonal line over the middle square, where it again moves 2 sec. remains and then begins with the descent and lands again in the circle (Ø1.5 meters)

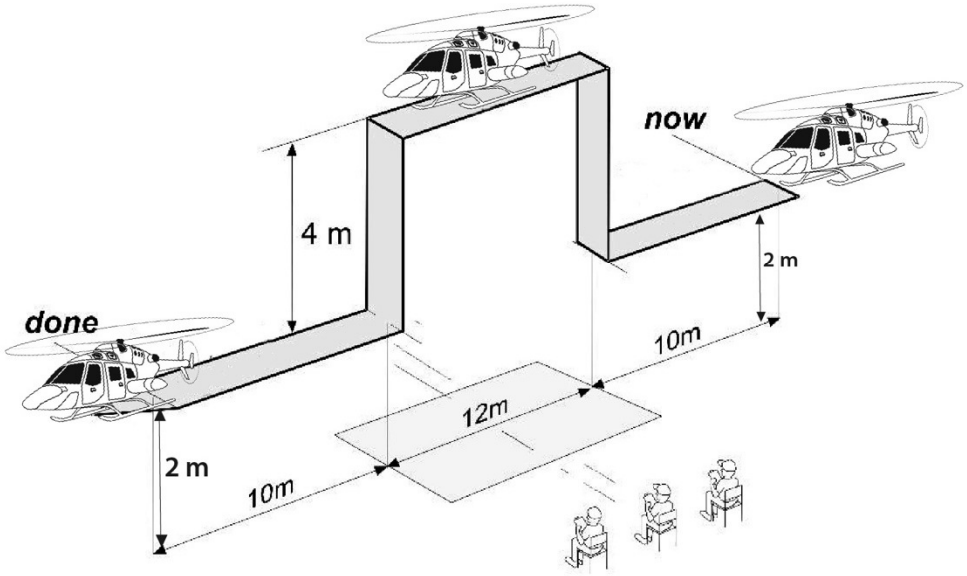


Error:

1. The model does not push, rotate or move during flight
2. The model does not fly the same height and the same speed
3. The model leaves the course or does not stop over the flags
4. Take-off and landing are not soft
5. The model lands only partially in the center or outside the circle (Ø1.5 meters)
6. The stops of the figure corners are not all identical and at least 2 sec.

U Obstacle Flight (Optional Maneuver)

The model flies at eye level and at least 10 meters at the same height. Above the outer point of the 12-meter line, the model hovers at least 2 seconds and then begins with a steady climb of 4 meters. After that, it floats again for 2 seconds. and then makes a straight overflight at the same altitude to the opposite line by at least 2 sec. to carry out sustained hovering flight. Subsequently, the model sinks by 4 meters to eye level and floats again at least. 2 sec. Afterwards, the straight- lined onward flight of at least 10 meters takes place at a permanent height.

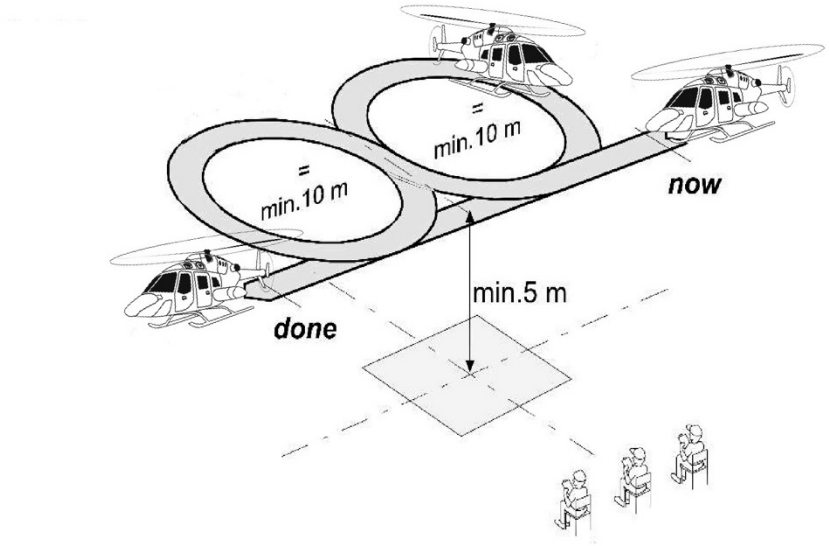


Error:

