Airplane Flying Handbook

FAA-H-8083-3A

U.S. Department of Transportation
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the slip is to be made should be lowered by use of the ailerons. Simultaneously, the airplane's nose must be yawed in the opposite direction by applying opposite rudder so that the airplane's longitudinal axis is at an angle to its original flightpath. [Figure 8-13] The degree to which the nose is yawed in the opposite direction from the bank should be such that the original ground track is maintained. In a forward slip, the amount of slip, and therefore the sink rate, is determined by the bank angle. The steeper the bank—the steeper the descent.

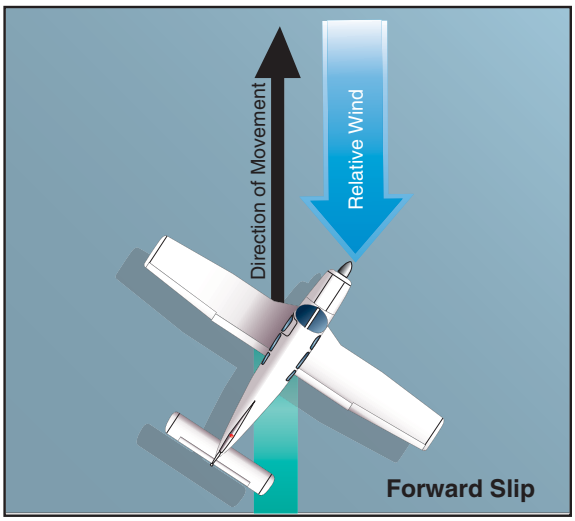

Figure 8-13. Forward slip.

In most light airplanes, the steepness of a slip is limited by the amount of rudder travel available. In both sideslips and forward slips, the point may be reached where full rudder is required to maintain heading even though the ailerons are capable of further steepening the bank angle. This is the **practical slip limit**, because any additional bank would cause the airplane to turn even though full opposite rudder is being applied. If there is a need to descend more rapidly even though the practical slip limit has been reached, lowering the nose will not only increase the sink rate but will also increase airspeed. The increase in airspeed increases rudder effectiveness permitting a steeper slip. Conversely, when the nose is raised, rudder effectiveness decreases and the bank angle must be reduced.

Discontinuing a slip is accomplished by leveling the wings and simultaneously releasing the rudder pressure while readjusting the pitch attitude to the normal glide attitude. If the pressure on the rudder is released abruptly, the nose will swing too quickly into line and the airplane will tend to acquire excess speed.

Because of the location of the pitot tube and static vents, airspeed indicators in some airplanes may have considerable error when the airplane is in a slip. The pilot must be aware of this possibility and recognize a properly performed slip by the attitude of the airplane, the sound of the airflow, and the feel of the flight controls. Unlike skids, however, if an airplane in a slip is made to stall, it displays very little of the yawing tendency that causes a skidding stall to develop into a spin. The airplane in a slip may do little more than tend to roll into a wings level attitude. In fact, in some airplanes stall characteristics may even be improved.

GO-AROUNDS (REJECTED LANDINGS)

Whenever landing conditions are not satisfactory, a go-around is warranted. There are many factors that can contribute to unsatisfactory landing conditions. Situations such as air traffic control requirements, unexpected appearance of hazards on the runway, overtaking another airplane, wind shear, wake turbulence, mechanical failure and/or an unstabilized approach are all examples of reasons to discontinue a landing approach and make another approach under more favorable conditions. The assumption that an aborted landing is invariably the consequence of a poor approach, which in turn is due to insufficient experience or skill, is a fallacy. The go-around is not strictly an emergency procedure. It is a *normal* maneuver that may at times be used in an emergency situation. Like any other normal maneuver, the go-around must be practiced and perfected. The flight instructor should emphasize early on, and the student pilot should be made to understand, that the go-around maneuver is an alternative to any approach and/or landing.

Although the need to discontinue a landing may arise at any point in the landing process, the most critical go-around will be one started when very close to the ground. Therefore, the earlier a condition that warrants a go-around is recognized, the safer the go-around/rejected landing will be. The go-around maneuver is not inherently dangerous in itself. It becomes dangerous only when delayed unduly or executed improperly. Delay in initiating the go-around normally stems from two sources: (1) landing expectancy, or set—the anticipatory belief that conditions are not as threatening as they are and that the approach will surely be terminated with a safe landing, and (2) pride—the mistaken belief that the act of going around is an admission of failure—failure to execute the approach properly. The improper execution of the go-around maneuver stems from a lack of familiarity with the three cardinal principles of the procedure: **power**, **attitude**, and **configuration**.

POWER

Power is the pilot's first concern. The instant the pilot decides to go around, *full* or *maximum allowable takeoff* power must be applied smoothly and without hesitation, and held until flying speed and controllability are restored. Applying only partial power in a go-around is never appropriate. The pilot