



## Which Approach? Which Pattern?

By Richard Carlson SSF Chairman

“Tell me your touchdown point. What is your stopping point?” At some point in your training you probably heard your instructor utter these two phrases. Instructors ask these questions because precision landings are a specific task spelled out in the Practical Test Standards (PTS). While every licensed glider pilot has made precision landings, most of us would agree that not every landing we make would meet the PTS standards.

Some may wonder why it is apparently so difficult for some pilots to make every landing a spot landing. One of the major reasons is that landing a glider is a very complex task requiring the pilot to juggle multiple factors in a constrained time period. Without a good understanding of these factors, and ways to coordinate them, everyone will have difficulties landing.

There are two basic differences between landing a glider and landing a propeller driven airplane. The first difference is, the glider is constantly descending throughout the approach and landing. While the glider pilot may control the sink rate, there is little chance that he/she can gain altitude during the approach. A power pilot may always adjust the throttle to descend, hold, or gain altitude. The second big difference is that the glider pilot is committed to the landing, while the power pilot may reject the approach and ‘go around’ to try again. It’s like the joke about a breakfast of bacon and eggs, the chicken is involved but the pig is committed.

A major point to remember in planning your approach is that your primary goal is to reach your intended landing spot. While flying a full pattern (base, downwind, and final) is an excellent tool that can help you judge how the approach is working, instructors will tell you to forget the pattern if flying it will result in your not making your touchdown point. The SSF’s “Goal Oriented Approach” puts the focus on using all the tools at your disposal to make sure you reach your intended landing point.

What are some of the factors that the glider pilot must consider? This is a partial list; talking with your flight instructor and peers will probably let you add to this list.

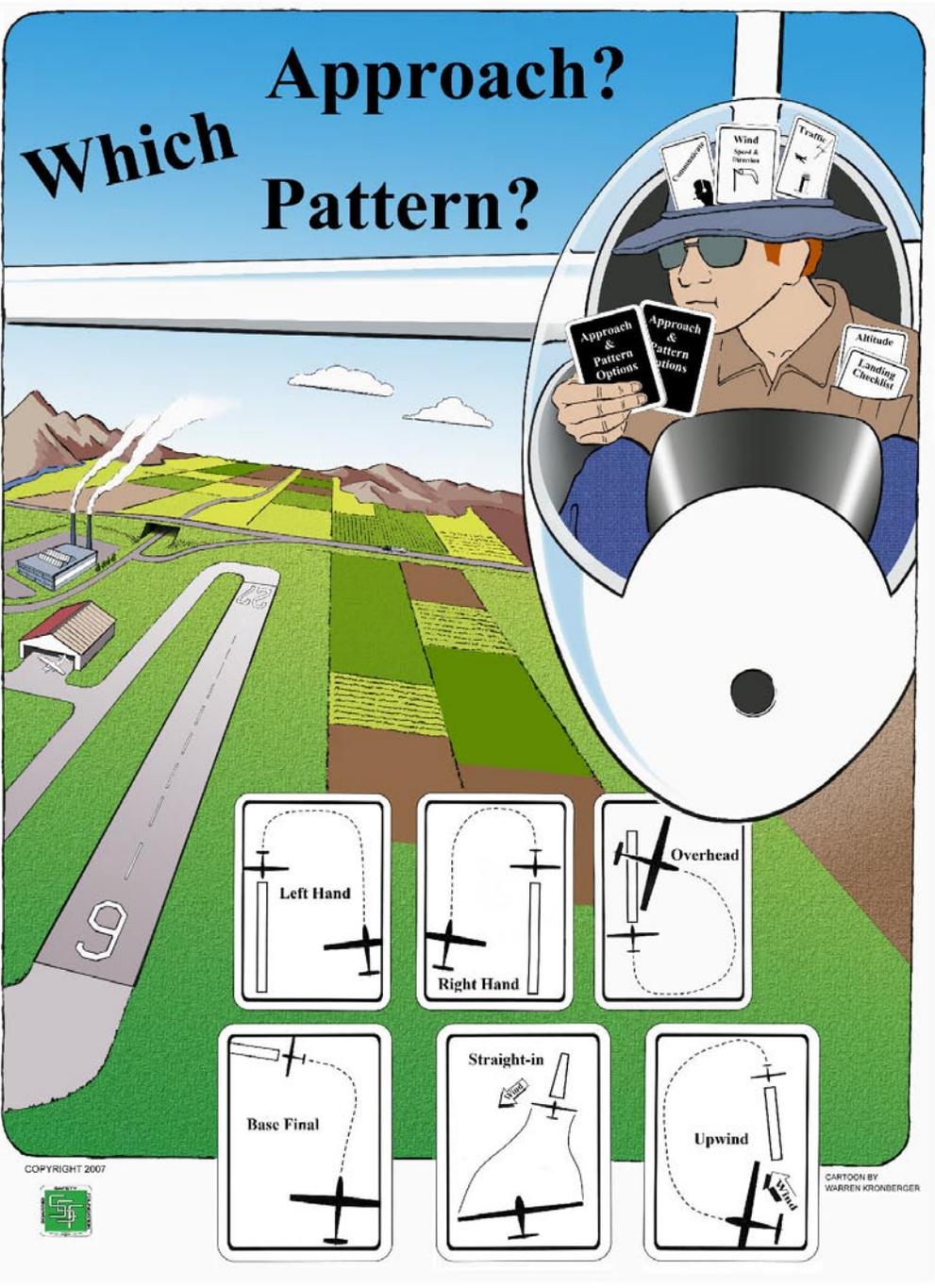
1. Your altitude. Are you in a good position to glide from where you are now to your intended landing spot? Remember that this calculation should also include the altitude needed to fly the pattern. Once in pattern you will find it easier to monitor your altitude indirectly instead of directly. This indirect method relies on the glider sinking at a constant rate while getting closer to the landing spot. This is true for part of the downwind leg, the base and final legs of the pattern. Just monitor the angle the landing spot is below the horizon. You will find it very easy to tell when this angle changes, even though you may not know precisely what the angle is.