1. The model does not fly horizontally or vertically in the designated routes
2. Stops do not take place above the corresponding points
3. The stops are too short and uneven (min. 2 sec)
4. The required ascent and flight altitudes are not adhered to
5. The entrance and excursion is not at the same altitude and not min. 10 meters far

V Horizontal Eight (Optional Maneuver)

Flight parallel to the judge line, then flies a 90° curve away from this line, followed by a 360° circle in the opposite direction. A 270° curve in the original flight direction ends the figure on the original flight line.
The intersection, the center of the figure, must be perpendicular to the entry line and on the centerline of the 12meter line. This is at least 5 meters above the ground.

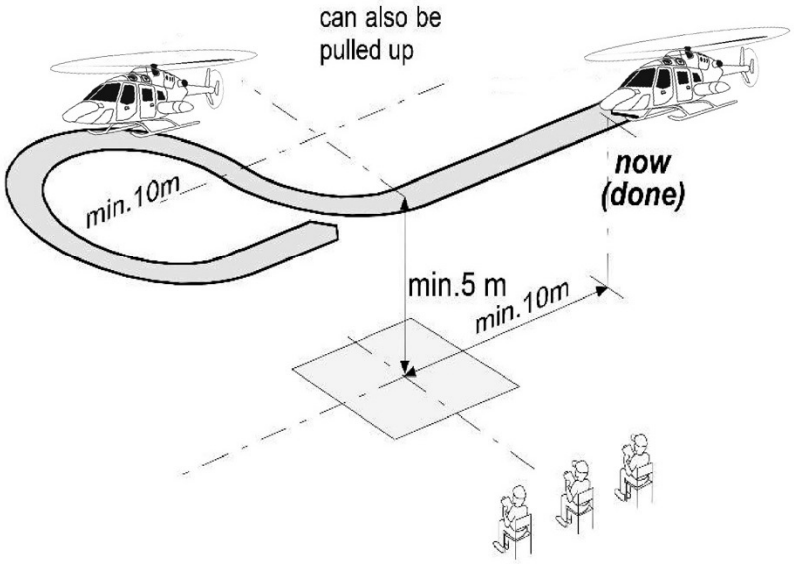


Error:

1. Circles are not the same as large (at least 10 meters)
2. Circles failed, warped
3. Height not the same and at least 5 meters
4. Intersection is not in the middle of the 12meter line
5. Entry and excursion not in the same line
6. Entry and excursion not parallel to the judges' line

W Procedure Turn Left or Right (Optional Maneuver)

Flight parallel to the judges' line. At the intersection of the 12meter line, the model flies a quarter circle away from this line, followed by a 270° circle in the opposite direction. The excursion takes place on the same line as the flight. The minimum flight altitude must be at least. 5 meters. The curve may also be pulled up.

