Yaw Maneuver Conditions

"**§ 25.351 Yaw maneuver conditions** The airplane must be designed for loads resulting from the conditions specified in paragraphs (a) and (b) of this section. Unbalanced aerodynamic moments about the center of gravity must be reacted in a rational or conservative manner considering the principal masses furnishing the reacting inertia forces:

(a) Maneuvering. At speeds from V_{MC} to V_A, the following maneuvers must be considered. In computing the tail loads, the yawing velocity may be assumed to be zero:

(1) With the airplane in unaccelerated flight at zero yaw, it is assumed that the rudder control is suddenly displaced to the maximum deflection, as limited by the control surface stops, or by a 300-pound rudder pedal force, whichever is critical.

(2) With the rudder deflected as specified in paragraph (a)(1) of this section, it is assumed that the airplane yaws to the resulting sideslip angle.

(3) With the airplane yawed to the static sideslip angle corresponding to the rudder deflection specified in paragraph (a)(1) of this section, it is assumed that the rudder is returned to neutral."

Even though the misunderstanding of V_A had been perpetuated over the years through imprecise definitions published in pilot training documents, it took a combination of negative training, and a rudder control design that was susceptible to pilot induced oscillation (PIO), in order for the misinterpretation of V_A result in an accident."