

**Column: Condor Corner**  
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**Author: Scott Manley - CFIG**

### **Introduction:**

One of the many advantages of simulation-based glider flight instruction is the ability to conduct/receive instruction from anywhere in the world, at any time of the day, and at any time of the year.

Here in Wisconsin, our real-life glider flight instruction season grinds to a halt sometime in November and starts up again in late April. Because I really enjoy teaching folks to fly gliders, late this fall I started taking on simulation-based students. In addition to keeping myself busy, keeping my teaching skills sharp, and advancing the art of simulation-based glider flight instruction, I was curious about how many students I could comfortably and simultaneously accommodate without having it consume my life. For me, the answer was six.

### **Yellow Pages**

I didn't go looking for any of my students. The first was a referral from the chief flight instructor at my commercial operation. A couple others had read the October-2011 Condor Corner article entitled "Glider Flight Instruction At-a-Distance", were intrigued by the idea, and contacted me directly. One of those inquiries asked if I would please forward a list of all the instructors in the country who provided simulation-based glider flight instruction at-a-distance. After I stopped laughing, I gave the person a call and we got to work.

My co-author, Frank Paynter, offers Simulation-based Cross Country and Competition Soaring training at-a-distance. One of his students wasn't quite ready for that level of training, so Frank referred him to me.

Paul Remde (Cumulus Soaring, Inc.) sells the Condor software and the supporting peripherals, so I often refer folks to him for the products and, if they are looking for training, he refers them to Frank or me. One of my Winter-6 was a referral from Paul.

### **Logistics**

One student was local and came to my place for in-person training. The others were spread all over the country, so their instruction was done over the phone using Condor and Skype (internet-based telephony).

Because my students all had day jobs/professions, most elected to be trained on weekday evenings; one preferred Saturday morning. Because they were spread out over all the time zones, my availability needed to range from late morning to late evening. I'm a retired guy, so that was no problem.

I met with each student once a week for about 2 hours. It didn't matter I was in Florida for 3 weeks in December or that one of my students regularly bounced back and forth between Arizona and Illinois. Our sessions continued as scheduled.

### **Report Card**

All of my cyber students are progressing very nicely. As of this writing (mid April 2012) spring has arrived and several of my fledglings are starting to fly for real at their local clubs. They are amazed and pleased with how well their simulation-based training transfers to real flight. Two of my protégés have pretty much completed their simulation-based training and will start flying with me for real in the next couple weeks. Both will very likely have soloed by the time you read this.

### **True Confessions**

Rather than simply reporting on the Winter Crop, I thought you might be interested in hearing directly from them. So, I asked each of my cyber students if they would share with you their reasons for electing simulation-based training and offer their thoughts on the process and the results. For a number of very good reasons, my students shall remain anonymous.

### ***Cyber-1***

My club, excellent though it is, suffers from precisely the problems described in the February 2012 Condor Corner article; too few instructors, too little equipment, too little good weather. Getting all of these components to come together seems akin to holding a winning lottery ticket. Within my first year of membership, I had worked hard to meet my fellow members, to understand the club's policies and politics, to do my line duty, and generally to learn as much as I could about the sport and my club. While all this was a great experience and I had made many new friends with similar interests, I was nowhere near achieving my goal of becoming a glider pilot; the reason I had joined the club in the first place.

So about 5 months ago, after reading about his success training glider pilots at-a-distance, I contacted Scott Manley asking if he would consider taking me on as a student. Being very familiar with simulation-based training in the medical profession, it sounded like it might just work for me in gliding. In short, my simulation-based glider flight training has been an amazing turning point in my entry into soaring.

Instead of waiting for the stars to align in the real world, I have been making real progress and the capacity to practice daily has meant that I retain what I am learning. The whole process had been very satisfying, very efficient, and VERY cost effective.

So, how well does it work? Two days ago, for the first time since starting my simulation-based training, I had the opportunity to fly a real glider with one of club's most experienced pilots. Both of us were amazed at the progress I had made over the winter.

Now, instead of growing frustrated and quitting the sport, I look forward each day to climbing into the cockpit, actually flying, and being a very active member of my club.



**Dealing with a Rope Break at 50 Feet**

### ***Cyber-2***

I woke up one Saturday morning and asked myself “Why have I not yet gone up in a glider?” By 3:00 PM that day, I had flown twice and seriously caught the soaring bug. The glider operations manager recognized the geek in me, and referred me to one of their instructors who used simulation.