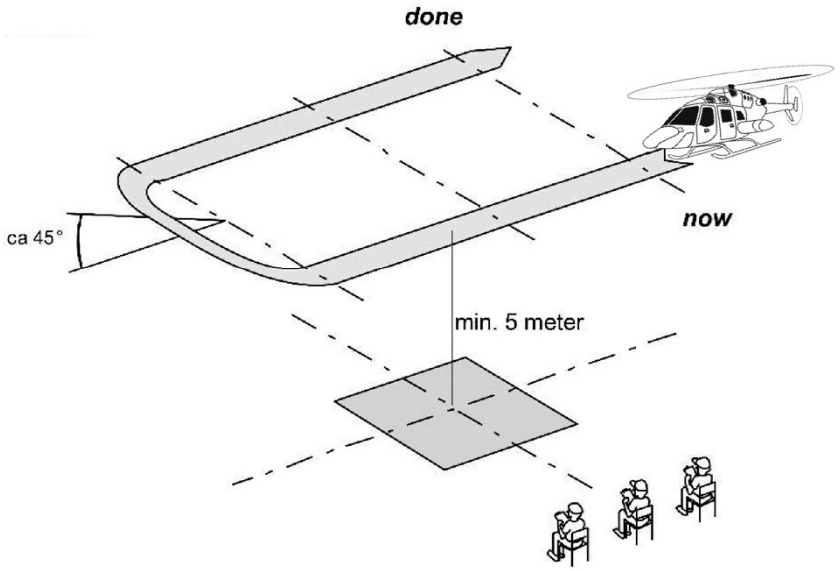


Error:

1. The circle is not at least 10 meters in diameter
2. The circle has failed, warped
3. The quarter circle does not begin at the intersection of the 12meter line
4. The entry altitude is not at least 5 meters
5. Entry and excursion is not at least 10 meters
6. Entry and excursion not in the same line
7. Entry and excursion not parallel to the judges' line

X Wingover Left or Right (Optional Maneuver)

The model flies parallel to the judges and over the center of the 12x12 meter square and begins the ascent with a 45° radius after the 12x12 meter square line. The length of the climb is flown at your own discretion. However, a clear ascent phase must be recognizable before the turnaround. The subsequent rotation is flown as a 180° turn. The descent and excursion take place parallel to the ascent and descent.

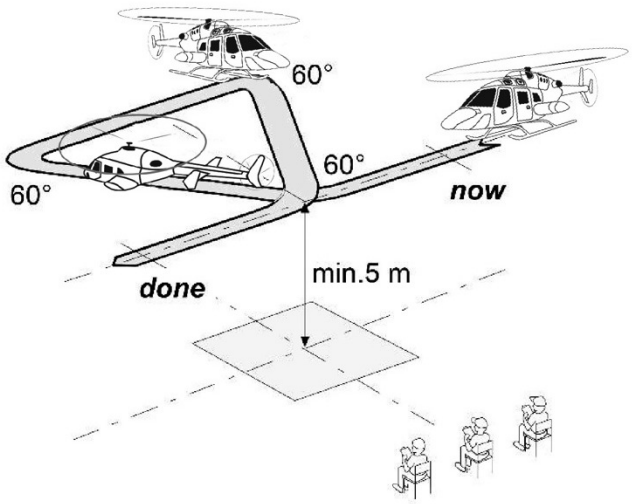


Error:

1. The model does not fly parallel to the judges and over the intersection of the 12x12 square
2. The radius 45° starts within the 12x12 square
3. The radius is not 45°
4. The turn is not 180° and is not uniform
5. Ascent and descent are not parallel and harmonious
6. One and the excursion are not parallel and harmonious

Y Triangular Circuit (Optional Maneuver)

The model approaches in a straight and horizontal flight on a line that runs parallel to the judges' line. Then flies away at the intersection of the 12meter line in an arc of 60°. After at least 10 meters, a 60° curve is followed by a straight flight parallel to the entry. After at least 10 meters, a 60° curve takes
place to the intersection. The excursion takes place in the same flight position as the flight. The minimum flight altitude of the entire figure is 5 meters. The
triangular straights must all be of the same length.

