

International Radio Control Helicopter Association
Pilot Proficiency Program
Level IV 4 November 1998



INTERNATIONAL
RADIO CONTROLLED
HELICOPTER
ASSOCIATION

Level IV is an advanced level of proficiency and completion of this level takes the pilot to the level of a pilot capable of performing the beyond the basics of Inverted 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. Complete Level I, II & III
- B. Sustained Inverted Flight (2 required variations)
 - 1. With the helicopter inverted fly at least one (1) clockwise and one (1) counter clockwise circuit around your flying area.
 - 2. The idea is to learn to control the helicopter as it is turning towards you and away from you.
- C. Sustained Inverted Hover (2 required variations)
 - 1. With the helicopter inverted and no more than ten (10) yards/meters above the landing area hover nose out, hold for ten (10) seconds.
 - 2. With the helicopter inverted and no more than ten (10) yards/meters above the landing area hover nose in, hold for ten (10) seconds.
- D. Inverted Pirouettes (2 required variations)
 - 1. With the helicopter inverted and no more than ten (10) yards/meters above the landing area hover nose out, hold for ten (10) seconds.
 - 2. While maintaining a constant altitude use the tail rotor to rotate the helicopter clockwise 90 degrees, hold for ten (10) seconds.
 - 3. While maintaining a constant altitude use the tail rotor to rotate the helicopter clockwise 90 degrees, the helicopter will now be Nose-In, hold for ten (10) seconds.
 - 4. While maintaining a constant altitude use the tail rotor to rotate the helicopter clockwise 90 degrees, hold for ten (10) seconds.
 - 5. While maintaining a constant altitude use the tail rotor to rotate the helicopter clockwise 90 degrees, the helicopter will back to Nose-Out hold for ten (10) seconds.
 - 6. Repeat but rotate the helicopter counter-clockwise.



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Maneuver Description Continued

- E. Inverted Figure of Eight - Flying (2 required variations)
1. While the helicopter is flying straight and level inverted after it passes the pilot make a 270 degree turn away from the pilot, the helicopter will now be pointed directly at the pilot.
 2. After the helicopter is pointing at the pilot, execute a 360 degree turn in the opposite direction. The helicopter will again be pointing directly at the pilot.
 3. After the helicopter is pointing at the pilot again, execute a 90 degree turn; in the same direction as the first 270 degree turn.
 4. This maneuver must be done starting from both left to right (first 270 degree turn to the left, counter-clockwise) and right to left (first 270 degree turn to the left, counter-clockwise).
- F. Two Consecutive Stationary Rolls (4 required variations)
1. With the helicopter hovering Tail-In, add right cyclic and flip the helicopter to inverted continue until the helicopter has completed 2 rolls to the right.
 2. With the helicopter hovering Tail-In, add left cyclic and flip the helicopter to inverted, continue until the helicopter has completed 2 rolls to the left.
 3. With the helicopter hovering Nose-In, add right cyclic and flip the helicopter to inverted continue until the helicopter has completed 2 rolls to the right.
 4. With the helicopter hovering Nose-In, add left cyclic and flip the helicopter to inverted, continue until the helicopter has completed 2 rolls to the left.
- G. 180 Degree Autorotation (4 required variations)
1. Starting from an altitude of no less than twenty (20) meters and on a heading parallel to the flight line, start your Autorotation.
 2. Try for a smooth constant rate of descent directly to a one (1) meter landing circle.
 3. The helicopter must complete a 180 degree turn after the Autorotation has started.
 4. All of the helicopters landing skids must be within the landing circle.
 5. This maneuver must be done starting from the right and from the left of the pilot and the 180 degree turn must be done both clockwise and counter-clockwise from each direction. The pilot may stand anywhere they wish during this maneuver.

