

**Condor Corner - April 2012**  
**Using Glider Flight Simulation to Promote the Sport of Soaring**  
**By Scott Manley - CFI-G**

**Introduction:**

Frank Paynter and I jointly published the first Condor Corner article back in April of 2010. So, with this month's article, Condor Corner celebrates its 2<sup>nd</sup> birthday. Let's hope we're not entering the "terrible twos."

In the April 2010 issue, I promised to expand on the uses of glider flight simulation beyond primary flight training. One of the suggested applications was "Promoting the Sport of Soaring." So, in this month's installment, I would like to report on some of the ways I have used glider flight simulation to introduce the flying and general public to our amazing sport and to entice them to join us.

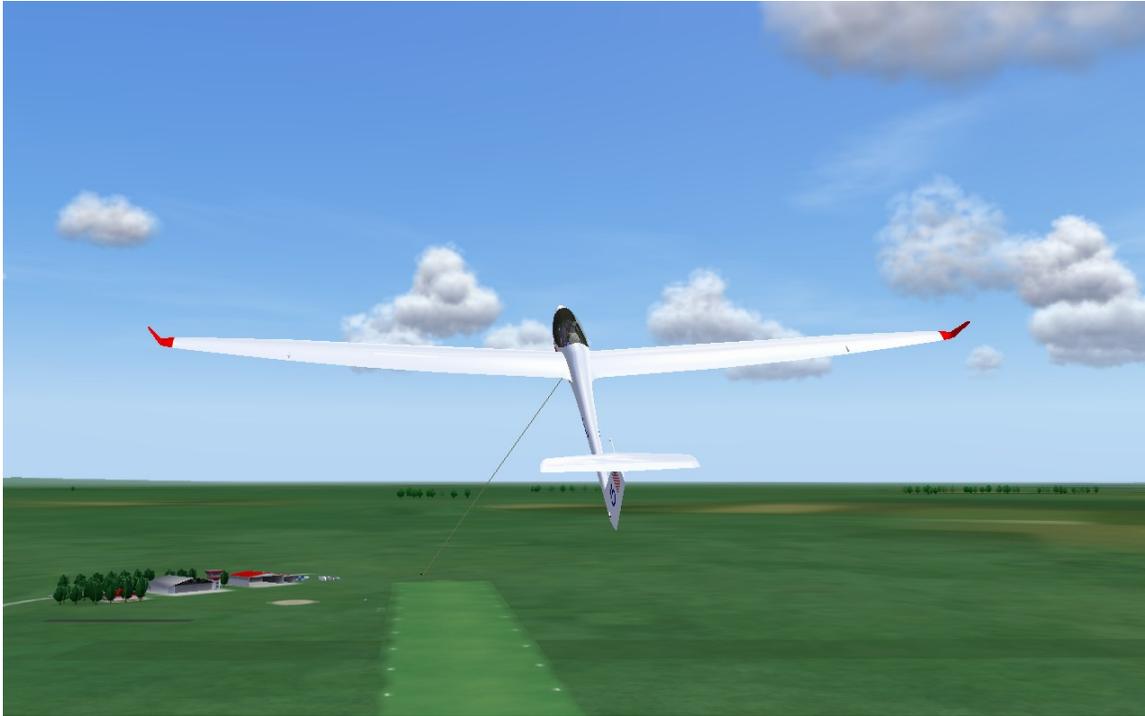
My target audiences have been pilot groups and organizations, professional, social, and service organizations, high school-age young adults, and children ages 7-15.

**Pilot Groups/Organizations**

If you ask a group of glider pilots how many of them flew powered aircraft before becoming involved in soaring, you will find it is a large majority. It seems then that pilot groups/organizations would be fertile ground for prospecting. Specific examples include Experimental Aircraft Associations (EAA) chapters, private and university flying clubs, and even commercial flight schools (an introduction to soaring would reinforce the concepts learned in the aerodynamics section of any private pilot airplane syllabus). These groups and organizations usually have regularly scheduled meetings and are almost always looking for an interesting presentation to spice things up.

When speaking to power pilot groups, I often find them particularly interested in comparisons of performance between what we fly and what they fly. I often start my presentation by having the audience imagine my medium performance DG-303 positioned 1 mile directly above their home airport. I then begin listing all the "nearby" airports within gliding distance and watch as one jaw drops after another.

Other topics of interest to pilots are instrumentation comparisons, flight control comparisons (such as descent control using spoilers vs engine power), typical soaring activities, including flying in lift (thermal, ridge, wave), cross-country flying, racing, and aerobatics, launch methods (tow, winch, self-launch), and the dead-stick approach and landing required on every glider flight.



**Winch Launch Simulation**

As with any presentation to human beings, the more visual the presentation the more effective and long-lasting are the impressions. All the concepts described above are much more effectively conveyed using either video recordings of actual events or a very good simulation. For example, using Condor, I could produce a very realistic representation of a winch launch, showing the event not only from inside the cockpit, but also from a variety of perspectives outside the glider. My presentations are filled with short video clips of aerotow launches, traffic patterns, thermal flying, ridge flying, accuracy landings, etc.; all generated using simulation.

