



A format for all pilots and organizers

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Set Manoeuvres

These set manoeuvre lists are organic and as such will grow as new manoeuvres are created/thought up. We will look at adding expiry dates to manoeuvres as and when required but you will have plenty of notice of this.

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3D Format Set Manoeuvres Revision History

2018: Added 3 new set manoeuvres, 1 at K factor 3.5, and 2 at the NEW K factor 4.5.

2018: Increased K factor of Waynes World to K4.5.

2018: Removed Tail first Loop.

2018: Removed Inverted Tail First Loop.

2015: Updated Pogo set manoeuvre description.

2014: Added several new manoeuvres to the list at various K factor levels.

2014: Removed Krack Kaos.

2014: Re-assigned K-Factors to a handful of manoeuvres that were previously too low K or too high K, and introduced K4 manoeuvres.

2012: Removed the standard 12 point tic-toc to avoid duplication.

2012: Several new manoeuvres from K2 upwards added.

Key to colour highlights below

Yellow – K Factor has changed

Blue – Set Manoeuvre name and/or description has been updated

Green – Brand new Set Manoeuvre

Set Manoeuvres

| Manoeuvre Number | Manoeuvre Name | Manoeuvre K Factor | Manoeuvre Description |
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| 1 | Moving Backflip | 1 | The helicopter should travel forwards along the flightline and perform a backwards elevator flip. The manoeuvre should be flown at medium speed while maintaining constant height, direction and speed. |
| 2 | 2 | 1 | The helicopter should travel backwards at medium speed and perform two |

| | Backwards Hesitation Rolls | | aileron rolls. Both rolls should contain 4 hesitation points at 90 degrees around the roll. |
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| 3 | 540 Reverse | 1 | This manoeuvre consists of 2 inverted stationary 540 degree pirouettes. The pirouette direction should reverse after the first 540 pirouette is completed. The manoeuvre should begin and end nose in, in a stationary hover. |
| 4 | Stationary Tic Tocks | 1 | The helicopter should perform a continuous tic-tock with 6 pitch-reversals. The manoeuvre will be symmetrical about the centre-line (the helicopter being side-on) and of consistent height and speed. The helicopters tailboom can be vertical or horizontal. |
| 5 | Funnel | 1 | The helicopter should prescribe at least 4 remote circuits while being symmetrical about the centre-line. The helicopter should maintain a steep angle while flying sideways at constant speed and altitude. The manoeuvre can be performed skids in or skids out with the nose up or nose-down. |
| 6 | Inverted 8 | 1 | The helicopter should describe a figure 8 at walking pace with consistent height and the crossover point being on the centreline. |
| 7 | Flipper | 1 | The helicopter should perform continuous forward or backward flips while maintaining consistent height and position. |
| 8 | Knife Edge Pirouette | 1 | The helicopter should travel along the flightline in medium to fast forward flight, roll to present the helicopter disc face on and then perform the pirouette while maintaining consistent height. The pilot should aim to position to pirouette portion of this manoeuvre on the centre-line. |
| 9 | Flipping Loop | 1.5 | The helicopter should perform continuous forward or backward flips while prescribing a loop. The loop should be as round as is practical, symmetrical about the centre-line, and have the same entry and exit points. The flip rate should be constant. |
| 10 | Rainbow Square | 1.5 | The helicopter should perform a square circuit created from a series of tail-down Rainbows each finishing with a 90 degree pirouette before starting the next Rainbow. There should be minimal hesitation at the pirouettes. |
| 11 | Kaos | 1.5 | The helicopter should perform continuous kaos for a minimum of 10 seconds and up to a maximum of 30 seconds. It should be stationary in front of the pilot on the centreline. |
| 12 | Inverted flat funnel | 1.5 | The helicopter should fly an inverted remote circuit with the nose constantly pointing at the centre of the circuit. It should be of a consistent speed and height. |
| 13 | Wave | 1.5 | The helicopter should fly along the flight line with the tail boom horizontal making a horizontal wave shape by linking crescents together as it progresses. There should be at least four crescents joined together in the manoeuvre and the helicopter should maintain consistent height and speed throughout. |
| 14 | Rainbow Roll | 1.5 | The helicopter should perform six rainbows with an aileron roll at the mid point of each Rainbow. Each Rainbow should be the same size and shape with stops at the same point each time and the overall rainbow equally centred. The aileron roll should be positioned symmetrically around the centreline within the rainbow. |
| 15 | Nose First Rolling Loop | 1.5 | The helicopter should perform a minimum of two rolls while flying around a loop. The loop should be circular and symmetrical around the centreline. The rolls should be at a consistent speed. |
| 16 | Death Dive | 1.5 | The Death Dive should start at least 50 metres high and should see the helicopter falling knife-edge while performing elevator rolls. The descent should be vertically down the centreline and the exit point should be inverted and as low as the pilot is comfortable with. |
| 17 | Piro Roll / Flip | 1.5 | The helicopter will perform two pirouetting rolls / flips as a continuous travelling manoeuvre with no hesitation through the manoeuvre. |
| 18 | Flipping Circuit | 1.5 | The helicopter will flip forwards or backwards and perform a remote circuit which is symmetrical about the centreline and exhibits consistent flip rate and good height control. |
| 19 | K1.5 Auto | 1.5 | K1.5 Auto will see the helicopter perform an unpowered descent containing a 360 degree Aileron Roll. There should be a minimum fall of 10 metres before |

