Tracking along a centerline of the touchdown area is an important consideration in gliders. The long, low wingtips of the glider are susceptible to damage from runway signage and runway lighting. Turning off the runway should be done only if and when the pilot has the glider under control.

Landing in high, gusty winds or turbulent conditions may require higher approach airspeed to improve controllability and provide a safer margin above stall airspeed. As a rule of thumb, pilots add one-half the reported gust factor to the normal recommended approach airspeed. This increased approach airspeed provides a safety margin and affords better penetration into the headwind on final approach.

Crosswind Landing

Crosswind landings require a crabbing, or slipping method, to correct for the effects of the wind on the final approach. Additionally, the pilot must land the glider without placing any unnecessary side load on the landing gear.

The crab method requires the pilot to point the nose of the glider into the wind and fly a straight track along the desired groundpath. The stronger the wind is, the greater the crab angle needs to be. The glider is in coordinated flight and tracking the extended centerline of the landing area. *[Figure 7-27A]* Prior to flare, the pilot must be prepared to align the glider with the landing direction. *[Figure 7-27B]* The pilot should use the rudder to align the glider prior to touchdown and deflect the ailerons into the wind to control the side drift caused by the crosswind.

In the slip method, the pilot uses rudder and ailerons to slip the glider into the wind to prevent drifting downwind of the touchdown area. The disadvantage of the slip method is that the sink rate of the glider increases, forcing the pilot to adjust the spoilers/dive brakes, as necessary, to compensate for this additional sink rate. Glider pilots should be ready to apply brakes to avoid leaving the runway or landing area as control authority is lost. The slip should be established no lower than 100 feet to ensure a stable approach.

Pilot selection of the slip or crab method for crosswind landing is personal preference and/or related to glider size and wingspan. The important action is to stabilize the approach early enough on final to maintain a constant approach angle and airspeed to arrive at the selected touchdown point.

Common errors during approach and landing include:

- Improper glidepath control.
- Improper use of flaps, spoilers/dive brakes.
- Improper airspeed control.
- Improper stabilize approach.
- Improper correction for crosswind.
- Improper procedure for touchdown/landing.
- Poor directional control during/after landing.
- Improper use of wheel brakes.

Slips

A slip is a descent with one wing lowered. It may be used for either of two purposes or both of them combined. A slip may be used to steepen the approach path without increasing the airspeed, as would be the case if the spoilers/dive brakes were inoperative, or to clear an obstacle. It can also be used to make the glider move sideways through the air to counteract the drift that results from a crosswind. Formerly, slips were used as a normal means of controlling landing descents to short or obstructed fields, but they are now primarily used in the performance of crosswind landings and short/off-field landings.

With the installation of effective spoilers/dive brakes on modern gliders, the use of slips to steepen or control the angle of descent is no longer the only procedure available

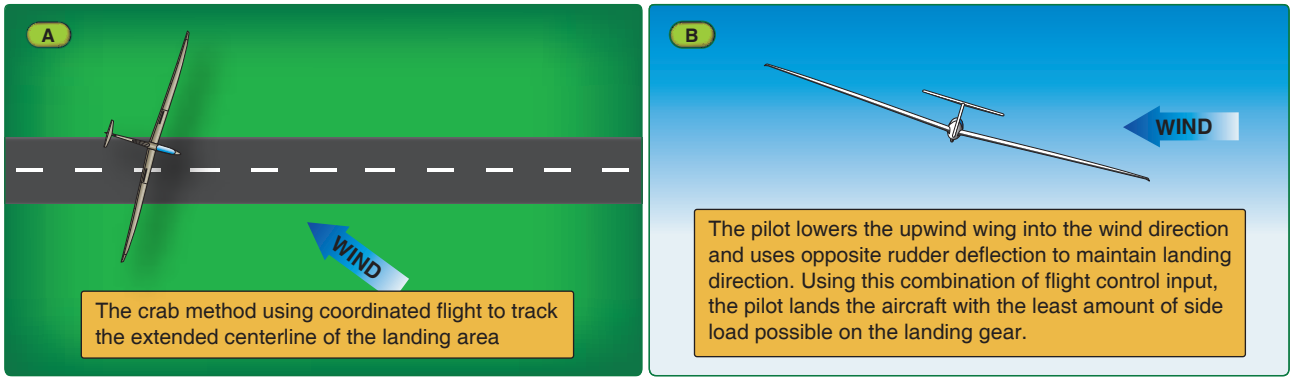

Figure 7-27. *Using the crab method to track the extended centerline of the landing area (A). Controlling side drift by adjusting the glider into the wind before landing (B).*