#### **General Public – Non-Aviation Adult Organizations**

If you look more generically at the demographics of glider pilots, you will find them to be well-educated and self-motivated, successful in their professional careers, and actively involved in their professions and communities. They are likely to belong to professional associations and community service organizations, for example, Kiwanis and Lions clubs. Again, these groups often look for interesting presentations on a variety of topics.

My presentations to professional and service organizations tend to be more generic and more aesthetic. For example, rather than talking about launch methods, lift sources, and landing out, I introduce those same concepts as “how we get up there,” “how we stay up there,” and “what happens when we can’t stay up there.” I use Condor to generate scenes of gliders flying in aesthetically pleasing venues such as along mountain ridges and/or near bodies of water. Most of the perspectives are from the outside of the glider with emphasis on the elegance and beauty of soaring flight.



### **The Elegance and Beauty of Soaring Flight**

Another source of future glider pilots is the commercial and social organizations offering adults of all ages exposure to a variety of outdoor activities, including sailing, skiing, motor sports, and of course flight experiences. Many of these groups have regular social meetings and again are usually open to presentations. Since these groups are adventure seekers, I tailor these presentations to include simulations of the more exciting aspects of our sport including winch and aerotow launches, high-speed ridge runs, and aerobatics.

#### **Young Adults**

An introduction to soaring flight can easily find its way into the curricula of your local high schools. Some high schools actually offer full elective courses in aviation and soaring flight is often covered in a specific module. Instructors and students in these courses appreciate, and often seek out, real-world expertise and experience in the forms of guest presentations and field trips.

Even if aviation-specific electives are not offered, the aerodynamics of soaring flight are easily related to the laws of physics, and our sport is filled with excellent examples of the application of mathematics.

Young adults are often surprised to discover they can be qualified to solo a glider at age 14 and to act as pilot in command (PIC) of an aircraft carrying passengers before they are able to drive a car. If nothing else, a seed has been planted in young mind.

High schools extra-curricular and after-school activities abound. Imagine starting a soaring club at your local high school where students learn to fly in simulation during the school year and are rewarded with an actual glider flight just prior to their summer break.

### **Kids**

No organization does more to introduce kids to the wonders of flight than the Experimental Aircraft Association (E.A.A.). Over the years, the E.A.A Young Eagles program has provided more than 1 million kids with a ride in an airplane.

Each summer, the EAA holds its annual convention, AirVenture, at its headquarters in Oshkosh, Wisconsin (my back yard). I personally became involved in soaring in 2001 after talking to some guy named Burt Compton, who was staffing the SSA booth in one of the exhibit halls at Oshkosh.

In recent years, SSA members Anne Mongiovi (IL), Lee Murray (WI), have taken the initiative to ensure that soaring flight would be represented at the world's largest aviation event. In 2010, they recruited a number of volunteers (including your author) to help staff the Aircraft Design booth at KidVenture, a special venue at Oshkosh where kids ages seven to fifteen are exposed to a wide variety of aviation-related experiences. I used the opportunity to set up a Condor simulation station and introduce hundreds of kids to the thrill of flying a glider.

In 2011, under the leadership of SSA Director Gerry Molidor, and with some financial support from the SSA, we secured our own **Soaring Flight** booth at the entrance to KidVenture's main hangar where I arranged to have three simulation stations set up. One of the stations used a 6-foot screen projection as a monitor. Every 10-15 minutes, for 6 ½ hours a day, for seven straight days, I taught another 7- to 15-year-old-kid how to control a glider's airspeed by reference to the horizon, and make coordinated constant-speed turns. Then, if they showed sufficient discipline, I taught them to loop the glider (basically an airspeed control maneuver), and to roll the glider to inverted flight and back again to blue side up. Finally, I would turn the wing tip smoke on, sit back, and watch as my young protégé flew an air show for his or her proud parents. It really is amazing what you can teach a seven-year-old kid in 15 minutes.

In my two years at EAA Kidventure, I have personally introduced more than 400 kids to the thrill of glider flying. The EAA has statistics showing that a large percentage of kids exposed to flight early in life go on to become pilots at some point.



**Future CFG Megan Hart**

And I had help. Other SSA members staffed the other two simulation stations as their schedules allowed. Everyone's favorite instructor, however, was Megan Hart, the 14-year-old daughter of Bob Hart, a friend of Gerry Molidor. After providing Megan with a

quick introduction to my instructional routine, I deputized her as an assistant CFIG. I estimate Megan handled at least another 100 kids on her own that week, in addition to modeling, with her sister Kaylin, for the booth's large color graphics.



**Future Glider Pilot**

As part of our KidVenture efforts, Anne Mongiovi took pictures of kids in a glider (yet another form of glider flight simulation). After the convention, Anne went to great lengths to send each future glider pilot his or her picture along with a certificate and information on the SSA, including where to fly.

So, there you go. Lot's of ways you can use flight simulation to promote the sport of soaring for current and future generations.

*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.*