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| | | | starting the aileron roll. Consistent height loss and descent speed are required through the descent and the landing should be as close as possible to a marker positioned in front of the pilot on the centreline. |
| 20 | Tail First Rolling Circuit | 2 | The helicopter should perform a backwards horizontal circuit with continuous aileron rolls. The manoeuvre should be symmetrical about the centreline and show consistent height, speed and roll rate. |
| 21 | Inverted Piro 8 | 2 | The helicopter should perform a figure 8 while pirouetting and inverted. The rate of pirouette is up to the pilot. The speed of the model moving around the figure 8 should be constant. |
| 22 | Piro Vertical Circuit | 2 | The helicopter should perform a vertical circuit while pirouetting. The entry and exit can be at the top or the bottom of the circuit. The circuit should be round and symmetrical about the centre-line. The pirouette rate should be constant. |
| 23 | Piro Tic Tocks | 2 | The helicopter should tic tock at least 3 times, making a minimum of 6 pitch reversals, with at least one complete pirouette each way. The manoeuvre should be symmetrical about the centre-line with consistent height and pirouette rate. |
| 24 | Pie Dish of Funnels | 2 | The helicopter should perform a series of funnels linked together to form the larger overall shape of a funnel. Each funnel is a remote circuit with the helicopter pointing vertically up or down and skids in or out. There should be a minimum of 2 funnels contained within the larger funnel shape. The manoeuvre should be symmetrical about the centre-line showing consistent height and aileron roll rate through the funnels. |
| 25 | Flipping 8 | 2 | The helicopter should perform a series of forwards or backwards flips in the shape of a figure 8. The figure 8 should be horizontal and symmetrical about the centre-line showing consistent height and flip rate. |
| 26 | Kaos Vertical Circuit | 2 | The helicopter should perform a series of Kaos manoeuvres linked together to form a vertical circuit. The circuit should be symmetrical about the centre-line and should include lots of fast Kaos. |
| 27 | Diamond | 2 | 2 X Vertical Diamonds, one flown clockwise the other anticlockwise. The model prescribes the shape of a equal sided Diamond. Starting from a side on hover. A travelling forward half flip is used to travel the model both up and forwards to the first position, where it briefly hesitates whilst continuing to rotate until Pitch is used to travel the model both upwards and backwards to the centre line, where it again hesitates briefly while continuing to rotate until a further Pitch application travels the model to the next point, etc. After returning to the Start position the Diamond is flown in the reverse direction. |
| 28 | Dolphin | 2 | The helicopter should perform a tail down tic-tocking horizontal circuit. The skids should lead the model around the manoeuvre. There should be at least 12 tic toes around the circuit (3 per quarter minimum). The model should maintain consistent height and speed around the manoeuvre, and should be symmetrical about the judges centreline. |
| 29 | Piro hurricane | 2 | The helicopter should perform at least two horizontal knife edge circuits while continuously pirouetting. The manoeuvre should be symmetrical about the centreline and show good height and shape with a consistent pirouette rate. |
| 30 | Rolling Vertical Circuit | 2 | The helicopter should perform a single Aileron Rolling Loop. The roll direction should be the same throughout the loop. The entry to and exit from the manoeuvre should be on opposite sides of the loop and should be at the same height. The Manoeuvre should be centered on the flight line and show good round shape with consistent speed and a lack of deviation from the flight path through the loop. |
| 31 | K2 Auto | 2 | K2 Auto will see the helicopter perform an unpowered descent containing a 360 degree aileron roll followed by a further half roll to inverted and ending with a forward elevator flip which should be as low as the pilot is comfortable with. There should be at least 10 metres of descent in autorotation before the first roll begins. Consistent height loss and descent speed are required through the descent and the landing should be as close as possible to a marker positioned in front of the pilot on the centreline. |
| 32 | Tail First Rolling 8 | 2.5 | The helicopter should perform a backwards horizontal figure 8 with continuous aileron rolls. The manoeuvre should be symmetrical about the centreline and |

