

Column: Condor Corner

Issue: July 2014

Title: gliderCFL.com + My Condor Story

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Introduction

In this issue of Condor Corner, I announce the formal release of my long awaited website and feature my good friend Michael Abell in the next installment of “My Condor Story”.

gliderCFL.com

Ever since writing his excellent book on using simulation (Condor) to improve and advance cross-country and competition flight training, Frank Paynter has been relentlessly after me to do the same for the primary flight training I do. One side of me wants to write that book; the other side of me knows how much work it would be. Until recently, my defense against Frank’s onslaught was that I had already written my book; it was comprised of the 25 and counting Condor Corner articles, one of which I have written every other month for the last 4 years. Pretty much everything I would have put in a book is contained in one or more of those articles, and the entire collection has been continuously archived on Paul Remde’s Cumulus Soaring website (Thanks again Paul).

Besides the work and expense associated with producing a book, not to mention what I perceive to be a nearly non-existent market, I was concerned with the static nature of a book’s content. What I know and believe about flight education changes frequently enough that I was not comfortable with a medium as permanent as printed text. If I were going to publish my content, I would want to be able to modify it on a much more dynamic basis.

Also, as simulation-based flight education has gained traction, the number of requests for access to my content has increased, as has the volume of what I have available. I needed a better distribution mechanism than attaching scores of file to a series of email messages.

And finally, I was having trouble keeping track of my own content; knowing which version of a resource was the most current, and where the current resource was stored.

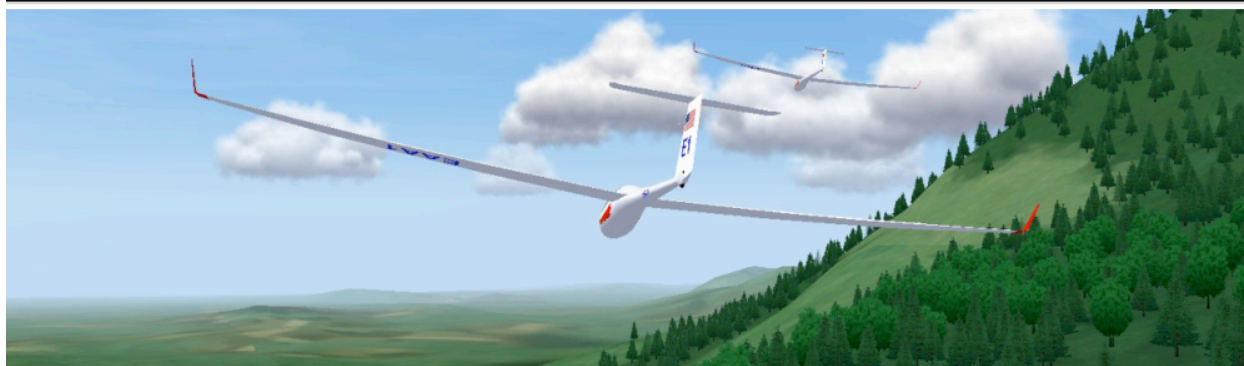
In this the age of online information, the solution to all these issues seemed to be a website.

While employed at the University of Wisconsin – Madison, I had worked with information technology (IT) specialists to develop web-based applications. I provided the content and organization; the IT folks took care of the rest. When I decided to finally pull the trigger on my website, I knew I needed help and I called on Megan Strickland (meganstrickland.com). Some of you may remember Megan as ½ of the father/daughter team from New Hampshire, trained in simulation, and featured in several Condor Corner articles and two of my SSA convention presentations (Philly, Reno). Megan just happens to provide professional website design and development services. It has taken a while, but my website is now up and running at **gliderCFL.com**.

Simulation-based Glider Flight Education

dedicated to the use of simulation in soaring instruction

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Entitled *Simulation-based Glider Flight Education*, my website is a work in progress. As I write this (May 2014), the site is running on a production server at Dreamhost.com and was developed using WordPress. The site is organized using the navigation bar located near the top of each page. All my Condor Corner articles are available, as are my Condor Setup and control assignment recommendations. The *Training Resources* hierarchy includes my Lesson Sequencing diagram, links to all the primary training lesson pages, and a link to Frank Paynter's Cross-country/Competition website. By the time you read this, I should have more of my existing training resources hosted; primarily Condor Replay, Flight Plan, and Flight Track files.

The hard work ahead will be the development and hosting of what I am calling "Study Guides", for each of the lessons in my syllabus. Study Guides will be designed primarily to enable simulation-based self-directed learning, but can also be used by CFIGs and glider flight training mentors as highly detailed lesson plans.

The "Contact" function at **gliderCFI.com** works. Let me know what you think.

My Condor Story

By Michael Abell – private pilot glider

September 17, 2011 was the morning I woke up, and thought, "Why have I never been up in glider?" Two weeks earlier, after undergoing a heart catheterization following a routine stress test, I was wondering if I was going to live past age 50. I rolled over, grabbed my phone and found Sylvania Soaring in Beloit, WI, and before my feet hit the ground, I had reserved two flights in a glider. Bucket list 1 out of 1.

