

Contents

9 Preface



10 Getting started

- 13 The Equipment
- 17 Rules and Safety
- 19 Judgement Day



20 Basic training

- 22 Hovering in all directions
- 22 Hovering inverted
- 24 Hovering pirouettes
- 26 Forward flight
- 28 Horizontal figure eight
- 30 Inverted flight
- 32 Backward flight
- 34 Inverted backward eight

- 36 Inverted backward circle
- 38 Inverted backward eight
- 40 Speedcircle
- 42 Speedcircle backward
- 44 Tailslide
- 45 Wall



46 Basic maneuvers

- 48 180° stall turn
- 50 Stall turn 360°
- 52 Stall turn 540°
- 54 Loop
- 56 Outside loop
- 58 Sideward loop
- 60 Roll
- 62 4-point roll
- 64 Backward roll
- 66 Split-S
- 68 Immelman
- 70 Cuban eight
- 72 Vertical eight
- 74 Elevator flips
- 76 Sideward flips
- 78 Elevator tic-tocs
- 80 Aileron tic-tocs





82 Advanced maneuvers

- 84 Rolling circle
- 86 Backward rolling circle
- 88 Rolling loop
- 90 Funnels nose in
- 92 Funnels tail in
- 94 Inverted funnels nose in
- 96 Inverted funnels tail in
- 98 Rainbows
- 100 Double rainbow
- 102 Square of rainbows
- 104 Rainbows with half-rolls
- 106 Snake
- 108 4-point tic-toc
- 110 Tic-toc loop
- 112 Diamond
- 114 Sideward Diamond
- 116 Travelling Flip
- 118 Twirley
- 120 Funnel with half-rolls



122 Pirouetting maneuvers

- 124 Pirouetting circle
- 126 Pirouetting funnels
- 128 Inverted pirouetting funnels
- 130 Pirouetting loop
- 132 Pirouetting globe
- 134 Pirouetting flip
- 136 Pirouetting tic-toc
- 138 Pirouetting snake
- 140 Pirouetting rainbow



142 Autorotation maneuvers

- 144 Autorotation
- 146 Inverted autorotation
- 148 Autorotation doing aerobatics



150 New moves 2011

- 152 Hammock
- 154 Hong Kong Eye
- 156 Koob
- 158 Jupiter Probe



160 Last but not least

- 163 Choreography
- 165 Making of

167 Portraits

BASIC TRAINING





BASIC TRAINING

General thoughts

A tailslide has its name from itself: you fly it tail ahead. A long, undamped dive has its effect even on seasoned spectators: they are curious how you will walk away from this.

Approach

Start the dive at a really high altitude. Maybe even use collective to accelerate into the dive.

Maneuver

Make the dive at a right angle. Flying toward you, you can even dive at an angle, the crowd will hardly notice.

Departure

Now you can show your level of coolness, and whether you get your timing right.

A very nice effect can be obtained, should the natural features allow for a pull-out that the spectators can no longer see (e. g. into a dip at the end of the field or behind a hedge). Coming up again in a whirling maneuver will surely give them the right idea ...

Variations

Dive rolling. Or dive over the side, and pull or push elevator: do the death spiral.

Common errors & tips

You dive at a shallow angle. You pull out too high. Looks boring. Or ... you do not have an exit strategy ... this will ensure you applause, too—at least from the more mischievous spectators.

Pilot:
Kyle Dahl
Location:
California
Photos:
Edward Eckstein

TAILSLIDE

General thoughts

The wall is a maneuver with much appeal, where you can literally let it crack.

Fly the wall abruptly, from high airspeeds, as to startle the crowd!

Maneuver

Out of fast forward flight, you quickly reduce collective and pull the heli into an upright position using elevator. Slam on the brakes using full collective in the vertical.

Departure

And now? Your heli is motionless in mid-air, probably at eye level—now you better have a plan, say half a flip, half a rainbow, or you pull out into an inverted backward speedcircle.

Else it will crack another time, and that would mean a major upgrade opportunity.