show consistent height, speed and roll rate.

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| 33 | Rolling split 8 | 2.5 | The helicopter should perform a forward rolling horizontal circuit which is split in half by performing a forward rolling vertical circuit at the furthest point away of the horizontal rolling circuit. The manoeuvre should be entered closest to the pilot on the horizontal circuit. It should be symmetrical about the centreline and show consistent height, circuit shape, speed and roll rate. |
| 34 | Piro Vertical 8 | 2.5 | The helicopter should perform a vertical figure 8 while continuously pirouetting. The outcome should look like an inside and an outside pirouetting loop stacked on top of each other. It should be symmetrical about the centreline and show good shape, and consistent pirouette rate. |
| 35 | Piro Tic Tocking Vertical Circuit | 2.5 | The helicopter should perform a vertical circuit made up of pirouetting tick toes with the disc facing the pilot and judges. It should be symmetrical about the centreline and show good shape, and consistent pirouette rate. |
| 36 | Pie Dish of Piro Funnels | 2.5 | The helicopter should perform at least 4 pirouetting funnels joined together to form one larger overall pie dish. |
| 37 | Backwards Tic Tocking Horizontal 8 | 2.5 | The helicopter should perform a backwards aileron tick tocking figure 8. The manoeuvre should be symmetrical about the centreline with the centre point of the figure 8 in front of the pilot while maintaining constant height. |
| 38 | Piro Wave | 2.5 | The helicopter should perform a pirouetting wave which is made up of several connected arcs along the flightline with a 180 degree turn at the end of the first pass up the flightline followed by the same number of arcs on the second pass back down the flightline. The manoeuvre should have at least 4 arcs on each pass. The arcs should be the same size, while maintaining consistent height and speed. The pirouette rate should also be consistent throughout. |
| 39 | Reversing Piro Tic Tock | 2.5 | The helicopter should tic tock at least 3 times, making a minimum of 6 pitch reversals, with at least two complete pirouettes each way and a reversal of the pirouette direction at each pitch reversal. The manoeuvre should be symmetrical about the centre-line with consistent height and pirouette rate. |
| 40 | Tic Tocking Vertical Circuit | 2.5 | The helicopter should perform a vertical circuit made up of tick tocks with the nose pointing into the centre of the circuit throughout. The manoeuvre should start at the top of the vertical circuit with the nose pointing down towards the centre and should work it's way tick tocking clockwise until the circuit is complete. The manoeuvre should be symmetrical about the centre-line. |
| 41 | Rainbow Roller | 2.5 | The helicopter should perform two square circuits made up of alternating aileron and elevator rainbow rolls with minimal hesitation at each corner. The manoeuvre begins from left to right nearest the pilot in the square circuit with either an aileron or an elevator rainbow roll. Aileron and Elevator rainbow rolls should alternate around each side. If the first side is an Aileron rainbow roll, the second side is an elevator rainbow roll with a forward or backwards elevator flip at the mid point. The third side (furthest away from the pilot going right to left) is the same as the first side with the tailboom opposite to it's position on the first side, and the fourth side is the same as the second side, but with the opposite flip/roll rotation to that used on the first side, to complete the square circuit. The manoeuvre should be symmetrical about the centre-line with the four sides being equal in length and the rainbow rolls attaining equal height on all four sides. |
| 42 | Magic Roundabout | 2.5 | Flown at medium speed this is a combo style manoeuvre whereby the model prescribes 4 individual circles within one large circle. Each small circle consists of one funnel but off a differing orientation. The model is to change orientation by 90 deg between each circle. For example, backwards Hurricane followed by an upright Tail down funnel, then forward Hurricane and then finally a nose down funnel. Transitions are to be fluid and morph smoothly throughout. Manoeuvre is complete when helicopter passes the Pilot after completing one full revolution. |
| 43 | Pogo | 2.5 | The model should perform a vertical climb and descent of at least 5 metres |

