

GREAT LAKES UPSET FLIGHT TRAINING 101

Stall

1. Definition. Sudden disruption in the laminar airflow over an airfoil. This occurs when the air flowing over the wing has exceeded the wings critical angle of attack. Stall speed is affected by weight or load factor. A completely stalled airfoil produces no lift.
2. Recovery Procedure.
 - Lower the nose by releasing back stick pressure
 - Use aileron and rudder to regain level balanced flight
 - Increase power smoothly

Out-of-Control Flight (OCF)

1. Definition. A phase of flight in which the aircraft's control forces (ailerons, elevator, stabilator, etc.) are ineffective. It is characterized as a rapid un-commanded motion that accompanies or follows a stall as well as a more complete loss of control effectiveness. Stall recovery procedures are not appropriate or effective once it has been determined the aircraft has departed controlled flight.
2. Recovery Procedure.
 - Neutralize the controls
 - Reduce the power to idle
 - Wait until the aircraft stabilizes and regains airspeed
 - If in a steady state spin, execute the steady state spin recovery procedure
 - Recover from the unusual attitude

Post Stall Gyration

1. Definition. The random motions of the airplane about one or more axes immediately following a stall. It can occur at normal flying speed in the case of an accelerated stall or at slow speeds following a normal stall.
2. Recovery Procedure. Execute the OCF recovery procedure.

Spin

1. Definition. A stalled condition of flight in which the aircraft autorotates about its vertical axis due to an unbalanced yaw input causing the outside wing to be "less-stalled" (producing more lift) than the wing on the inside of the turn. The two requirements for a spin are a stall and yaw.
2. Recovery Procedure. Execute the OCF recovery procedure.

Insipient Spin

1. Definition. The motion occurring between a post stall gyration and a fully developed spin. A spin-like motion in which the aerodynamic and inertial forces are not yet in balance, but where there is sustained, unsteady yaw rotation.
2. Recovery Procedure. Execute the OCF recovery procedure.

Progressive Spin

1. Definition. A violent reversal of a steady state in the opposite direction which occurs when steady state spin recovery control inputs are not neutralized when the aircraft stops rotating. It is typically characterized by a rapid and/or violent oscillation in the

pitch axis followed immediately by a rapid acceleration in the direction of rudder input until a steady state spin is achieved.

2. Recovery Procedure. Execute the OCF recovery procedure.

Steady State Spin

1. Definition. A spin that has fully developed and the aerodynamic forces have reached a steady state. It is typically characterized by an airspeed that is oscillating within a steady range, pitch attitudes oscillating within a steady range, and a sustained (not accelerating) turn rate.
2. Recovery Procedure. Unintentional steady state spins are uncommon as they require the pilot to sustain a stalled flight condition and a sustained yaw input.
 - Reduce power to idle
 - Gear and flaps up (time permitting)
 - Full rudder opposite the direction of the turn
 - Advance the yoke forward (if in an erect spin, aft if inverted) to break the stall and increase rudder effectiveness
 - Neutralize all controls when the rotation stops
 - Recover from the unusual attitude

If the aircraft does not show signs of recovering within 3-4 turns after applying spin recovery control inputs.

- Apply full elevator deflection
- Add maximum power

Spiral

1. Definition. A nose low rotation of the aircraft about its vertical axis in which neither wing is stalled and spin recovery procedures are ineffective. It is disorienting and easily confused as a spin. However, unlike a spin, the airspeed will continue to climb until ground impact or structural failure. It is usually caused by a low airspeed, high angle of bank flight regime followed by momentary yaw incursion which induces the spiral rotation.
2. Recovery Procedure. Execute the OCF recovery procedure.