I make a living leading teams of software developers who produce high-end video games. I have been playing video games and flying flight simulations all of my adult life, and I am pretty good with a joystick. What I didn't realize, until I started working with a glider flight instructor, was how little I really knew about flying.

Why is Condor important? Within two weeks, I had mastered the basics of controlled flight. Shortly thereafter, I was applying those fundamentals to normal and crosswind conditions, executing scores of takeoffs, aerotows, and landings during each of my many 2-hour practice sessions. I have already experienced more than 50 premature tow terminations under varying conditions and scenarios. The pace of learning and the extent of experience available in simulation-based training are amazing.

Having recently fought my way back from a serious illness, I now have a whole new appreciation for being alive. Simulation-based training provides me with the opportunity to hard-wire my brain and body to better recognize, prevent, and manage the events that kill or injure so many in our sport. I truly believe this higher standard of training will save my life someday. I will continue to employ simulation-based training long after I

have earned my private and commercial certificates, flight instructor rating, and all my badges.

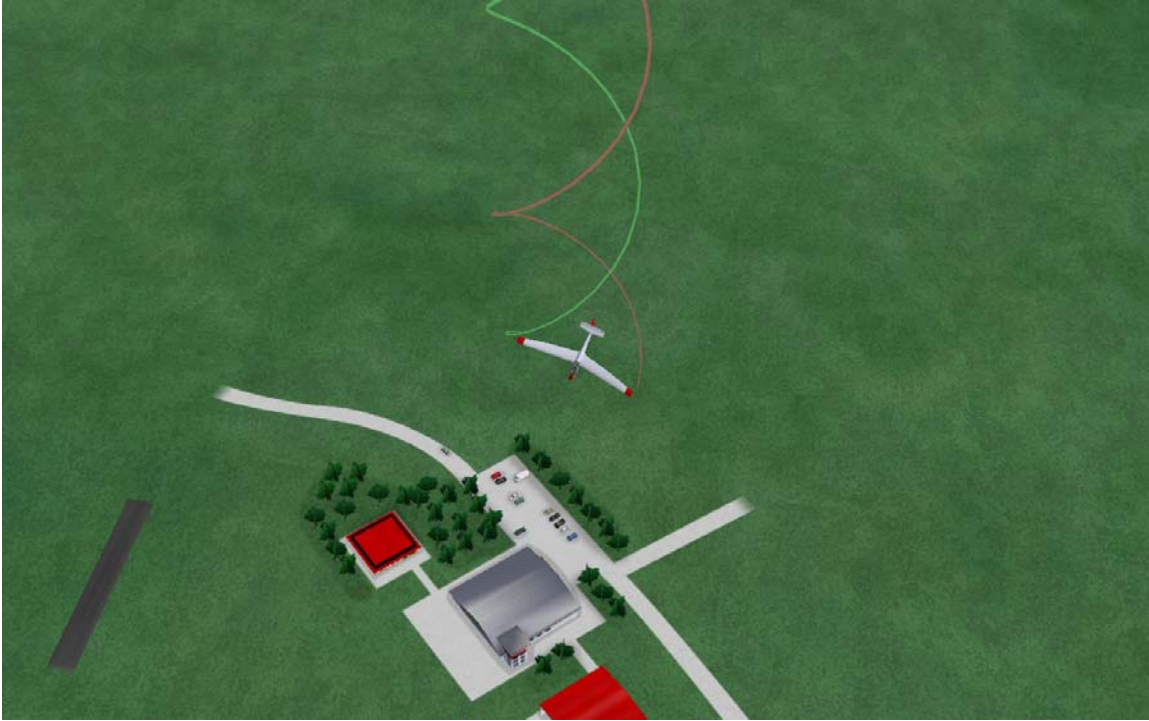
### ***Cyber-3***

I elected to take simulation-based training so I could get as much practice and experience gliding as possible on my own schedule. I started taking lessons in a real glider in Arizona during the first half of 2011. With each two-hour round trip to the glider port, I would get to fly two or three instructional flights. I really enjoyed the real-life lessons and hoped to find time to train each weekend. To maximize my learning, I would record each lesson with a GoPro camera and, during the week, would review my flights to understand what I was doing well, and what skills needed improvement. After spending three months and about \$1300, I had logged about 10 hours of flying time. I wanted to continue with my “real life” lessons, but between my increasingly busy work travel schedule and my other commitments, it was becoming increasingly difficult to consistently make it to the glider port.