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| | | | while pirouetting. At the top of the climb the helicopter should change orientation (normal to inverted, or vice-versa) through a single piro-flip before descending back down to the bottom of the manoeuvre. There is no change of orientation at the bottom of the pogo. At least 3 ascents and descents should be made. Each ascent and descent should be quick, as if the helicopter is bouncing up and down like a pogo stick. The helicopter should be positioned on the judges centre-line where the judges will be looking for a vertical line, a constant pirouette rate and consistent heights attained throughout the manoeuvre. |
| 44 | Starburst | 2.5 | A five pointed star shape should be created by the helicopter performing a series of long tic-tocks around a remote point in front of the pilot. The helicopter needs to use the same central point each time, but the outer points should be distanced apart to form the points of the star shape. The helicopter can be tail up or down and skids in or out. The centre point of the Starburst should be positioned on the judges centre-line with equal spacing of the star points around the manoeuvre while maintaining consistent height and diameter of the Starburst. |
| 45 | Pole Dancer | 2.5 | The helicopter should perform a series of tic-tocks that are tightly held to a central point while the helicopter moves through 360 degrees horizontally around that point. The helicopter can be tailboom vertical or horizontal and skids in or out. The helicopter should be positioned on the judges centre-line where the judges will be looking for good height control and being tight around the "pole". |
| 46 | Piro 4 Leaf Clover | 2.5 | The helicopter should perform a vertical figure 8 and a vertical sideways 8 joined together to create a four leaf clover shape. Each circle of each figure 8 is performed while pirouetting and each one should lead into the next. The manoeuvre starts with the helicopter pirouetting into the middle of the vertical figure 8 and then doing the top of the vertical eight as an inside piro loop. That then goes into the bottom of the vertical 8 as an outside piro loop, then the right side of the vertical sideways 8 as an inside piro loop, and finally the left side of the vertical sideways 8 as another outside piro loop. The manoeuvre should be symmetrical about the centre-line. |
| 47 | Crown Prince | 2.5 | Model will perform 9 (nine) mini stall turns around a horizontal circuit. The start and end point of the circuit should be in front of the pilot, meaning the first and last mini stall turn will be performed at that location. Each quarter of the circuit should contain two peaks. Thinking of this as a clockface, one peak will be at 6:00, the next at 4:30, the third at 3:00 and so on. At the first peak (6:00 on the clock face, closest to the pilot), the model should perform an aileron roll. At the second peak (4:30 clockface) the model should perform a half pirouette (model pirouettes 180 degrees), at the third peak (3:00 clockface) the model should roll again, etc. The manoeuvre finishes with the ninth peak overlaid on the position of the first, and is a roll. Model exits the manoeuvre in upright forward flight. The manoeuvre should be symmetrical about the centreline, and each peak should attain a consistent height, with uniform roll rates and pirouette speeds where appropriate. |
| 48 | Pirouetting Double Loop | 2.5 | Model flies in upright flight straight and level to the centreline, where it begins to pirouette. It travels a little further (approx 20 feet – depending how big you perform the overall manoeuvre) before performing an inside loop to a 45 degree inverted descent across the centreline. When it reaches the entry height of the manoeuvre it then performs an outside loop to a 45 degree upright descent across the centreline again. The manoeuvre should be symmetrical about the centreline, With equal sized pirouetting loops. Pirouette rate must be consistent throughout. Entry and exit height should be the same. |
| 49 | Qube | 2.5 | Model will perform two diamonds offset by 90 degrees to each other. The idea being to describe the corners of a cube which is stood up on one corner. The first diamond will be described using elevator, while the second diamond will be described using aileron. The model should always be side-on throughout the manoeuvre. Begin by hovering on the centreline at a reasonable distance away to allow for the second diamond (which will be performed straight down the centreline – i.e. towards and away from the pilot). The first diamond is an elevator diamond, performed left to right (or right to left as is your preference), |