Modulate the spoilers or the gliders position to keep the angle from changing and you will find landings are easier and more predictable.

2. Your sink rate. What is your current sink rate? Is it increasing, decreasing, or remaining constant? At the current sink rate, will you make it to your intended pattern entry point, or do you need to start making new plans? One simple method for determining how your sink rate is affecting your glide is to look at a point on the ground a mile or so in front of you. As you glide toward that point, at a constant speed, notice how that point is moving on the canopy. If the spot is moving up, you are sinking too fast and you will need a new plan soon. If it remains constant your sink rate is constant, and if it is moving down on the canopy, you will overfly that point on the ground. Once in the pattern use your spoilers to control your sink rate and use the angle method described above to determine if you have the correct sink rate.
3. What are the winds doing? Are you gliding into a headwind or do you have a tailwind heading back to the gliderport? Remember to use the proper speed-to-fly airspeed for this glide. Once in the pattern you also need to use the proper drift correction techniques to compensate for any cross wind component. Drifting away from the runway on downwind will show up immediately if you use the angle method described above. Make the necessary correction in your flight path and optionally change your sink rate by varying the spoilers.
4. What is the other traffic doing? At times you may find that multiple gliders will be attempting to land on the same runway at the same time. Coordinating this so that some pilots land long, while others land short, or some land to the left of the centerline while others land to the right will make this a doable event.

Once you have these, and any other factors you can come up with, in mind you can determine what pattern is possible. In most cases you will initially plan on flying a full pattern. However, as noted above, if things are changing or you have misjudged some factors, then it is essential that you modify the pattern to suit the existing conditions. The SSF strongly recommends that you practice some non-standard approaches with your instructor. This will make it easier for you to do the right thing when you must do this for real.

This past summer the SSF mailed a new poster titled "Which Approach? Pattern?" to every club, chapter, and commercial operator in the United States. This poster was designed to get glider pilots thinking about how these multiple factors affect the landing. It is also intended to make sure that glider pilots realize that changing conditions may make it necessary to modify the pattern in order to safely reach your intended landing spot. Taking all these factors into account will make it easier for you to consistently make precision landings, like those you made on your flight test.



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