

Column: Condor Corner
Issue: March 2013
Title: Potpourri - II
Author: Scott Manley - CFIG

Introduction

In this issue of Condor Corner, I would like to bring you up-to-date on a few things, tell you about some work in progress, and let you know about some fun and interesting stuff coming in the not-too-distant future.

2012 Winter Crop - Update

Last winter I took on six simulation students. Five students (CA, WA, TX, IL/AZ, CT) were at-a-distance. WI was local, so we did our simulation-based training in person at my place. CA, WA, TX, and IL/AZ all had some level of prior glider flight training and contacted me after being frustrated by the pace, cost, and/or quality of the glider flight instruction available at their local club or commercial operation. CT and WI had no prior flight experience, had their flight training preempted by winter, and saw simulation as a way to get a jump-start on their real-life training the following spring.

After completing their simulation-based flight training last winter, five of my six students soloed this past summer (2012). IL/AZ's was close to solo, but got sidetracked by his work. CT and WI (zero flight experience) soloed after about 20 flights (based on their ages, the rule of thumb would have predicted closer to 40 flights). WI went on to earn his Private Pilot certificate in October. CA and TX will likely be private pilots by the time you read this.

2013 Winter Crop

Six simulation students kept me a little too busy last winter, so I decided to cut back this year. I have three primary students, all at-distance (VT, UT, MN). Each is doing very well and I expect to have them all flying, in simulation, to better than private pilot standards by spring.

Practical Test Preparation

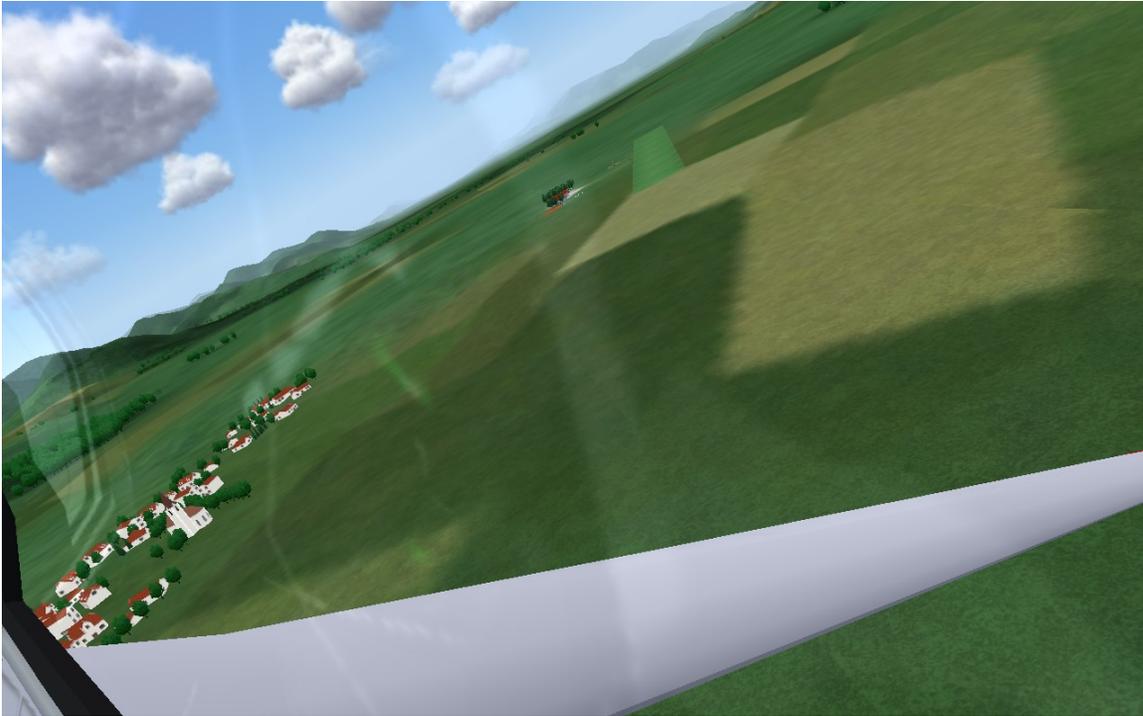
2012-CA is studying hard in preparation for his practical test. I've been meeting with him regularly, via Skype, to help. To prepare my students (real and simulation-based) for the oral, I developed a document based on the practical test standard, containing questions that will likely be asked on an oral. The preparation document doesn't always directly answer a question, but it always provides a reference to where the answer can be found (FAR, AIM, GFH, etc.).

To help 2012-CA and my other simulation students prepare for the flight portion of their practical test, I developed a simulation-based flight test composed of a briefing document and a series of seven Condor Flight Plans. For each flight, the candidate is briefed (via the briefing document) on the flight maneuvers to be performed, just as a flight examiner would do before each flight on a practical test. The candidate then flies the flight in Condor and saves it as a Replay file, being on the honor system to fly each flight in the

series only once. Having conducted all the flights in the test series, the candidate sends me their set of Replay files, and I play the role of examiner. I watch the Replays and evaluate whether the candidate met the practical test standard (PTS) for airspeed, bank angle, etc., exhibited good situational awareness and judgment, scanned for traffic, used checklists, handled distractions, dealt safely with unusual situations, etc. Finally, the candidate and I review the Replays together. I critique their performance on each flight, and let them know whether they “passed” their simulated flight test.



