

3D Masters Set Manoeuvres 2005



Proposed Set Manoeuvres for 3D Masters 2005, subject to confirmation on the official entry form January 2005.

No.	'k'	Manoeuvre	Judges Notes
1	1	Backward Loop	The backward loop should be entered from level backward flight and the judges will be awarding maximum scores to examples that show good symmetry and positioning.
2	1	Backwards Rolls (2)	The 2 backward rolls should be entered from medium speed backward flight and maximum scores will be achieved from good positioning and accuracy.
3	1	Inverted Pirouette (2)	The 2 inverted pirouettes will be entered from a stationary hover and maximum points will be awarded for slow to medium speed pirouettes, where the model remains perfectly stationary throughout.
4	1	Outside Loop	The outside loop will be performed from medium speed, upright forward flight and from the top of the manoeuvre. Maximum points will be given for a symmetrical well-positioned manoeuvre.
5	1	Pie Dish	The helicopter must prescribe remote circuits centred on the pilot. The model should maintain an acute angle while flying sideways at constant speed, altitude and attitude. There must be at least 4 complete revolutions, skids in, skids out, nose up or nose-down.
6	1	Stationary Forward / Backward Flips (2)	The stationary forward / backward flips will be marked on good positioning and consistency, not necessarily the lowest altitude.
7	1	Figure 8 Inverted Circuit	The model should describe a uniform Figure 8 at a slow pace with consistent height and correctly centered
8	1.5	Tumbling Loop	Continuous Forward- or Backward tumbles while the model describes a Forward or Backward Loop in the sky. The Loop should be centred and the rate of tumbling should be uniform.
9	1.5	Sideways Aileron-rolling Loop	The Loop may be entered from the top or the bottom. The model should prescribe a Loop while aileron-rolling. The Loop should be centred and the rate of rolling should be uniform.
10	1.5	Inverted Nose-in Circuit	The circuit should be flat and slow with consistent height and properly centred on the pilot and judges.
11	1.5	Inverted Backward Loop	This manoeuvre will be entered from backward inverted flight and maximum scores will be given for accuracy and symmetry.
12	1.5	Knife Edge Pirouette	The knife edge pirouette should be entered from medium / fast-forward flight and top scores will be generated from accuracy and good positioning.
13	1.5	Pirouetting Roll / Flip (2)	The 2 pirouetting rolls / flips should be executed as a travelling manoeuvre continuously with no hesitation.
14	1.5	Snake	This snake-like manoeuvre should be performed along the flight line and consist of at least 4 joined crescents, tailboom-horizontal, switching skids-in to skids-out and vice-versa between crescents. Consistent height, size and speed should be maintained.
15	2	Backward Rolling Circle	The backward rolling circle should consist of a continuous roll (in either direction), while the model travels in a remote circle in front of the pilot. Maximum points will be awarded for a well positioned example, with a consistent rate of roll, good height retention and a symmetrical remote circle.
16	2	Inverted Pirouetting Figure 8	The inverted pirouetting figure 8 can be performed at any pirouette rate. Maximum points will be awarded for a well-placed manoeuvre, with a consistent rate of rotation and a symmetrical figure 8.
17	2	Pirouetting Loop	The Pirouetting Loop can be performed at a variety of pirouette rates, but well positioned symmetrical examples, with a constant rate of rotation will be awarded the most points.
18	2	Pirouetting Outside Loop	The Pirouetting outside loop can be entered from either the top or bottom of the manoeuvre. Highest scores will be given for well-positioned symmetrical examples with a constant rate of rotation.

19	2	Sustained Chaos	The chaos should be sustained for a minimum of 10 seconds, up to a maximum of 30 seconds. Maximum scores will be awarded for consistent stationary examples.
20	2	Tumbling Circuit	The tumbling circuit can be performed with either forward or backward tumbles. Top marks will be given for good positioning and accuracy, with a consistent rate of tumbling.
21	2	Waltzer - Pie-Dish with Multiple Aileron Rolls	A 'pie-dish' is a remote circuit flown with the tailboom of the helicopter vertical (or near-vertical), skids in or out. In the Waltzer, the model should perform at least 2 revolutions while continuously aileron-rolling.
22	2	Detonator - Ascending & Descending Funnel	A funnel is a cone-shaped manoeuvre performed by climbing or descending during a remote circuit flown with the tailboom of the helicopter vertical (skids in or out). This manoeuvre requires a climbing funnel followed by a descending funnel with a reversal from skids-in to skids-out (or vice versa) at the apex.
23	2.5	Pirouetting Metronome	The helicopter must metronome back and forth approximately 45° either side of vertical with least 6 pitch reversals and at least one complete pirouette during each traversal. Consistent height, pirouette rate and reversal rate should be maintained. Higher points will be awarded for 'stationary' examples with consistent smooth pirouettes.
24	2.5	Horizontal Backwards Rolling 8	The model prescribes a remote figure 8 while moving backwards and continuously rolling along the axis of the tailboom
25	2.5	Metronoming Horizontal 8	With the model oriented tailboom vertical, a remote horizontal 8 is prescribed with a series of elevator/pitch-activated metronomes
26	2.5	Pirouetting Vertical 8	The helicopter should prescribe a vertical 8 while executing a continuous series of pirouettes, in effect two pirouetting loops, one inside, the other outside.
27	2.5	Pirouetting Wall of Death	The model should be made to prescribe at least two remote knife-edge circles while pirouetting continuously.
28	2.5	Drunken Sailor - Backwards aileron-metronoming horizontal 8	With the tailboom horizontal and the helicopter moving backwards, the machine is made to prescribe a horizontal figure 8 while height is maintained by a series of aileron/pitch metronomes.
29	3	Big Ben - Metronoming Clock Face	The model should be held in a sustained metronome directly in front of the judges with its nose vertical, the Judges viewing the rotor disk as a clock face. The model should then be made to rotate yawing clockwise prescribing the 12 points of a clock-face, each point defined by a 'tick' of the metronome. Start and finish of the manoeuvre are the two 12 o'clock points.
30	3	Pirouetting Globe	This is a succession of Pirouetting Loops, but with the axis of the loop rotating by degrees for each loop until an imaginary globe in the sky has been prescribed. Exit from the manoeuvre should be the same as the point of entry, but with the model moving in the opposite direction. The more loops, the better.

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