Tips

You can do a wall from every flight attitude. Most important is to make it a surprise, to have a good effect on the crowd!

Variations

Practice—at a safe altitude—the combinations of collective and cyclics. A hard elevator move and a good amount of collective will have the heli pop up like a cork. Just pulling elevator will lead into an abrupt climb.

To fly a wall, you want to take away the excess lift by abruptly decreasing collective, only to ramp it up again after you put the heli into a vertical position using elevator. Timing is crucial to make it look good!

Pilot:
Jesse Kavros
Location:
California
Photos:
Edward Eckstein

WALL



this way
←





BASIC MANEUVERS

BASIC MANEUVERS

General thoughts

The loop is an other basic aerobatic move. Pull up, some collective, come around, some negative collective, down around, saved it? In the future, we'll do it right!

A clean, large loop is, relatively independent of the speed, only a matter of the proper technique.

Approach

Enter the loop, like the turn, in a straight and level upright attitude. Make sure the tail is in line and that you do not bring any unwanted bank angle into the climb.

Maneuver

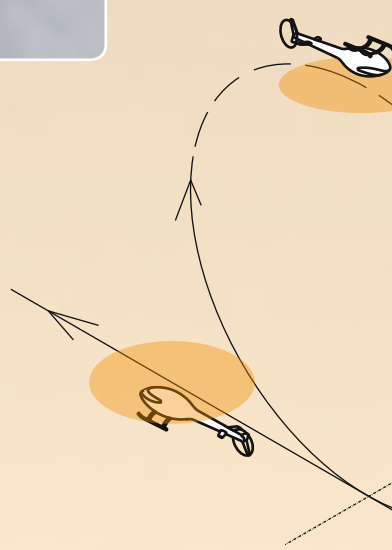
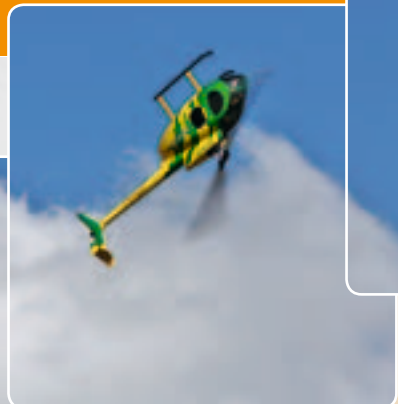
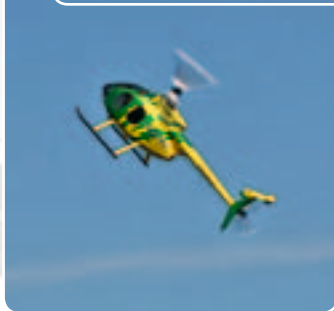
The same way you would enter a turn, you pull into the climb with full collective and rather small amounts of elevator, forming a large vertical circle. Do not even think about going negative collective in the upper segment of the loop. We only want to reduce collective to about between zero and hovering collective. Elevator and collective equal to airspeed, and airspeed is crucial. Coming down, you might even want to reduce collective some more, and control your flight path using elevator so you exit at the same altitude in front of you where you entered the maneuver.

Departure

Go on for a few more feet before you settle into the next move. You want to do 'loops of infinity'? Just keep pulling elevator and gently push the collective stick to the limit!

Variations

Backward, sidward, outside loops upward or downward ...



LOOP

Pilot:
Kyle Dahl
Location:
California
Photos:
Edward Eckstein

Common errors & tips

Not enough collective: you lose too much air-speed. Too much of elevator: the loop becomes very small. You do not match elevator and collective: you exit at a higher or lower altitude than you entered—or even too low (see fig. 9). You enter the loop with a bank angle or with the tail not aligned properly: the heli moves sideward. You apply negative collective in the upper segment of the loop: you thwart the heli. In the downward segment, you might use some negative collective to make the loop a circle, get the hang of it. When you have wind from one direction, it can be necessary to enter the loop with a slight bank angle to compensate for the wind.