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| | | | which should end at the starting position, and then continue by performing an aileron diamond along the judges centreline. The direction of flight is not important (forwards or backwards around either diamond) but both diamonds must describe an upended square, and the top and bottom points of both diamonds must hit the same point. Good shape is key here. Model exits the manoeuvre in a controlled hover at the starting point. |
| 50 | K2.5 Auto | 2.5 | Auto number 3 will see the helicopter perform an unpowered descent containing a pirouetting flip at the start, followed by a 360 degree aileron roll followed by a further half roll to inverted and ending with a forward elevator flip which should be as low as the pilot is comfortable with. There should be at least 10 metres of descent in autorotation before the pirouetting flip begins. Consistent height loss and descent speed are required through the descent and the landing should be as close as possible to a marker positioned in front of the pilot on the centreline. |
| 51 | Piro Ball | 3 | The helicopter should perform a succession of Pirouetting Loops, but with the axis of the loop rotating by at least 30 degrees for each loop at the top or bottom crossover point until an imaginary ball in the sky has been defined. The entry to and exit from the manoeuvre should be on the same side of the ball but with the helicopter moving in the opposite direction. The Manoeuvre should consist of at least 4 pirouetting loops to build the ball with each loop containing at least 2 pirouettes. It should be centered on the flight line and show good round shape with consistent speed through the loops. |
| 52 | Piro Death Dive | 3 | The helicopter should perform a vertical descent with the rotor disk vertical and the helicopter rotating on a vertical axis while pirouetting. The manoeuvre should be centered on the flightline and descend at least 50 metres straight down with the pullout at the bottom being as low as the pilot is comfortable with. |
| 53 | Piro Tic Tocking Horizontal Circuit | 3 | The helicopter should perform a horizontal circuit flown at constant height with the helicopter performing continuous pirouetting tic tocks. The entry to the manoeuvre can be from a travelling or stationary pirouetting tic tock. The manoeuvre should be symmetrical about the centreline and show good height and shape with a consistent pirouette rate. |
| 54 | Piro Tic Tocking Skids In-Out Vertical Circuit | 3 | The helicopter should perform a vertical circuit made up of pirouetting tick tocs with the disc facing the pilot and judges for the first quarter of the circuit. It should then piro-flip to skids-in and continue through the second quarter of the circuit. After another piro flip back to disc-in, the third quarter is flown, and one more piro flip puts the heli skids in to complete the fourth quarter of the circuit. The manoeuvre should be symmetrical about the centreline and show good shape, equal tic-tocs in each quarter, and consistent pirouette rate. |
| 55 | Reversing Piro Tic Tocking Vertical Circuit | 3.5 | The helicopter should perform a vertical circuit made up of pirouetting tick tocs with the disc facing the pilot and judges. It should be symmetrical about the centreline and show good shape, and consistent pirouette rate. The pirouette direction must reverse after each tic tock (in – out – reverse – repeat). |
| 56 | Haymaker | 3.5 | The helicopter should perform a backwards horizontal figure eight, with multiple consecutive 4 point hesitation rolls with knife edge 360 pirouettes at every knife edge. The pirouette direction should reverse each time. The figure eight should be symmetrical about the centreline and show good shape and height. |
| 57 | In N Out 12 Point Tic Tock | 3.5 | The helicopter should enter the manoeuvre in forward horizontal flight with a pull-up to vertical followed by a quarter roll to present the rotor disk to the judges. As the model stops climbing the helicopter should perform a 12 Point Tic Tock. This should be immediately followed by a tail slide, quarter roll and pull-out to leave the manoeuvre from the opposite side to entry and at the same height but tail first. |
| 58 | Reversing Pirouetting Vertical Diamond | 3.5 | The model should perform one vertical Diamond, flown clockwise, starting at the bottom of the Diamond. Each leg of the Diamond should be travelled while performing pirouetting flips. At the end of each leg the pirouette direction should be reversed. The model should exit at the same point as the entry. The diamond's four legs must be equal in length, contain the same number of |