Work took me to Chicago for the summer, but without a car it was too difficult to venture to a nearby glider operation on a consistent basis. I decided to give Condor a try. Over the summer, I used Condor to practice the skills I had learned in Arizona. In October 2011, I took a Cross Country soaring lesson in Condor with Frank Paynter, which further fueled my desire to become a proficient glider pilot. After assessing my skill level, Frank referred me to Scott Manley. With work sending me between Chicago and Arizona every few weeks, I decided to give simulation-based training a try with the hope of soloing a real glider during 2012.

My simulation-based flight training has been very effective. During the first 15 minutes of my “real” gliding lessons, with adrenalin in my blood, I had to learn how to take off, release, control airspeed, fly a traffic pattern and land. By comparison, Condor enables each lesson to be much more specific and therefore the training is much more organized and methodical. Each lesson builds on the prior lesson. In my first Condor lesson, I simply started already in the air and learned in detail how to control the speed of the aircraft. In the second lesson, I learned about the aerodynamics of turning flight and over the next week focused on mastering coordinated turns. In subsequent lessons the focus was landing, aerotow, cross wind takeoffs and landings, dive break failures, rope breaks in different wind conditions at different altitudes, etc.

My three months of real life glider flight training provided me with 10 logged hours over 17 flights. In roughly the same span of time, my simulation-based training has afforded me an additional 53 hours of experience spread over 330 flights. The added experience, the organized methodology of simulation-based training, the ability to focus on specific skills, and the opportunity to repeatedly fly variations of specific tasks, have combined to make me much more confident in my ability to proficiently pilot a glider.



### **Spin Recognition and Recovery**

#### ***Cyber-4***

I had taken some rides in gliders many years ago and always thought I would learn to fly one someday. With both kids off in college, it seemed like someday had arrived. Since it was the off-season, I started looking for books to read to get a little head start. Long story short, I came across Paul Remde at Cumulous Soaring who introduced me to Condor and suggested that I contact Scott to discuss simulation-based training at-a-distance.

At first, I was a little skeptical, but after talking to Scott and hearing about his success with other students, I decided to go for it. I have been training now for about 3 months and can honestly say my experience has far exceeded my expectations. Putting aside the fact Scott is a terrific instructor, I believe simulation-based training has allowed me many more hours of practice than a typical student gets in a real glider. Also, I have been able to work on riskier drills such as low altitude releases that are generally not practical to do in the real world.

My weekly training sessions begin with an interactive viewing of replay files (movies) where I receive detailed instruction about what should be happening and why. I then spend time separately practicing those tasks and send my replay files to Scott for critique. I like this process a lot because it allows me to first get a clear picture in my mind of what a properly performed maneuver looks like. It seems I am able to detect my own mistakes quicker and critique my progress more effectively when I already have this mental image.

In summary, I find simulation-based training to be an excellent complement to real life training. In fact, I recently took my first two instructional flights in a real glider. Clearly my simulation-based skills had transferred to the real world. My airspeed control, turn

coordination, and ability to fly an unassisted aerotow in turbulent conditions, had my instructor asking "Are you sure you haven't flown a glider before?" I feel confident the ability to practice tasks repeatedly under different conditions is a key advantage that will make me a better pilot in the long run.