Maneuver Description Continued

H. Advanced Aerobatics

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

1. Flips Forward (2 required variations)
 - a. With the helicopter hovering Tail-In, add forward cyclic and flip the helicopter to an inverted Nose-In hover, hold for five (5) seconds.
 - b. From this inverted Nose-In hover add forward cyclic and flip the helicopter back to an upright Tail-In hover, hold for five (5) seconds.
 - c. With the helicopter hovering Nose-In, add forward cyclic and flip the helicopter to an inverted Tail-In hover, hold for five (5) seconds.
 - d. From this inverted Tail-In hover add forward cyclic and flip the helicopter back to an upright Nose-In hover, hold for five (5) seconds.
2. Flips Backward (2 required variations)
 - a. With the helicopter hovering Tail-In, add backward cyclic and flip the helicopter to an inverted Nose-In hover, hold for five (5) seconds.
 - b. From this inverted Nose-In hover add backward cyclic and flip the helicopter back to an upright Tail-In hover, hold for five (5) seconds.
 - c. With the helicopter hovering Nose-In, add backward cyclic and flip the helicopter to an inverted Tail-In hover, hold for five (5) seconds.
 - d. From this inverted Tail-In hover add backward cyclic and flip the helicopter back to an upright Nose-In hover, hold for five (5) seconds.
3. Flips Laterally (4 required variations)
 - a. With the helicopter hovering Nose-Left, add right cyclic and flip the helicopter to an inverted Nose-Left hover, hold for five (5) seconds.
 - b. From this inverted Nose-Left hover add right cyclic and flip the helicopter back to an upright Nose-Left hover, hold for five (5) seconds.
 - c. Repeat but use left cyclic instead of right cyclic.
 - d. With the helicopter hovering Nose-Right, add right cyclic and flip the helicopter to an inverted Nose-Right hover, hold for five (5) seconds.
 - e. From this inverted Nose-Right hover add right cyclic and flip the helicopter back to an upright Nose-Right hover, hold for five (5) seconds.
 - f. Repeat but use left cyclic instead of right cyclic.
4. Rolling Circle (4 required variations)
 - a. Fly a clockwise circle while rolling the helicopter to the right.
 - b. Repeat flying a clockwise circle, but this time rolling the helicopter to the left.
 - c. Fly a counter-clockwise circle while rolling the helicopter to the right.
 - d. Repeat flying a counter-clockwise circle, but this time rolling the helicopter to the left.

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Maneuver Description Continued

H. Advanced Aerobatics Continued

5. Tumbles (8 required variations)

- a. With the helicopter hovering Tail-In pull back cyclic, and work the collective to complete at least two (2) full back tumbles while maintaining a constant altitude and heading. Stop the helicopter in a stable Tail-In hover.
- b. Repeat; push forward cyclic completing a minimum of two (2) forward tumbles.
- c. With the helicopter hovering Nose-In pull back cyclic, and work the collective to complete at least two (2) full back tumbles while maintaining a constant altitude and heading. Stop the helicopter in a stable Nose-In hover.
- d. Repeat; push forward cyclic completing a minimum of two (2) forward tumbles.
- e. Fly straight and level from left to right when the helicopter is just about in front of the pilot pull back cyclic, adjust the collective to maintain constant altitude and speed and hold the back cyclic until the helicopter completes one (1) full traveling tumbling back flip to upright. Fly away straight and level.
- f. Repeat but start flying from right to left.
- g. Fly straight and level from left to right when the helicopter is just about in front of the pilot add extra collective momentarily, simultaneously push forward cyclic, and adjust the collective to maintain constant altitude and speed and hold the forward cyclic until the helicopter completes one (1) full traveling tumbling front flip to upright. Fly away straight and level.
- h. Repeat but start flying from right to left.

Optional non-required variations: The following suggested variations are not required to reach this level of the Pilot Proficiency Program, but are listed here as suggestions for the pilot to learn additional orientations and improve their overall flight skills. Stationary tumbles with the nose pointing left, and right. Stationary and traveling tumbles from inverted.

International Radio Control Helicopter Association
Pilot Proficiency Program
Level IV 15 April 1999

	<u>Witness #1</u>	<u>Witness #2</u>
A. Completed all Previous Levels	_____	_____
B. Sustained Inverted Flight (2 required variations)	_____	_____
C. Sustained Inverted Hover (2 required variations)	_____	_____
D. Inverted Pirouettes (2 required variations)	_____	_____
E. Inverted Figure of Eight - Flying (2 required variations)	_____	_____
F. 2 Consecutive Stationary Rolls (4 required variations)	_____	_____
G. Autorotation - 180 Degrees (4 required variations)	_____	_____
H. Advanced Aerobatics		
1. Flips Forward (2 required variations)	_____	_____
2. Flips Backward (2 required variations)	_____	_____
3. Flips Laterally (4 required variations)	_____	_____
4. Rolling Circle (4 required variations)	_____	_____
5. Tumbles (8 required variations)	_____	_____

Name: _____ IRCHA #: _____ Date: _____

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

Email: _____

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

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

*** Please keep a copy of this for your records ***

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