pirouetting flips, and the diamond should be positioned on the judges centre-line.

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| 59 | In and Out Tic Tocking Vertical Circuit | 3.5 | The helicopter should perform a vertical circuit made up of tick tocks with the nose pointing into the centre of the circuit throughout. The manoeuvre should start at the top of the vertical circuit with the nose pointing down towards the centre of the circuit, and should work it's way tick tocking clockwise around the circuit and changing between disc-in and skids-in every 1/4 of a circuit until the circuit is complete. The manoeuvre should present a round circle and be symmetrical about the centre-line. |
| 60 | K3.5 Auto | 3.5 | Manoeuvre begins with the engine at idle, or motor off. The model will perform one reversing piro flip (one piro flip in each direction), followed by two aileron tic-tocs into a tail-first inverted descent (tail down, skids in). During the descent the model should perform a full aileron roll (360 degrees) and finally perform a half piro-flip (from inverted to the right way up) before landing. |
| 61 | Reversing Piro Wave | 4 | The helicopter should perform a pirouetting wave which is made up of several connected arcs along the flightline with a 180 degree turn at the end of the first pass up the flightline followed by the same number of arcs on the second pass back down the flightline. The pirouette direction should be reversed after each arc. The manoeuvre should have at least 4 arcs on each pass. The arcs should be the same size, while maintaining consistent height and speed. The pirouette rate should also be consistant throughout. |
| 62 | Reversing Piro Ball | 4 | The helicopter should perform a succession of Pirouetting Loops, each one having an opposite pirouette direction to the one before it. The axis of the loop should rotate by at least 30 degrees for each loop at the top or bottom crossover point until an imaginary ball in the sky has been defined. The entry to and exit from the manoeuvre should be on the same side of the ball but with the helicopter moving in the opposite direction. The Manoeuvre should consist of at least 4 pirouetting loops to build the ball with each loop containing at least 2 pirouettes. It should be centered on the flight line and show good round shape with consistent speed through the loops. |
| 63 | Quarter To Eight | 4 | Model will describe a vertical figure of eight while performing aileron tic-tocs all the way around the manoeuvre. Model enters in upright forward flight and performs a quarter roll to knife edge tic-tocs. Model then performs a half tic-toc loop with the nose of the model leading the way. On the top of the loop (half way through the vertical figure eight) the model performs a half pirouette, and then continues upwards with another half tic-toc loop with the tail leading the way. On reaching the top of the figure eight, the model performs a half roll. It completes the upper tic-toc loop with the tail in the flight direction. At the half way point of the figure eight descent, the model performs another half pirouette and completes the lower tic-toc loop with the nose in the flight direction. Model exits in upright forward flight. During the manoeuvre the longitudinal axis of the model should always follow the flight path. The manoeuvre should be symmetrical and positioned about the centreline. There should be the same number of tic tocs in each quarter of the manoeuvre. |
| 64 | Kings Crown | 4 | The model will perform a minimum of 5 mini stall turns around a circuit, with a maximum of 9. They should be equally spaced around the circuit. The whole manoeuvre is performed pirouetting. After each peak, the pirouette direction is reversed. The manoeuvre should be symmetrical about the centreline, and each peak should attain a consistent height, with consistant pirouette speeds. |