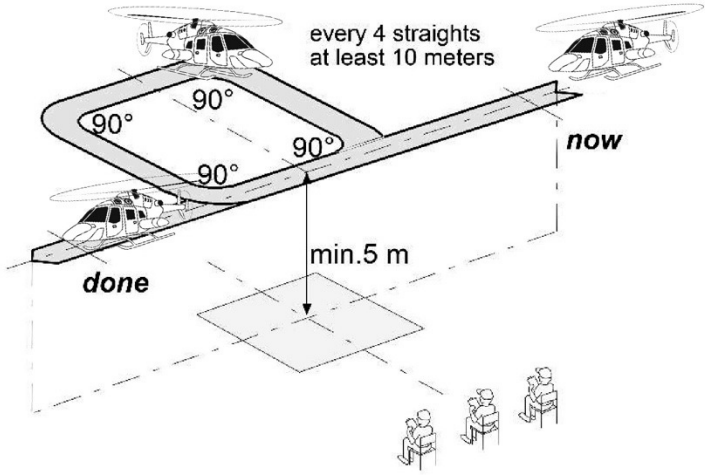


Error:

1. The entry and excursion are not at least 10 meters long
2. The flight altitude is not at least 5 meters
3. The entry and excursion are not in the same line
4. The entry and excursion are not parallel to the judges' line
5. The three 60° curves are not identical and even
6. The sections are unequally long. (Figure warped)
7. The intersection is not in the center of the 12meter line

Z Horizontal Square (Optional Maneuver)

The model approaches in a straight and horizontal flight on a line that runs parallel to the judge line, then flies at least 5 meters after the intersection of the
12meter line and then turns in an arc of 90°. After at least 10 meters, a 90°
curve is followed by a straight flight parallel to the entry. After at least 10 meters, another 90° curve takes place, which ends after at least 10 meters with a 90° curve parallel to the entry. The excursion takes place in the same flight position as the flight. The minimum flight altitude of the entire figure is at least 5 meters. The square straights must all be the same length.

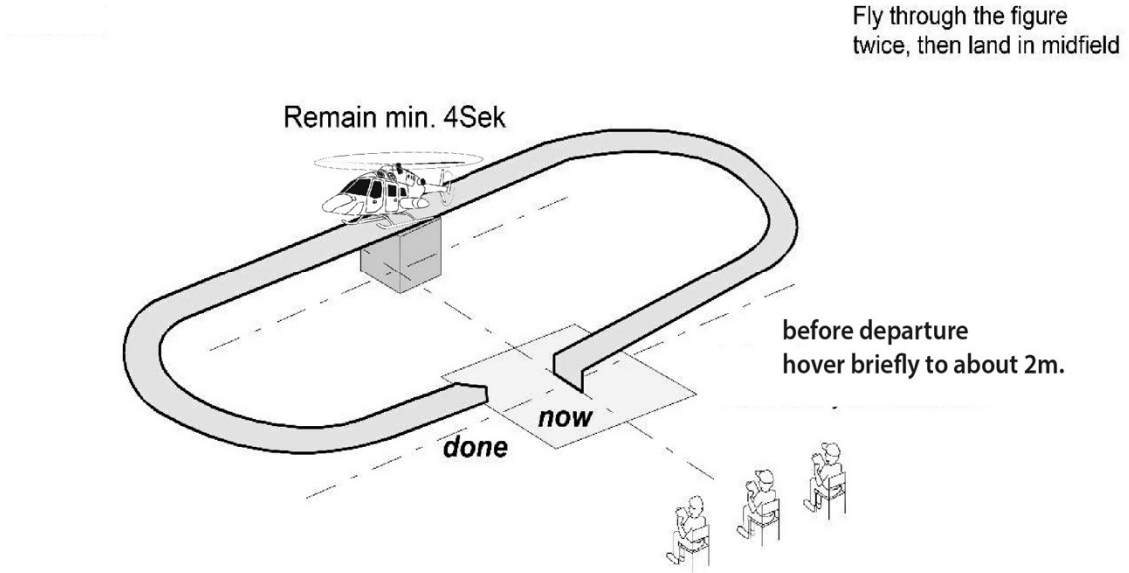


Error:

