



## The Accident I Never Had

By Ron Ridenour, Soaring Safety Foundation (SSF) Trustee

In 1968 my father had a sailplane accident that almost cost him his life. He was flying his homebuilt HP-13A (a hybrid of an HP-11A fuselage and HP-14 wings) in a Region 7 contest in down state Illinois. He suffered numerous injuries, including a broken heel and crushed vertebrae in his lower back. Fortunately, after many months of rehabilitation, he recovered completely and was able to return to his flying career. He also continued to fly sailplanes competitively for many years. He owned a Standard Libelle, a Mini-Nimbus and an ASW-27 and flew them well into his 80's. Just last week he and I flew in the glider club's Aviat Husky. He still likes flying with me and is now enjoying life at 93.

I was 16 at the time of his accident and just learning to fly gliders and airplanes. I talked with him during his recovery and asked what went wrong. He was flying a contest task and was getting low. He described the wind was "brisk" at his altitude (no GPS readout in those days) and he was trying to glide into the wind to an airport about 3-5 miles away. At about 600 feet AGL he decided to abandon that plan and land in a field below him. He set up for the field and had turned final for the field when he said all of a sudden he had the feeling of falling like he was in an elevator accelerating downward. He pitched the nose down and continued to deploy the flaps. He was able to get the flaps deployed to about 45° before he struck the ground in a nose down attitude with the wings level. The impact area was small and showed very little forward motion and no rotational motion. The saving grace was that the HP-11A had a strong cockpit design, thanks to its designer Richard Schreder, built with 2 compound curve formed .050 aluminum skins and a square steel tube structure. I have no doubt that the structure absorbed much of the impact and probably saved his life. He said that his approach speed in the HP was about 45-50 mph. He theorized that perhaps a strong thermal had formed ahead of him at the far end of the field where he was going to land. This may have produced a temporary tail wind, from air rushing toward the forming thermal, on his approach path. The soybean field he crashed in was short of the mowed wheat field where he was intending to land. I remember when I arrived at the field that it was very hot (in the mid-80's) and light winds (the NTSB report showed estimated winds at 10 knots and gusting with updrafts and downdrafts). After thinking about these facts, they did jive with the "brisk" wind that my father described when he was in cruise flight. I remember his words of advice that he should have added more speed during the approach, especially when there was a gusty wind like he had perceived were the conditions that day. After that, I have always flown with a little extra speed (5 to 10 knots) on the approach when the conditions were anything but calm. The Soaring Safety Foundation recommends an approach speed of  $1 \frac{1}{2}$  times the stall speed plus  $\frac{1}{2}$  the steady state wind speed and all of the gust wind speed as a minimum.

I think that he may also have encountered a strong wind gradient that could have caused a temporary stall and he didn't have enough speed or altitude to fully recover. Wind gradients can be encountered on almost any landing. The NTSB listed my father's accident as an "undershoot" in a stall "mush". The included illustration from "The Joy of Soaring" by Carl Conway shows how a wind gradient can steepen the gliders approach path to the runway or field you may be trying to land on and cause the glider to fall short of the point of intended landing or even stall.

About 20 years later I was flying a Mini-Nimbus on a local cross-country flight. I was getting low and had decided to make a landing at a small grass airport. The wind had been fairly strong at cruise altitude (I would estimate 15-20 Knots). When I looked at the windsock it was nearly calm on the field. I had many hours of flying as an instructor and recognized the telltale signs of a strong wind gradient. As I turned onto final approach, I could sense that the ground speed of the glider had slowed considerably and it felt



like I was in a descending elevator. I had been carrying some extra speed and flying a steep approach path. I closed the dive-brakes and pitched the nose down to use the extra speed and altitude to successfully fly through the wind gradient that I encountered. I landed on the grass field runway and wondered if what I had experienced was similar to what my dad had encountered those 20 years before. Reflecting on the experience, I think that my father's sage advice probably saved me from having an accident and getting injured that day.

Thanks to my father's mentoring.....It was, The Accident I Never Had.

Illustration of the Wind Gradient effect from page 49 of the Joy of Soaring  
Written by Carl Conway and Illustrations by Gil Parcell