| 65 | Reversing Pirouetting Rainbow X | 4 | The Model hovers over the centre line at a 45 degree offset angle to the pilot. It then begins the manoeuvre with a rainbow that follows an arched path of at least 10 metres in length. During the rainbow the model performs one pirouette in each direction. The reversal of the pirouette should be at the top of the rainbow. Another rainbow with pirouette reversal takes the model back to its starting point. The same manoeuvre is then performed 90 degrees around from the first rainbow, and then twice more to form an X if viewed from above. No pirouettes should be performed when in the centre of the manoeuvre while hovering. |
| 66 | Waynes World | 4.5 | The helicopter should perform a succession of Aileron Rolling Loops. Each loop should contain half a loop of left aileron rolls and half a loop of right |

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| | | | aileron rolls. The roll direction should be the same on every loop made, so if the first half of the first loop uses left aileron, the first half of all loops must use left aileron. The axis of each loop should be rotated by at least 30 degrees for each loop at the bottom crossover point until an imaginary ball in the sky has been defined. The entry to and exit from the manoeuvre should be on the same side of the ball but with the helicopter moving in the opposite direction. The Manoeuvre should consist of at least 4 rolling loops to build the ball with each loop containing at least 4 rolls (minimum of 2 in each roll direction). It should be centered on the flight line and show good round shape with consistent speed through the loops. |
| 67 | Pirouetting and Rolling Upright Horizontal Eight | 4.5 | The helicopter should perform an upright horizontal figure eight made of a pirouetting vertical half loop on each end, and joined together by rolling straight sections. The pilot should fly across the centreline and after their chosen distance, begin a vertical pirouetting half loop. At the top, the model should begin rolling diagonally down and across the centreline towards the entry point (at the bottom) of the second vertical pirouetting half loop. This time the pirouette direction should be reversed (opposite direction to the first pirouette). At the top of the pirouetting half loop the model should begin rolling again, in the opposite direction to the first rolling section, while travelling downwards, and across the centreline again to return to the start point of the manoeuvre. The crossover point should be on the centre line and the vertical half loops should be symmetrical to each other in size and shape. The manoeuvre can be flown starting from either direction. |
| 68 | Head Banger | 4.5 | The helicopter should perform two flat horizontal diamond shapes, the second one tracing the path of the first, with the helicopter starting nose in, disc up at the point of the diamond nearest the pilot. The helicopter should perform a half roll to the first point of the diamond, where the model will end inverted with tail pointing to the centre. Half roll again to the second point, with the model ending upright, tail toward the centre, and repeat this until you reach the starting point, where the model will end upright, tail toward the centre again. Then the model performs the second diamond over the same path as the first, by performing one and a half rolls in each quarter of the diamond. Each quarter, the roll direction should be reversed. The model should be centered and maintain the same height in all transitions. The tail of the helicopter will always be pointing to the centre of the diamond as you fly around it. |

