

# Rudder Exercises

How to instinctively apply the proper amount of rudder to obtain maximum performance in all phases of flight? Try these exercises with a flight instructor experienced in your airplane's handling technique. Then regularly practice them yourself. Omit any that are specifically prohibited in the Limitations section of your Pilot's Operating Handbook or other Approved Flight Manual.

## SLOW FLIGHT

In slow flight, or flight at minimum controllable airspeed, more rudder pressure is required to remain coordinated in a high angle-of-attack configuration. You can experience using full rudder travel in this configuration, mainly because you'll need it to maintain coordinated flight.

## STALL RECOVERY WITHOUT AILERON INPUT

In stall recoveries, lift a dropped wing with rudder alone. In some models, aileron deflection aggravates the stall. In all cases, using aileron creates performance-robbing drag during recovery.

## FALLING LEAF

The falling leaf maneuver starts with a power-off stall in level flight and initiating an incipient spin by holding back pressure and applying full rudder in one direction. As soon as the wing begins to drop, the pilot releases back pressure to reduce angle of attack, and applies opposite rudder to lift the dropping wing and stop the turn. The pilot repeats the maneuver through several cycles alternately in either direction until recovery. Don't do this right after lunch.

## DUTCH ROLL

The Dutch roll teaches control against adverse yaw. It consists of a series of banks in one direction, then the other, while keeping the airplane's nose pointed at a single reference on the horizon. The amount of rudder required will change as you roll in and out of banks, and will vary from one type of airplane to another.

## CROSS-CONTROL STALLS

Unchecked, a cross-control stall is an easy way to put the airplane into a spin. It occurs when the airplane reaches or exceeds its critical angle of attack banked on one direction with rudder deflected in the other direction. One wing will be at a higher angle of attack than the other and will stall first. It takes simultaneous aggressive forward pressure to reduce angle of attack, and rudder opposite the "down" wing, to recover from a cross-control stall.

## SLIP TO LANDING

Practice steep slips—aileron nearly full deflection one way, rudder nearly full the other, with careful airspeed control—down final approach to a preselected spot on the runway. Don't accept hearsay about slip limitations; look them up in the POH for the specific airplane you're flying.

