Comfort Zone

by Dan Cook, Flight Training and Safety Committee, Soaring Association of Canada (SAC). This article was originally prepared for the SAC's internal newsletter, Free Flight

Pssst! Let's talk. Recent gliding accidents have indicated that not all instructors are comfortable determining when they should take control from a student during flight instruction. Some instructors have argued that many instructors take control too soon and don't give the student enough latitude to practice. This problem may be true in some situations, but it has the potential to quickly lead to an unsafe situation. Worse still, some instructors never stop manipulating the controls while the student practices the air exercise. Usually there is a fear that the student will put the instructor in an unsafe situation. Unfortunately, the student never gets a true feel for the glider's response, and learning the necessary handling skills is very much slowed. To assist instructors in understanding how far is too far, we will examine a risk management model that describes comfort zones.

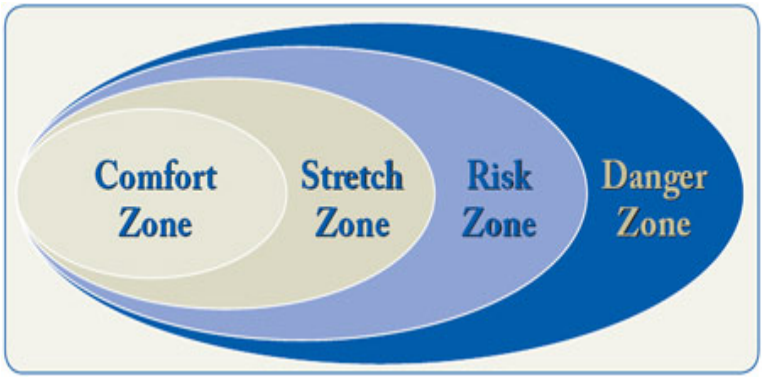

Figure 1: The comfort zone principle

The comfort zone model illustrates how challenging situations can have both positive (expanding) and negative (reducing) effects upon a participant's personal view of their own experience. The large goose egg represents a pilot's overall total knowledge, skill, and experience. The comfort zone represents one's personal level of satisfaction with the risks in flying. These are the elements of safety that protect us and make us feel comfortable. As long as pilots operate the glider within their personal comfort zones, they should be able to conduct the flight safely. The stretch zone represents flying activity that is beyond their normal experience and skill level, and therefore, outside their normal comfort area. Flying in this range under supervision can be safe. However, the new experience will develop a pilot's capabilities, introducing them to new experiences, skills, and knowledge. The risk and danger zones illustrated are beyond the pilot's normal range of capabilities; flight exercises attempted in these zones may not have suitably safe outcomes. Based on the law of primacy, if the instructor takes a student into the risk or danger zone, this could be a negative learning experience (example: stall/spin exercises too early will likely inhibit later training).

A good glider instructor will use the knowledge of their student's capabilities (zones) to allow the student to experience flight in their stretch zone, thus learning from new experiences. The instructor will take control from the student when the flight moves towards the limits of the student's capability to handle the exercise safely (risk zone). The instructor must never allow the flight to progress to the danger zone, where the

student is not capable of maintaining the flight safely. Of course, the instructor has more experience, knowledge, and skill than the student does. The instructor's comfort zone should easily encompass the student's stretch zone. If the instructor allows the student to go into the instructor's risk zone, the flight is not being conducted safely.

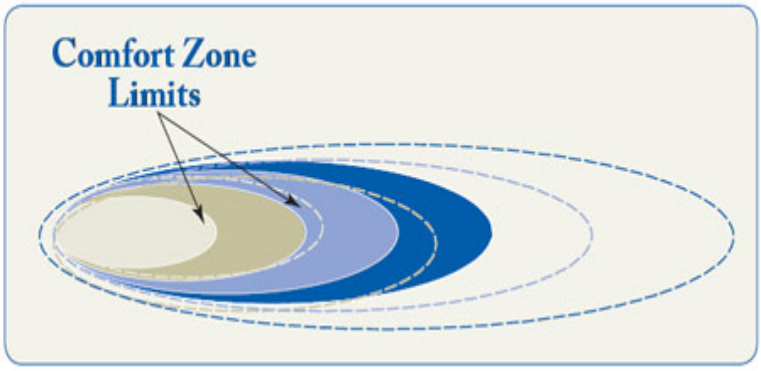

Figure 2: Possible relative size of a student's zones (solid colours) vs. relative size of an instructor's zones (dashed lines)

This model is only good if instructors can identify these zones in themselves and in their students. How do you tell the limit of your perceived risk zone, let alone your student's?