1. The entry and excursion are not at least 10 meters long
2. The flight altitude is not at least 5 meters
3. The entry and excursion are not in the same line
4. The entry and excursion are not parallel to the judges' line
5. The four 90° curves are not identical and even
6. The sections are unequally long. (Figure warped) The intersection is not in the center of the 12meter line

AA Personnel / Freight Transport (Optional Maneuver)

Start from the middle circle (Ø1.5 meters) at an initial altitude of 60cm, after a short check the transition to the ascent and departure to the "area of operation" with subsequent stopover in the mountains takes place. (pedestal)
After a short stay of at least 4 sec. in the mountains (pedestal), the flight continues. After another overflight, a new stopover takes place in the mountains. (pedestal) This stopover takes at least 4 seconds.
Afterwards, the return flight with landing in a circle (Ø1.5 meters) takes place

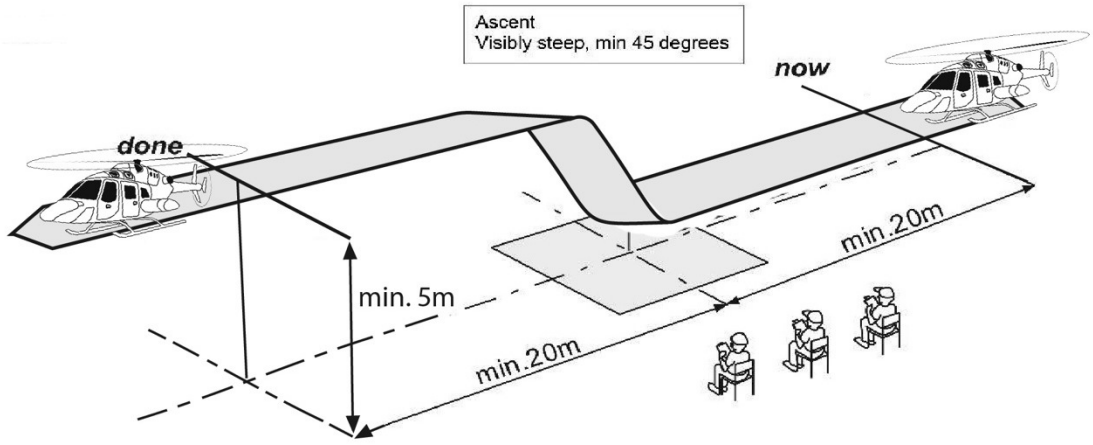


Error:

1. Model oscillates and moves during the climb
2. The model does not stand at least 4 sec. on the podium
3. The model does not stand perfectly still on the podium
4. The model does not land on the podium
5. The figure is not parallel to the judge line
6. The landing does not take place in a circle (Ø1.5 meters)

AB Invisible 'Flight with Emergency Climb (Optional Maneuver)

The helicopter flies parallel to the judges with an entry of at least 20 meters as close as possible above the ground towards the middle square. (Invisible from enemy radar!) An obstacle (circle Ø1.5 meters, fictitious) forces the helicopter to swerve steeply upwards. The helicopter rises to a height of at least 5 meters and continues its flight parallel to the judges. The figure ends after at least 20 meters of straight-line travel.

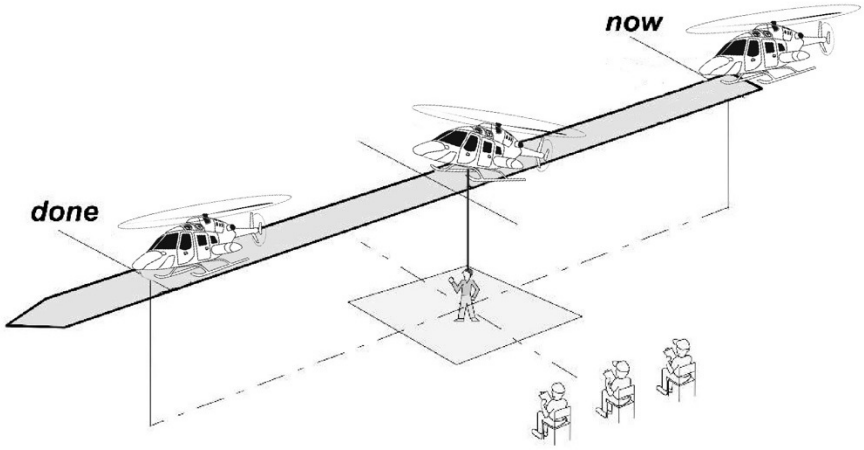


Error:

1. The "Invisible Flight" is not constantly low and at the same altitude and direction above the ground
2. The "Invisible Flight" is not parallel to the judges
1. The "Invisible Flight" is not at least 20 meters before the "emergency ascent"
2. The emergency ascent is not immediately in front of the circle (Ø1.5 meters)
3. The model breaks out laterally during emergency ascent
4. The onward flight is not at least 5 meters above ground
5. The figure is not parallel to the judges' line and the 12meter line
6. The onward flight is not at least 20 meters long

AC Rescue (Optional Maneuver)

The model flies about 10 meters straight ahead. This between 1.5 and 3 meters in height and parallel to the judges' line. Above the center of the 12-meter line, the model stops its flight. The rescue is carried out. After the rescue, a uniform departure takes place at the same height and direction as the approach.

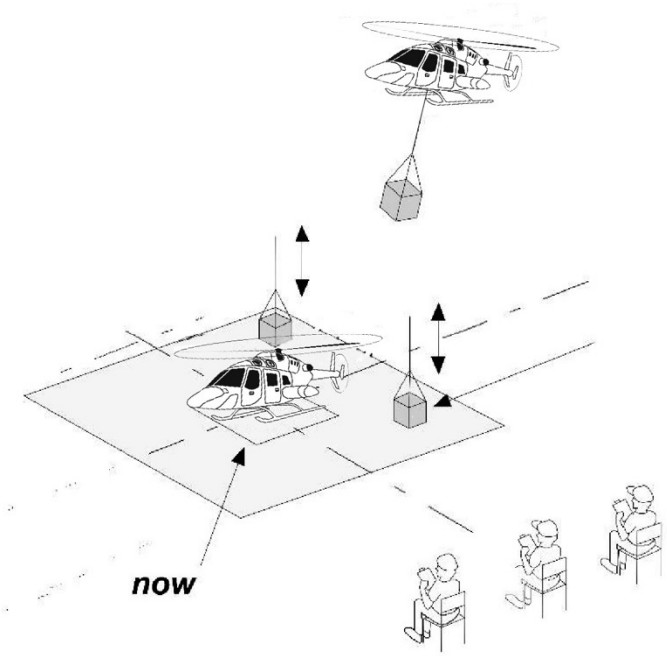


Error:

1. The entry and exit is not at the same height and direction and at least 10 meters long
1. The figure is not parallel to the judge line
2. The stop and departure from the center of the square is uneven
3. The rescue does not take place above the center
4. The model floats unstable during the rescue

AD Cargo Flight (Optional Maneuver)

The model takes off in a circle (Ø1.5 meters) and flies a freely selectable sightseeing flight. The approach for load transfer or load absorption takes place in the 12x12 meter square. The subsequent landing of the model, on the other hand, takes place in a circle (Ø1.5 meters).



Error:

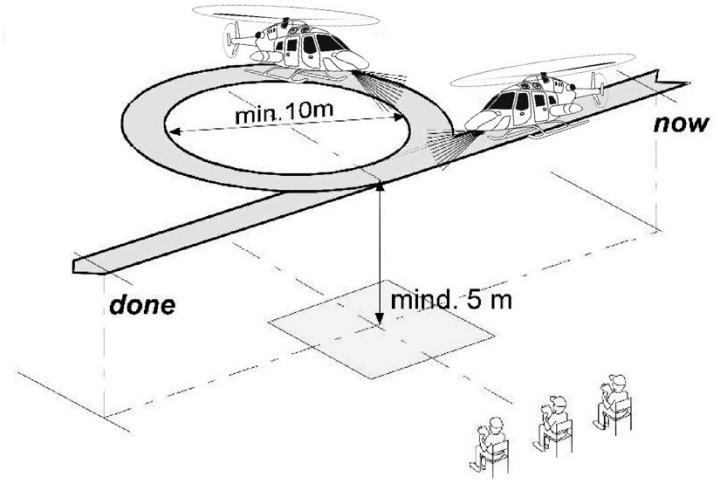
1. The start is not from the circle (Ø1.5 meters)
2. The load picking or setting down does not take place in the 12x12 meter square
3. The model is unstable throughout the figure
4. The landing does not take place in a circle (Ø1.5 meters)

AE Light Demonstration (Optional Maneuver)

The model approaches in a straight and horizontal flight on a line that runs parallel to the judge line and is at least 10 meters. At the intersection of the 12- meter line, the model flies a 360° curve and ends the figure identically to the excursion to the flight. During the figure, the lighting of the helicopter is skillfully staged.

The flown circle must be at least 10 meters in diameter and the altitude of the entire figure is at least 5 meters.

The lighting must be switched on <u>in front</u> of the figure.



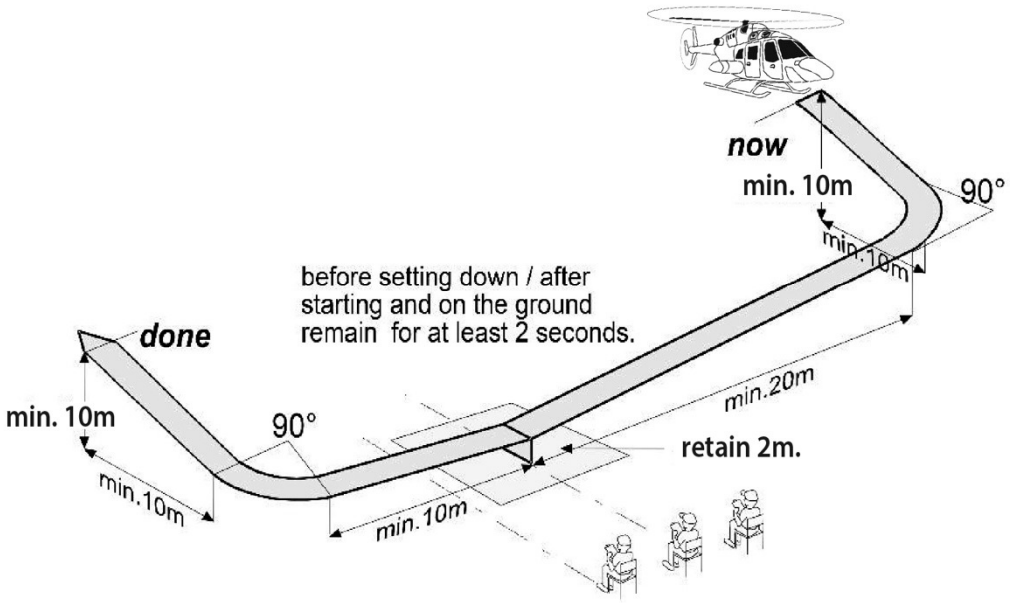
Error:

1. The entry and excursion is not at least 10 meters long
2. The flight altitude is not at least 5 meters
3. The entry and excursion is not in the same line
4. The entry and excursion is not parallel to the judges' line
5. The circle is not at least 10 meters in diameter
6. The circle has failed and/or warped
7. The intersection is not in the center of the 12 meter line

The lighting was not presented or switched on.