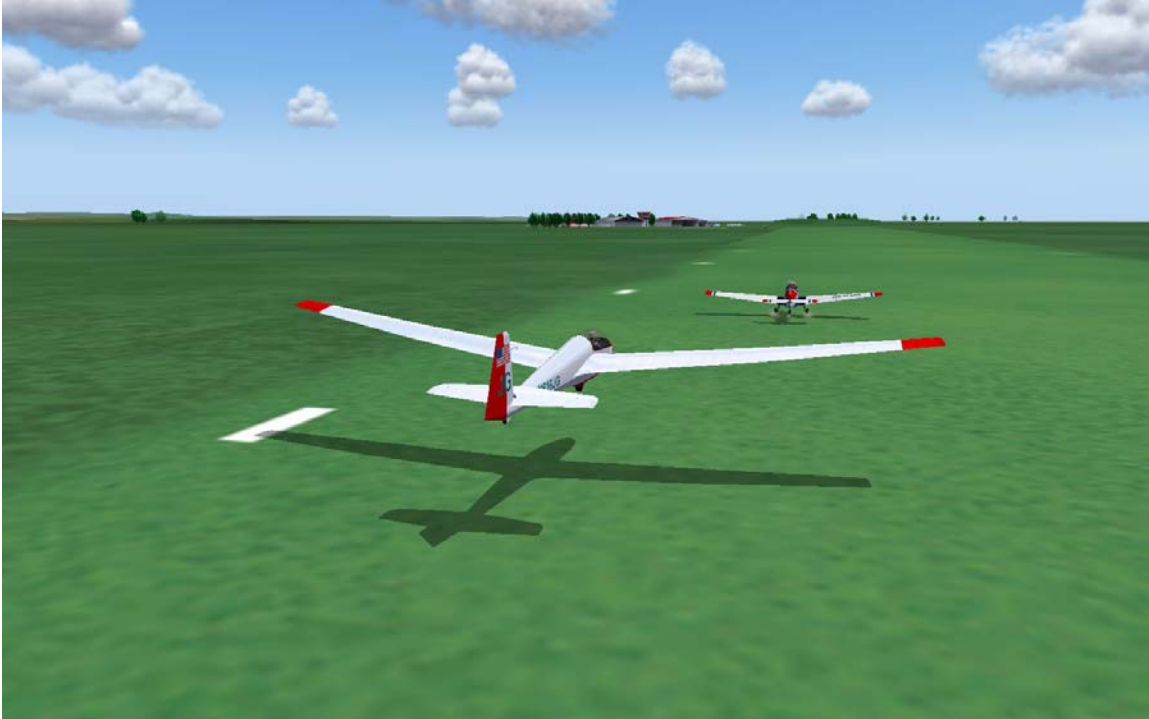
### *Cyber-5*

For me, the most striking aspect of Scott's simulation-based glider flight training has been the knowledge-based confidence I have gained about how the machine that keeps us in the air actually operates. Quite frankly, the glider flight instruction I had received prior to working with Scott had not instilled that confidence. I was technically close to soloing, but had very little idea how the control surfaces actually worked, except in more than a few narrow circumstances, and, quite honestly, that frightened me. Because of that lack of confidence, I was seriously considering walking away from soaring.

The work I have done with Scott over the last few months has changed that dynamic. The scenarios Scott has built into my simulation-based training, and level of detail with which he lays out what is happening and why, have given me a wide variety of experiences in circumstances and situations, some of which would be difficult if not impossible to experience in real life, except in an emergency. Not knowing the correct response at that time could mean the difference between life and death.

Because of the weather, my glider club has yet to fly a single day this spring (as of mid April). I am confident, however, that when I finally climb into the seat of one of our club's aircraft, my newfound feelings confidence and my level of understanding will make all the difference.

Finally, I want to be clear I am not talking about overconfidence. I am talking about a confidence based on competency, understanding, and a respect for the limitations of the aircraft we fly and our abilities to fly them.



### **Perfecting the Aerotow Takeoff**

#### ***Cyber-6***

I am a student pilot who has been taking Condor simulation training with Scott Manley for several months. I also take glider flight instruction at a glider port in the area and the two types of training are complementary.

My experience with Scott has been nothing short of fantastic. As one who has been exposed to several certified flight instructors, Scott is far and away the best. His teaching skills are remarkable and his knowledge of our sport is vast. Most importantly, he is able to not only tell me what to do, but explains the logic behind every aspect of flying, such that it is remembered thoroughly. We have the opportunity to stop the simulation and discuss a topic in great detail before moving on with the flight. And the experience of flying in Condor translates very well to the real world.

What is also so impressive is that Scott has spent many hours figuring out how to teach Condor over long distances rather than "in person." There is nothing in Condor that provides for this type of training, but due to his resourcefulness, ingenuity, and intelligence, he has managed to develop a method that works marvelously.

Simulation has been a godsend for me. It allows me to learn in a controlled environment that is very different from learning in the air. Simulation allows for a very orderly progression through all the phases of teaching that a student requires. With the aid of Condor's Pause and Refly functions, one can practice maneuvers until they are learned with sufficient proficiency. This can't be done in the air because there isn't really time or opportunity on the same flight to have specific teaching points discussed and learned because one has to continue to fly the glider.

My point is that simulation-based glider flight training provides a unique opportunity for an excellent teacher, in a controlled environment, to convey the knowledge and skills necessary to be a glider pilot. It has augmented my skills as a pilot and my ability to learn in the real life setting.

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Scott Manley owns, and occasionally actually flies, a DG-303. The back of his pilot's license reads: Commercial pilot: airplane single-engine land & sea; instrument airplane; glider. He lives in Madison, Wisconsin and flies as a commercial pilot, glider flight instructor, and tow pilot for Sylvania Soaring Adventures in Beloit, Wisconsin.