**Condor Flight Test Series
2012-TX Dealing with a Tug Power Failure at 300 ft AGL
(This was “not” in the pre-flight briefing)**



Unlike a real-life flight test, however, where some PTS area-of-operation tasks are not possible because of weather or local terrain (e.g. no crosswind, no thermals, no ridge), the Condor flight test series includes “everything” in the PTS (accept slack rope recovery; not easily simulated in Condor). My students report the simulation-based flight test to be every bit as nerve-racking as the real thing.

In addition to helping prepare the student for their real-life practical flight test, the Condor flight test series is a good check on how well I have done as an instructor.

Radio Controlled (RC) Aircraft Simulation

Spouse and I are wintering in Florida this year, and as we headed out onto the beach one day, there was a guy flying a radio-controlled (RC) airplane. I have wanted to try flying RC for as long as I can remember. A couple guys at my glider operation fly discus-launched RC sailplanes, and Dan Harder, one of my glider students (actually a brand new private pilot as of November) flies an electric self-launching RC glider.

So Dan and I switched roles; I was his student and he was my CFIG-RC. Dan used Condor pretty extensively during his real life primary training and is continuing to use it as he prepares to fly higher-performance gliders and to go cross-country. He knows firsthand the benefits of simulation-based learning. So I was pleased, but not surprised, when Dan highly recommended I purchase an RC flight simulation software package called PhoenixRC, and learn to fly RC in simulation, before trying to fly a real RC aircraft. I discovered the source of Dan’s enthusiasm for RC simulation on a recent visit to his workshop, where he showed me the almost-unrecognizable remains of his original RC glider. Apparently Dan had not initially followed his own advice.

I now have about 20 hours of RC simulation flying under my belt, and after leaving no small amount of simulated RC aircraft wreckage strewn about the software-generated flying fields, trees, and fences of PhoenixRC, I think I am actually getting the hang of it. The same level of experience and proficiency would have taken months of real world RC flying, and I certainly would have spent a lot more time and money repairing my RC glider than I would have flying it.

Once again, simulation-based flight training proves its value.



RC Flight Simulation or Photo of an Actual RC Glider Flight?

CFIG Training

I have been working with a couple CFIG candidates (actually one just passed his CFIG practical test. We continue to meet as colleagues). Both of my protégée's approached me for help for the same two reasons; each wanted to incorporate simulation-based flight instruction into their training regimen, and neither could find a CFIG who seemed to know to train another CFIG.

I was certainly well positioned to help with the simulation requirement, but I too have yet to train a CFIG. This is a new challenge for me, and one I welcome as an opportunity to expand my qualifications as a CFIG.

The operative word in the phrase "Certified Flight Instructor" is "**Instructor**". The challenge with training a CFI is not in teaching the candidate to fly. A CFI candidate is required to hold at least a commercial pilot certification, which means the candidate already knows how to fly. The challenge then, with training a CFI, is in teaching that

person how to “teach”. As it turns out, I am rather uniquely qualified (at least among CFGs), in that I hold Bachelor’s degree in secondary education. I am a professionally trained and experienced educator.

My challenge will be the hard work of developing a curriculum for the training of a CFG; syllabus, lesson plans, presentations, exercises, evaluation, etc. I will do some research first to see if these resources already exist. If not, I will be happy to share what I develop with the CFG community.

And speaking of sharing:

Web site

Since earning my CFG certificate in 2006, I have collected and developed a lot of valuable flight training resources: books, Internet sites (URLs), graphics, animations, simulation-specific syllabus, instructor notes, lesson plans, Condor files (Replays, Flight Plans, Flight Tracks), the Condor Corner article archive at Cumulus Soaring, PowerPoint presentations from SSA conventions and public promotional venues, etc. The need to easily share these resources with an increasingly diverse constituency has motivated me find a way to do that, other than emailing attachments.

Frank Paynter, my Condor Corner co-author, is after me (rather relentlessly I might add) to write a book on how I use flight simulation to conduct primary instruction; a companion book to his excellent treatise on cross-country and competition flying. He believes making my instructional materials more readily available will encourage more glider flight instructors to embrace this new instructional paradigm, and cites himself as a typical CFG; much more likely to use the teaching resources developed by others than to go through the very hard work of developing his own. His argument has merit.

I also need an easy way for my simulation-based students to download the Condor files and other resources we use in our online sessions.

Finally, I need a venue for getting my act together. My training resources are spread all over God’s creation, are increasingly difficult to find, and are not organized or grouped by the needs of my constituency. All this makes my life more difficult, and thus the true motivation to do something about all this.

With a little luck (hard work - being the source of almost all luck), I will have the beginnings of my web site up and running by the time you read this.

New Initiatives

Here are a couple things you may find interesting: one in conception stage, the other just taking shape in the old noodle.