When you are in your comfort zone, you might experience personal symptoms similar to those described in Table 1. This table is based on observations made by instructors. These symptoms may or may not be evident in an instructional flight, nor are they limited to those expressed. Everyone is different, and all instructors need to learn about their own symptoms, as well as those of their students, to develop their own criteria. The table will give you references to help you start measuring the transition between comfort and stretch zones. Body language, physiological responses, speech patterns and tone, and the ability to communicate are indications that a person may be transitioning from one zone to another.

When nearing critical times in a flight lesson (e.g. the landing phase), the instructor may ask questions about the flight to find out indirectly what zone the student may be in. If the instructor listens to what is said, and notices how the student responds, more information becomes available. Lack of response is a bad sign, and taking control is recommended until you find out what the problem is. At a critical point in the flight, if a verbal prompt is made to the student and there is no immediate response, the instructor must take control.

An instructor will often look for head movement. Proper scan procedure is one of the first techniques to deteriorate near the end of a student's stretch zone. If possible, one can also look at the back of the ears or neck for colour of skin and signs of sweat.

As an instructor, any time a student takes you into your own stretch zone, you should take control and put the flight back into your comfort zone. Escalation of zones can also progress very quickly; for example, in spin recovery exercises, you may find yourself in your risk area quickly. Anticipation and prompt response are necessary. However, more often than not, it will be a student or another pilot who is performing well that will surprise you. Also, moving from the student's stretch zone to risk zone may be subtle. Don't let your guard down, stay alert, and keep looking for clues from your student.

Last, but not least, we need to mention the instructor/ student syndrome described in the *Glider Instruction Manual.* Do not fall into the trap where the student realizes some aspect of the flight is not correct or ideal and continues in the expectation that the instructor will prompt a correction, and the instructor is waiting for the student to correct the problem and does not issue a prompt in time.

In summary, please remember that a serious accident with an instructor on board is never acceptable. We are in the aircraft to fly safely first, and to instruct second. Stay in your comfort zone if you are instructing, and keep your students out of their risk or danger zones!

Many thanks to Kevin Moloney, of the British Gliding Association (BGA) Safety Committee, who presented this model at the International Scientific and Technical Soaring Organisation (OSTIV) Training Safety Panel in 2005.

Comfort (minimal learning)	**Stretch (good learning)**	**Risk (marginal learning)**	**Danger (no learning)**
Personal Symptoms			
• Good feeling about flight • Alert but relaxed • Easily managing flight and manoeuvres • No stress symptoms	• Slight butterflies in pit of stomach • Heightened alertness • Start asking yourself questions or thinking about options and mentally providing answers to yourself • Some stress symptoms - hair standing on end, goose bumps	• Burning in pit of stomach or nausea • Easily distracted or may have difficulty focusing on problems • Asking yourself questions but no longer providing answers to yourself • Under stress, sweating, increased heart rate	• No feeling, numbness or extreme nausea • Tunnel vision starts to set in, you are only able to focus on one thing • Loss of situational awareness (airspeed, traffic, etc.) • High stress, rapid or irregular heartbeat

Instructor-Observed Student Symptoms			
• Student communicative • Student notices elements or situation of flight without prompting • Handles all tasks • Relaxed, noticeable head movement, looking around	• Less talkative or may ask more questions • May express lack of confidence or request assurance • Weaker scan technique • May have to focus on new task and need promoting to complete others • Becomes a bit restless or may mention feeling uncomfortable	• Stops asking questions or may seem distracted • Has difficulty answering questions or has a nervous voice pattern • May not respond quickly to verbal or physical control prompts • Head fairly still • Sweating visible, pale, clammy skin, colour behind ears or deliberate breathing	• Does not respond to questions • May stop flying and become passenger • No response to verbal or physical prompts on controls • No head movement • May freeze on controls • White skin tones or irregular breathing

Table 1: Safety zone symptoms