AF Overshoot (Optional Maneuver)

The model flies in a transverse approach of at least 10 meters. Then it turns 90° and begins with the final approach which must be at least 20 meters. The glide angle begins with the transverse approach and ends at about 60cm hovering height above the landing square. If a landing gear is present, it must be extended during the landing approach. Then the model lands in a circle (Ø1.5 meters) and remains there for 2 seconds. Afterwards it takes off again and remains again for a short moment at about 60cm height. Now the model, like the model, is continuously increasing. After at least 10 meters, a 90° curve takes place. If applicable, the landing gear must be retracted during take-off. This figure is finished when the helicopter has turned to the transverse descent and covered at least 10 meters and this at a flight altitude of at least 5 meters.



Error:

1. The model does not begin the figure with the described landing approach
2. The model does not start the final approach after 90°
3. The transverse flight and landing approach is not at least 10 meters, or 20 meters
4. The model does not sink continuously over the entire distance

(The sink rate is too steep or too flat)

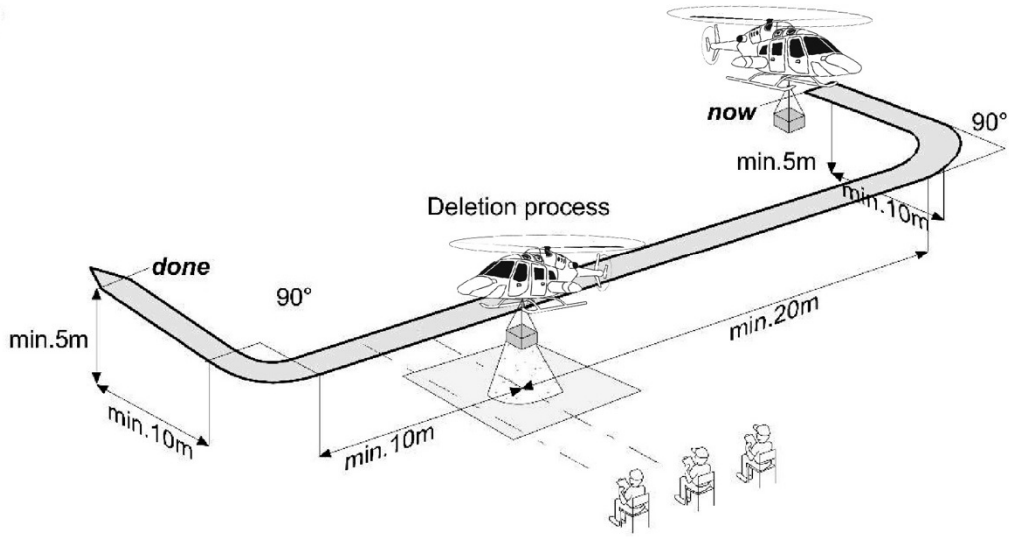
5. Model oscillates and moves during descent
6. The retract, if available, is not extended
7. At approx. 60cm hovering height no visible hold can be detected
8. Model oscillates and moves during descent, landing and climbing
9. The model does not rise continuously over the entire route

(The climb rate is too steep or too flat)

10. Transverse flight angle is not 90°
11. The retract if available, is not retracted
12. Unrealistic start and climbing speed
13. The descent and transverse flight is not at least 10 meters
14. The minimum height of 5 meters is not reached at the end of the figure

AG Drop Demonstration (Optional Maneuver)

The model flies in a transverse approach of at least 10 meters. Then it turns 90° and begins with the final approach in the direction of center box, min. 20 meters. Now the deletion process takes place directly above the center. The model then flies at least 10 meters further and turns off with a 90° turn. The transverse descent must be at least. 10 meters and end at a height of at least 5 meters.



Error:

1. The model does not begin the figure with the described transverse approach
2. The model does not start the final approach after 90°
3. The transverse approach is not at least 10 meters
4. The approach is not min. 20 meters
5. The "delete" operation is not performed and is not performed above the center
6. The model does not fly on the same level after the "extinguishing process" and does not make a 90° turn after at least 10 meters and rises to a minimum height of 5 meters