

Definitions of 3D Flying by dukedave5200

Some definitions of 3D flying:

"3D flying is a form of flying using aircraft to perform specific aerial maneuvers. They are usually performed when the aircraft had been intentionally placed in a stalled position"

"3D flying is typically performed by model aircraft which have been configured with a higher thrust-to-weight ratio of more than 1:1. In fixed wing airplanes large control surfaces assist the aircraft on performing radical maneuvers which allow the aircraft to turn in tighter than conventional turns. This is achieved by having larger control surfaces; rudder, ailerons, and elevator and having greater amounts of throw applied to these control surfaces."

Here's a list of generally accepted 3D - may not be all of them, but these are basic 3D maneuvers:

Hover: You pull the aircraft into a completely vertical attitude and allow the propeller to hold the airplane in the air in plane much like a helicopter. This is the most basic 3D maneuver and usually the first one new modelers want to learn

Torque Roll: The plane is made to hover in place, rotating around its roll axis. This is an extension of a Hover whereas the Torque of the engine rolls the airplane.

Elevator: The aircraft is stalled with a large amount of elevator up or down. This causes the plane to descend vertically.

Wall: The Wall is where the airplane is made to come to a stalled stop to a vertical position from a previous horizontal flight path, usually this is executed prior a Hover.

Alien Wall: The same as a Wall but pulled into full vertical position violently at a high of speed.

Harrier: A very slow forward flight motion with the nose high at about 45 degrees of attitude.

Inverted Harrier: The same as the above, just inverted. Most capable pilots find this easier than a standard harrier due to the wing being above the center of gravity rather than below it.

Harrier Roll: Like the Harrier maneuver but with a roll performed simultaneously.

Flat spin: A spin induced with full up elevator, full rudder, and full aileron. Once the spin is initiated you will level the ailerons and increase engine speed a bit to pull the aircraft

around. This will in turn flatten the spin.

Inverted Flat spin: The same as the above but inverted. Inverted flat spins are easier to control, but can be hard to come out of due to orientation, and knowing when to stop the spin. When entering an inverted flat spin, you must apply opposite aileron to which the rudder is going. Once the spin is initiated, you do the same as a standard Flat Spin.

Waterfall: The waterfall is a move where the plane is made to pivot 360 degrees in the pitch axes. Ideally this is performed with little altitude gain or forward motion.

Blender: Form of entering an inverted flat spin from a nose down attitude. The pilot applies full aileron, then rudder in the opposite direction and full down elevator. The plane will "snap" and then the pilot must neutralize aileron (and in some cases apply aileron in the same direction as the rudder) and the plane will be in an inverted flat spin.

Pop-Top: Same as a blender, but going up. The pilot must have a good deal of speed on an upline, then apply full aileron followed by opposite rudder and full down elevator (very similar to the blender). Then neutralize aileron and lessen elevator and the plane will spin while motionless in the air. This maneuver has a large "wow factor" because the plane is literally stopped dead in the air for a second or two.