



Pilot Proficiency Program

Level V

Level V is an advanced level of proficiency and completion of this level takes the pilot to the level of a pilot capable of performing beyond the basics of backward flight. Intrinsic to this level is successfully completing all components of the previous levels then advancing to the ability to control the Helicopter in these new orientations. Please use extreme caution when performing these advanced maneuvers the pilots and spectators' safety is of utmost importance.

Note: To get credit for a maneuver all required variations must be demonstrated.

Maneuver Description

A. Completed Levels I, II, III, & IV

B. Sustained Backward Flight (2 required variations)

1. With the helicopter upright, fly backward for at least one (1) clockwise and one (1) counter clockwise circuits around your flying area.

Note: The idea is to learn to control the helicopter as it is turning towards you and away from you.

C. Sustained Backward Figure of Eight - Flying (2 required variations)

1. With the helicopter hovering pointing to the left over the landing area move the helicopter backward to the right, then perform a 270-degree turn. The Helicopter should be flying backwards directly at the pilot.
2. While maintaining constant altitude and speed execute a 360-degree turn, in the opposite direction, the helicopter should flying directly at the pilot again.
3. Perform a 90 degree turn, in the same direction as the first 270 degree turn fly away straight and level and then fly backwards to the starting point above the landing area.
4. With the helicopter hovering Nose-In over the landing area move the helicopter backward away from the pilot perform a 360-degree turn. The Helicopter should be flying backwards directly away from the pilot.
5. While maintaining constant altitude and speed execute another 360-degree turn, in the opposite direction, the helicopter should be flying directly away from the pilot again.
6. To complete this maneuver, fly backward to a hover above the landing area.

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D. Sustained Backward Flight - Inside Loops (2 required variations)

1. With the helicopter upright and flying backward straight and level from the left to the right, when the helicopter is directly in front of the pilot push forward cyclic and execute a Tail first Inside Loop. Use the collective to make the Loop as round as possible.
2. Repeat, but this time starts by flying backwards from right to left.

Optional Variations: (Not required) Instead of pushing cyclic forward and performing an Inside Loop try pulling cyclic back and do a Backward Outside Loop.

E. Sustained Backward Flight - Rolls (4 required variations)

1. While the helicopter is flying straight and level backward from left to right, before it reaches the pilot roll the helicopter away from the pilot until it completes one (1) roll. The helicopter should be flying inverted and backward as it passes in front of the pilot, the helicopter should continue to roll back to upright after it passes in front of the pilot. Use collective control to maintain constant altitude and speed. Fly away from the maneuver straight and level.
2. Repeat the above step but this time roll the helicopter toward the pilot.
3. Repeat the above steps but this time flying backward from the right to the left, and do both a roll to the left and to the right.

F. Sustained Backward Inverted Flight (2 required variations)

1. With the helicopter inverted fly backward for at least one (1) clockwise and one (1) counter clockwise circuits around your flying area.
- Note:** The idea is to learn to control the helicopter as it is turning towards you and away from you.

G. Sustained Backward Inverted Figure of Eight - Flying (2 required variations)

1. With the helicopter hovering inverted pointing to the left over the landing area move the helicopter backward to the right perform a 270 degree turn. The Helicopter should be flying backwards directly at the pilot.
2. While maintaining constant altitude and speed execute a 360 degree turn, in the opposite direction, the helicopter should be flying directly at the pilot again.
3. Perform a 90 degree turn; in the same direction as the first 270 degree turn fly out straight and level and then fly backwards to the starting point above the landing area.
4. With the helicopter hovering Nose-In inverted over the landing area move the helicopter backward away from the pilot perform a 360 degree turn. The Helicopter should be flying backwards directly away from the pilot.

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Maneuver Description

5. While maintaining constant altitude and speed execute a 360 degree turn, in the opposite direction, the helicopter should flying directly away the pilot again.
6. To complete this maneuver, fly backward to a hover above the landing area.

H. Autorotation with inverted segment (2 required variations)

1. Starting from an altitude of no less than twenty (20) meters and on a heading parallel to the flight line, with the helicopter inverted, and to the pilot's right start your Autorotation.
2. During the Autorotation roll the helicopter to upright.
3. Try for a smooth constant rate of descent directly to the one (1) meter/yard landing circle.
4. Any part of the helicopter's landing skids must be within the one (1) meter/yard landing circle.
5. Repeat, but this time start the Autorotation to the pilot's left.

Notes: There is not limit on the number of tries to complete this maneuver. Please note the change to the requirement of landing completely within the landing circle. For this maneuvers only the landing requirement is that at least part of the landing skids are within the landing circle.

I. Advanced Aerobatics

Note: Use the Collective control to maintain as constant altitude as possible during these maneuvers.

1. Knife Edge Pirouette (8 required variations)

- a. With the helicopter flying straight and level from right to left roll the helicopter to the left (toward the pilot), drop collective to zero degrees, and while the helicopter is in knife edge flight execute at least one (1) full tail rotor turn (360 degrees) to the right (clockwise). Exit by rolling to the right adding collective and fly away upright straight and level.
- b. Repeat step a, but this time make the tail rotor turn to the left (counter-clockwise).
- c. Repeat steps a, & b, but this time roll the helicopter to the right (away from the pilot). Exit by rolling back to the left.
- d. Repeat steps a, b, & c, but this time with the helicopter flying from left to right.

Optional Variations: (Not required) Instead of exiting with the helicopter upright exit the maneuver inverted, backward, or inverted and backward.

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Maneuver Description

2. Death Spiral (4 required variations)

- a. With the helicopter hovering at a safe altitude roll the helicopter to the left, until the rotor blades are vertical, the helicopter must remain horizontal during this maneuver, drop collective and add forward cyclic.
- b. The helicopter must complete at least three (3) complete “forward” tumbles as it is falling sideways toward the ground.
- c. Roll back to the right to exit this maneuver.
- d. Repeat the above steps, but start the maneuver by rolling to the right, and exit by rolling to the left.
- e. Repeat the above steps, but use aft cyclic instead of forward cyclic completing at least three (3) “backward” tumbles.

Optional Variations: (Not required) Instead of exiting with the helicopter upright exit the maneuver inverted, also experiment with both positive and negative collective during the tumbling phase of the maneuver.

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	<u>Witness #1</u>	<u>Witness #2</u>
A. Completed all Previous Levels	_____	_____
B. Sustained Backward Flight (2 required variations)	_____	_____
C. Backward Figure of Eight – Flying (2 required variations)	_____	_____
D. Backward Flight - Loops (2 required variations)	_____	_____
E. Backward Flight – Rolls (4 required variations)	_____	_____
F. Backward Inverted Flight (2 required variations)	_____	_____
G. Backward Inverted Figure of Eight - Flying (2 required variations)	_____	_____
F. Autorotation with Inverted Segment (4 required variations)	_____	_____
I. Advanced Aerobatics		
1. Knife Edge Pirouette (4 required variations)	_____	_____
2. Death Spiral (4 required variations)	_____	_____

Name: _____ IRCHA #: _____ Date: _____

Helicopter(s), Engine & radio used for this Level: _____

Email: _____

Witness #1: _____ IRCHA #: _____ PPP Level: _____

Witness #2: _____ IRCHA #: _____ PPP Level: _____

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