CGI-G (not a typo)

2012-WI was an exceptional simulation-based student. He was eager to learn, reliably showed up for his instructional sessions with his homework done, was technologically advanced (at least by my standards), and was a hoot to work with. After working together in simulation all winter, 2012-WI and I flew together at Sylvania Soaring Adventures in Beloit, WI and completed his real life flight training over the summer. He is now a private pilot with a glider category rating, is training online with Frank to learn cross-country and competition flying, and wants to be a CFIG who employs simulation-based instruction.

A CFIG needs to hold a commercial pilot certificate (14 CFR 61.183(c)). Because of his limited flight experience, 2012-WI will need at least 25 hours and 100 flights in a glider (14 CFR 61.129 (f)(1)) to be eligible for commercial privileges. If he had been trained conventionally, he might be closer to those totals. Simulation-based training, however, dramatically reduces the actual number of hour/flights needed to achieve certification standards, so 2012-WI's more efficient training has left him short of the commercial glider requirements. (Critics of simulation-based flight training might call that a drawback).

So until 2012-WI:

- 1) logs the required flight experience for commercial pilot eligibility
- 2) passes his commercial pilot aeronautical knowledge test
- 3) completes his commercial pilot flight training
- 4) passes his commercial pilot practical test
- 5) passes his CFIG aeronautical knowledge tests (that's right, there are two of them)
- 6) completes his CFIG flight training
- 7) passes his CFIG practical test,

his dream of becoming a CFIG will need to wait , but his goal of becoming an “instructor” may be much more imminent.

Because simulation-based instruction is done on the “ground”, you don't need to be a certified “flight” instructor to perform it. In fact, you don't need to hold a pilot certificate of any type. A Certified Ground Instructor – Basic (BGI) will do nicely. To be eligible for a BGI certification, one need only satisfy the BGI equivalent of #5 in the list above.

A ground instructor certificate would enable 2012-WI to begin instructing now, even as he works toward his commercial pilot and CFIG certifications. His BGI privileges would authorized him to provide:

- 1) ground training in the aeronautical knowledge areas required for the issuance of a sport pilot, recreational pilot, or private pilot certificate
- 2) ground training required for a sport pilot, recreational pilot, and private pilot flight review
- 3) recommendations for the knowledge tests required for the issuance of a sport pilot, recreational pilot, or private pilot certificate

Any simulation-based flight instruction performed by a BGI could be logged by a glider rating candidate as ground instruction required by 14 CFR 61.107(a) (private pilot flight experience).

Once he is certified as a BGI, 2012-WI and I intend to work together as an instructional team. 2012-WI will act as primary instructor, responsible for the overall training of the candidate, and providing all ground instruction, knowledge test recommendations, and simulation-based flight instruction. My responsibilities as CFI-G will include providing the required flight experiences, flight performance critiques (including reporting back to the primary instructor), and practical test endorsements.

Some of you may remember the February 2012 Condor Corner article “Simulation-based Flight Instruction at Clubs and Commercial Operations”, where I proposed the idea of “Certified Ground Instructor – Glider” as way to quickly, easily, affordably, and dramatically augment the instructional capability at a club or commercial operation. If you missed that article and/or are interested in reading it again, it is archived in the Documents section, on the Condor page, of Paul Remde’s Cumulus Soaring website (<http://www.cumulus-soaring.com/condor.htm#Documents>).

Note:

I made a statement in Feb. 2012 article I now believe to be in error (‘made an assumption instead of doing my homework).

I stated the aeronautical knowledge requirement specified in 14 CFR 61.213 (a)(4)(i) (Subpart I - Ground Instructor – Eligibility requirements) could be satisfied by passing the Private Pilot Glider written. As it turns out, a Ground Instructor – Basic (BGI) certificate or rating has its own specific knowledge test.

Based on my experiencing having taken both the commercial pilot glider and CFI glider knowledge tests, I would be willing to bet there isn’t \$.02 difference between the BGI and PP knowledge test for glider, and am equally aware of the futility of making that argument with the Federales.

Heresy, heresy, and more heresy.

I am certain there are many within the glider flight training community who still believe the best and only way to teach someone to fly is in a real aircraft in actual flight, and that all this talk of conducting simulation-based glider flight instruction, using ridiculously inexpensive software, running on commonplace computer equipment, is tantamount to heresy.

Even more unbelievable, I suspect, is the assertion flight instruction need not to be done in person; that it can be effectively and efficiently conducted at-at-distance, with the instructor and student in vastly different parts of the world, any time of the day, and any time of the year.

So try to imagine the reaction, of those invested in the status quo, to this assertion:

I believe, given the proper resources, candidates for private and commercial pilot certificates with glider category ratings, could entirely manage their own flight-training development, and in large part, teach themselves to fly.

I also believe they can and should be empowered to do that.

This new heresy will be the topic of my next Condor Corner, assuming I am not stoned to death before then.

Answer:

The RC glider graphic above is a screenshot taken from the PhoenixRC flight simulation.

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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.