Grass Roots Set Manoeuvres

| Manoeuvre Number | Manoeuvre Name | K Factor | Manoeuvre Description |
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| 1 | Hovering T | 1 | A hovering T shall be flown with a 3 second pause at each point |
| 2 | Hovering M | 1 | A hovering M shall be prescribed with skids at eye level. 3 second hover at each point |
| 3 | Staged Hover 5, 10, 15ft | 1 | The model will hover at 3 heights, 5, 10 and 15ft with a 3 second pause at each point. |
| 4 | Side On Hover | 1 | The model shall hover for 10 seconds with steady control of drift. |
| 5 | Level Pass both directions | 1 | A forward flying pass shall be flown with the same speed and height in both directions |
| 6 | Large Circle | 1.5 | A large (50ft) forward walking speed circle shall be performed with skids at eye level |
| 7 | Hovering Vertical Top Hat | 1.5 | The model shall perform a top hat manoeuvre with a 3 second pause at each hover point. To be performed slowly with a 3 second pause at each point. |
| 8 | 180 Stall Turn | 1.5 | Performed to the left or right at comfortable height with the turn away from the flightline. |
| 9 | Nose In Hover | 1.5 | Perform a nose in hover with skids at eye level for 10 seconds. |
| 10 | Loop | 1.5 | A loop performed at medium speed with a consistent entry and exit height. |

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| 11 | 50ft Auto | 2 | This autorotation be performed in any format in a safe manner with a controlled landing |
| 12 | Travelling Aileron Roll | 2 | Axial travelling roll and controlled speed. |
| 13 | Vertical Triangle | 2 | 3 second pause at each hovering point. No piro in this manoeuvre. |
| 14 | Reverse Side on Hover | 2 | 10 second pause to each side with a 180deg piro to change direction. |
| 15 | 540 deg stall turn | 2 | Performed to the left or right at comfortable height with a turn and half away from the flightline. |
| 16 | Figure of 8 | 2.5 | The model shall prescribe a figure of 8 pattern flown slowly in hover conditions. |
| 17 | Remote Tail in Circle | 2.5 | Flown under hover conditions, with the model prescribing a circle, with the tail pointing constantly to a centre point. |
| 18 | 45 degree Descent | 2.5 | Steady descent at consistent rate to a hover in front of the pilot |
| 19 | Tick Tock | 2.5 | To be completed side on or head on. 3 repetitions |
| 20 | Double stall turn | 2.5 | Left and right hand sides with turn away from the flightline. |
| 21 | 3 stationary elevator flips | 3 | Completed at a safe height with consistent height control and flip about the mainshaft of the aircraft. |
| 22 | Remote nose in circle | 3 | Flown under hover conditions, with the model prescribing a circle, with the nose pointing constantly to a centre point. |
| 23 | Inverted level flypast | 3 | Pass of 50ft flown forwards or backwards at controlled height and speed |
| 24 | Mini Rainbow | 3 | Controlled height approx 20ft wide with smooth changeovers. 2 each side. |
| 25 | Reverse Backward Circles | 3 | Flown slowly in hover with consistent height control. |
| 26 | Travelling double roll | 3.5 | Consistent height and speed |
| 27 | Travelling backwards Loop | 3.5 | Entry and exit to be at same height. |
| 28 | Knife edge Piro | 3.5 | Comfortable height, piro start and stop to be crisp. Entry and exit at same height. |
| 29 | Vertical triangle with 180 piro | 3.5 | Pause for 3 seconds at each stop point. Controlled 180deg Piro at top |
| 30 | Nose down or sideways Tick Tocks | 3.5 | Controlled Height, 3 repetitions |

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