I had only flown in commercial planes, and had never had my hands on the controls of a real aircraft.

Arriving at Sylvania Soaring, I was introduced to the woman who would be my ride pilot (and, as it turned out, my designated examiner a year later). The flights in the 2-33 were exciting, and on the second time up, I was given the controls a bit, but she had to take them back. ‘Seems I wasn’t supposed to play crack the whip on tow; I swear I was trying to follow the Pawnee!

I had the rides of my life, was hooked, and wanted to start taking lessons right away. Unfortunately, it was late in the season, so they said, “since you make computer games, maybe you would interested in talking to Scott Manley, one of our instructors, who teaches using a soaring simulation”.

I had some things going for me. I manage teams that build computer games; I have no barrier about using computers, or thoughts about them not being helpful. I knew building muscle memory and responses to situations, combined with decision-making, are common in games and simulations. I called Scott that week and we began meeting regularly. I ordered rudder pedals to go with my joystick so I could practice at home. I immediately understood Scott’s passion for simulation-based training. We got together about 20 times over that winter, but I didn’t really “get it” until the following summer when my actual flight experience began.

I practiced over the winter, and from the start, I treated the simulator as real flying. I have always played simulations this way; it is the realism I like, and I need some skin in the game to make it real. (At this point, all of you who have served flying real aircraft with real skin getting shot at, doing real dangerous things, please give this guy grace; you did the real thing and I am grateful).

A year and a half later, private pilot certificate with glider category rating in hand, flying with the wonderful folks at Mid-Georgia Soaring Association (MGSA) in Monroe, GA, and planning for my silver badge, I have some reflections on what I have learned flying for real and in simulation.

What I get from flying real sailplanes:

Fear, and all that fear brings to the mental process. There was no way for me to fully simulate, while flying on my computer, the lizard brain screaming at me. Sure, I pretend to play for real in simulation; my heart rate comes up, and I sweat if I screw anything up, but it is not quite the same. Real life makes you deal with the gremlins of the mind.

The bumps, the up and down, and the side-to-side are incredibly foreign to land lubbers. I learn by doing, and the input I get through all my combined senses can be overwhelming. G-forces, sounds, smells, and radio calls made it tough to tune in and tune out the right input. This was the biggest challenge for me to overcome until I trained it into myself. Once I overcame this barrier, however, all the training from Condor kicked in and quickly found a home.



"Michael, Scott, and SGS 2-33 serial #2?"

Having a good instructor in the glider helped me work through the blockers I mentioned above. Another blocker was that I had no idea thermals naturally eject gliders. I knew what was going on, but physically getting kicked around with all the sensory input gave me difficulty. Scott taught me right then I have to fly the glider and make it do what I want and fight with assertiveness to keep it in the thermal. It was a session that involved a usually quiet instructor, telling me in no uncertain terms, it was okay to get mad and let the adrenaline come up and make the glider to do what I wanted. It was one of those learning humps you get over and then remember forever. It had to happen doing the real thing.

Real flight also brings about those cool moments with another human being. Scott and I were up flying a 20 mile-long cloud street when I heard him say, "is this not the coolest thing in the world?" followed by "how about flying out into the sun for a while so your instructor can warm up!" Another one of those times was with a man who is older than me that seems to know the right answer to every question. After he landed and opened his canopy, with kid-like eyes and a grin a mile wide, he said, "This is just too cool". I want to love soaring always with that fervor.

Real flying lets me experience the feel, sounds, decision making under fear, and random conditions that arise; sky divers, confusing radio chatter, random events, physical fatigue and handling it, the last 400 ft. of altitude, issues from tree burble, a fox on the runway, the King Air

jump plane landing right next to me at the same time, and the blood sacrifice to the glider when getting in and out. Lastly, it is the honor and joy of carrying passengers, and the incredible responsibility one feels in the doing.

What simulation gives me:

Rope breaks at any time and what to do about it. Look at the statistics and tell me practicing this isn't important, and that this ability alone isn't worth simulation training and practice. Every time I am up with an instructor, I expect a rope break, but now I expect it every flight because of a setting on my computer that states, "greater than 50% of the times you fly, this is going to happen." This kept my attention on things that were serious. I now call it simulation-based training *and practice*.

I get to land out, by choice or by setting up the simulator for crappy blue days. Yes, I have caught myself digging out when I shouldn't have. I turned into a mountain once; but only once.

As a beginner, flying in simulation helped me build routines. I use written checklists; I keep my string straight by using pedals; I fly using angles; I set up my simulation stations for using a relief system (when company isn't around) and have my Camelbak over my chair. It wired me for what I have needed. More customized cockpits to come!

