



FEELING CONFIDENT WHILE SLIPPING

By Gene Hammond – SSF Trustee

During discussions with pilot examiners across the United States, the Soaring Safety Foundation (SSF) has learned that one of the weak areas noted during practical tests for all glider ratings is slips to landing.

The requirement for training of slips is clearly noted in the Practical Test Standards (PTS) for ALL glider ratings. The following requirements are listed in the Glider Pilot PTS section dealing with slips.

1. PTS: Private – Area of Operation IV, Task R, Slips to Landing

a. Exhibits knowledge of elements related to forward, side, and turning slips to landing, with and without the use of drag devices.

The purpose of a slip has been defined in many texts on flying, but briefly, a slip is used to lose altitude more rapidly without gaining excess speed.

Most students have been instructed in and can perform a **side slip** when landing in a crosswind.

The applicant, in some cases however, has not been adequately trained to perform a **forward** or **turning** slip, or lacks the skill to initiate, continue, and exit a slip. Any licensed pilot should be able to demonstrate slips during a flight review or when training for an advanced glider certificate or rating

. b. Recognizes the situation where a slip should be used to land in a desired area

A **side slip** may be described as a maneuver during which the longitudinal axis of the glider is aligned with the desired track of (parallel to) the runway or landing site.

The side slip may be executed once on final approach and carried to the landing point, but frequently is commenced as the glider nears the ground and the crab established on final approach to maintain a ground track with the landing strip is removed.

A **forward slip** may be described as a slip during which the longitudinal axis of the glider is not aligned with the direction of travel ; i.e., when a desired ground track is being maintained, the longitudinal axis of the glider is pointed toward the high-wing side of the slip.

When would a forward slip be used? When necessary, even with drag devices extended, to lose extra altitude once the airport or landing site is definitely within reach so as to not gain unwanted airspeed.

Should the spoilers or high-drag devices fail to extend, or their use be restricted, a correctly performed slip would ensure a safe landing within the airport boundary or off-airport landing site.

A **turning slip** is a forward slip during which the glider is steered from one ground track to another by adjusting the bank and yaw; for instance, when flying the pattern and overshooting the final approach. The glider might be placed in a turning slip until the desired ground track (final approach path) is achieved, then returned to normal coordinated flight for the remainder of the approach and landing.

c. Establishes a slip without the use of drag devices

To establish any type of slip, the stick is moved to lower one wing. Adverse yaw causes the nose to yaw in the opposite direction and rudder pressure is added on the high-wing side to maintain directional control. During slipping flight, the pitot tube is not aligned parallel to the relative wind, thus may not be accurate.

d. Maintains the desired ground track

In most gliders, any type of slip is limited by the amount of rudder available. If the bank is too shallow, the glider will yaw toward the deflected rudder, while if the bank is too steep, the glider will turn toward the lowered wing.

e. Maintains proper approach attitude

Pitch attitude, relative to the horizon, is the primary cue to airspeed, and the nose position in a slip is about what one would see while flying at minimum drag speed. During any slip it is essential that airspeed remains relatively constant. Using the airspeed indicator as reference may result in excessive speed when the slip is removed.

f. Makes smooth, proper and positive control applications during recovery from a slip

The slip is discontinued when the pilot will obviously land the glider within the designated area and be able to stop within 200 feet of the designated spot.

As the desired landing area is approached, the lowered wing is raised with aileron and the applied rudder is reduced to align the glider with the landing surface. Smooth, coordinated control movement is essential to avoid skidding and striking the ground while flying sideways.

When exiting the slip, the airspeed (and speed over the ground) will tend to increase, so if the speed was not held relatively constant during the slip, the length of landing area required for landing and stopping will be extended.

g. Touches down smoothly within the designated landing area

The magic word is “smoothly.” No forcing the glider onto the ground, no dragging the upwind wing in the dirt, and by all means, no landing short nor going beyond the end of the landing area!

Instructors must ensure ALL pilots can adequately meet these requirements prior to recommending the student for a flight test, or endorsing a pilot’s logbook for a flight review or advanced certificate. Students must ensure he/she feels comfortable performing and discussing all types of slips.

