



Teaching Stalls and Spins – Are we doing it right?  
by Richard Carlson – SSF Chairman

In the early 1980's the Soaring Safety Foundation applied for, and received, authorization to run a Flight Instructor Refresher Course (FIRC). The instructions for submitting this application were found in Advisory Circular 61-83. This was not a blanket authorization, the FAA requires that FIRC providers reapply on a regular basis to ensure that they update their training material and procedures. At the present time the FAA uses A/C 61-83H and FIRCs are authorized to operate for 2 years.

The SSF last renewed its authorization in February 2016. During the renewal discussions, the FAA FIRC program manager asked why we had a lesson plan covering Stalls and Spins. Didn't we know that the FAA had deemphasized Spin training due to the high number of fatal spin training accidents? Yes, we replied, we did understand that the FAA had taken this action, but we felt it was important for glider pilots to learn about the hazards, and to practice the recognition and avoidance skills needed to detect and recover from unintentional stalls and spins.

Over the summer the Trustees have also heard from several members who expressed concern that maybe we had the wrong focus on our stall/spin training. It was pointed out that glider flight instructors have been providing stall/spin training since the 1920's and we haven't managed to stamp them out yet. Maybe we need to rethink how we teach these maneuvers, and where we place the training emphasis.

In 1997 the FAA partnered with the General Aviation community to create the General Aviation Joint Steering Committee (GAJSC). In 2012 GAJSC published their 1<sup>st</sup> document on Loss of Control accidents and noted that over 40% of fatal GA accidents could be classified in the Loss of Control category. This was by far the largest single causal factor in fatal aviation accidents.

Around the same time the SSF Trustees took a closer look at fatal glider accidents. Not surprisingly 40% of the fatal glider accidents also fall into the Loss of Control category. The attached figure shows the causal factor, as determined by the NTSB, for fatal glider accidents between 2002 and 2013. The column marked stall/spin shows up as the leading causal factor for accidents during the 3 phases of flight (launch, cruise, and landing).

Now as we all know, Stall recognition and recovery is a required maneuver that is taught by instructors and evaluated on flight exams. The Practical Test Standard (PTS) task "IX Slow Flight and Stalls" lists stall recognition and recovery as a mandatory task the applicant must demonstrate.

So if we are all taught stall recognition and recovery techniques, why do we have so many stall/spin accidents? That is the question that bedevils us all.

Perhaps it has to do with how we as instructors teach this task and what our students and pilots take away from this training.

Are we putting the emphasis on executing an intentional stall, or on recognizing and recovering from an unintentional stall?

Are students and pilots misinterpreting the purpose of this training?



Are instructors failing to identify and train students and pilots to recognize that the threat of an unintentional stall is directly proportional to the altitude at which it occurs? An unintentional stall at 3000 ft AGL has a very different threat level than one that occurs at 300 ft AGL.

Are instructors failing to provide mitigation strategies to help pilots and students recognize and prevent an unintentional stall at low altitude? Things like setting and maintaining an adequate airspeed or maintaining coordinated flight during turns.

Obviously we can't practice stalls at low altitudes, that training would create more accidents than it would prevent. So how do we provide the necessary training?

Scenario Based Training (SBT) is one way to provide it. Creating and analyzing situations that lead to unintentional stalls while close to the ground can help students and pilots understand the threats and develop mitigation strategies.

Using the SSF's recommended approach speed of 1.5 times  $V_{so}$  (the listed stall speed) plus 50% of the wind and a gust factor is a good way to start. You should establish this speed as early as possible, but no later than on base leg. Once established, you must constantly monitor your pitch attitude and the ASI to keep the speed from dropping off.

On a rope break, the first action is to lower the nose to a pitch attitude that will maintain an adequate airspeed. The approach speed you calculated before the launch is a good reference speed to shoot for.

Thermalling close to the ground is extremely hazardous and should be avoided. Flying slower than your calculated approach speed raises the threat and must be avoided.

An unintentional stall/spin is a Loss of Control event. Eliminating Loss of Control accidents would go a long way towards reducing the fatal accident rate in soaring.

If you walk away from your flight training thinking you know how to stall and un-stall a glider you have learned the wrong lesson. You need to learn how to recognize and deal with the unintentional stall. That's what your instructor needs to teach you. Don't let him/her get away with less.