When I started flying in simulation, Scott told me that, before he was done with me, I would be able to determine my altitude, within 50 feet, when in the pattern, without looking at an altimeter. He had been hammering on me about using angles and finally turned on a simulation option that made not only the flight instruments disappear, but also the entire glider. Now it was just my brain and my sense of sight. After a couple of sessions I was able to use angular references to judge my altitude within 50 feet every time.



Learning to judge angles – Condor F2



Learning to judge angles – Condor F1



Learning to judge angles – Condor Cntl+F1

One of my most memorable Condor-based simulation sessions was a bit of a software bug. If you pause the simulation with the dive brakes open, go to the bathroom, chat, and then start again at altitude, the dive brakes stay open. With Scott looking over my shoulder, I was wondering why my sink rate was so high, and as in real life, I kept turning to the runway because the angle to the ground was decreasing at a rate I hadn't experienced. That moment was real, and I was sweating, as I did a low pass over the hangar and squeaked it in. I will add that Scott gave me the same lesson that summer in a 2-33 when I decided to check my dive brakes too early in the pattern. He held them open. I freaked in my head, and heard his voice say, "Dive brakes just failed open. 'Not a very good feeling, is it?'" Lesson learned in both simulation and real life!

One time I ran a series of fatigue tests on myself. I kept a log of what I had done, time of day, and amount of sleep. Simulation told me what I already knew, and reinforced how I screw up the simple stuff when I am tired.

Another weekend, I came home after a tough day at the airport feeling like I couldn't learn anything. I questioned whether I was cut out for soaring and toyed with the idea of quitting: I felt I had hit a wall. I am sure such days likely cause many to drop out of flight training and give up on their dream of flying. Instead, I was able to use simulation to work through the issues I experienced that day. I continued that practice and was never again that discouraged.

Other things I get to do in simulation...

I can replay and analyze my speeds and altitudes, understand the decisions I made, try something else, and compare the results.

I am able to set up crazy gliders doing crazy stuff in the pattern and experience having to deal with it. I can set a low cloud base, and play with blue days, analyzing how my different decision paths cause different results. If I fly during the week, I make sure I get 10 simulated take offs and landings with whatever crosswinds I need.

In closing:

I feel complacency creeping up on me every day, in everything. I know complacency can kill. Simulation-based practice and training is a tool in fighting complacency. Keeping it real, until the real becomes ingrained habit, and then keeping it real some more, is how I want to leave this world. Simulation training and practice makes me aware of “complacency thinking” in a safer environment. I have gotten up out of bed after doing something half-assed on a simulator (or in real life) and kept doing it in simulation until I got it right; then went back to bed.

What I cannot understand is the resistance I experience among pilots and instructors at the mere mention of simulation-based glider flight training (Condor). Interesting that commercial and military aviation invests billions in it, saving time, money, fuel, and lives. Simulation may not be a complete substitute for actual flight, but the soaring community and the rest of general aviation need to wake up and take advantage of the opportunities simulation affords.

I am new to the sport of soaring. I continue to be schooled by patient experts who have been doing this longer than I ever will. I am always willing to learn and never close my mind. All of the members of MGSA give me grace when my eagerness “to do it right” comes through. I get to fly with some of the most experienced people in soaring. I leave any airport feeling humbled I was able to take this path, and I am honored to learn from my fellow human beings who make this look easy.

Thank you to Scott for hatching me, Judy for certifying me, and all the wonderful people at Sylvania Soaring and MGSA and elsewhere who help me experience this sport "too good for kings."

About the Author

Michael Abell was the first of my simulation-based glider rating candidates to earn his private pilot certificate, and to-date, is the only person for whom I have provided not only simulation-based training, but all actual flight training as well. Michael’s simulation-based training was conducted almost entirely in person and in the off-season. When his flight experience training began in the spring, he was already procedurally trained to better-than private pilot standards; he knew how to fly a glider. Despite having no prior flight experience and his challenges adapting to the physical sensations of actual flight, Michael (age 50) soloed after only 27 flights, and 20 flights later earned his private pilot certificate; all in a single, short, Wisconsin soaring season. What his logbook does not reflect is the hundreds of hours of flight time his mind experienced in simulation.

Michael is currently an active member of the Mid-Georgia Soaring Association, has earned his A, B, and C badges (shooting for Silver soon), and has checked out in a number of gliders including SGS 2-33, SGS 1-26, ASK 21, Grob 102 & 103, and Discus CS.

Scott Manley recently traded his DG-303 and a few more Euros for an Alisport Silent 2 Electro. The back of his pilot's license reads: Commercial pilot: airplane single-engine land & sea; instrument airplane; glider. When not migrating along the 75 F isotherm, he flies as a commercial pilot and glider flight instructor for Sylvania Soaring Adventures in Beloit, Wisconsin. He also provides simulation-based glider flight instruction at-a-distance to glider rating candidates nation-wide.

Feel free to contact him at: smanley@wisc.edu or at **gliderCFL.com**