

Column: Condor Corner
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Introduction:

After two years of writing this article every other month, I had pretty well exhausted all the major topics I had planned on covering. I did have a few smaller topics in mind, but none of them would have filled even one page in the magazine. Collectively they do, however, so here is a potpourri of glider flight simulation items.

Reno Convention Update

FIRC

For at least as long as I have been a glider flight instructor (2006), the Soaring Safety Foundation has offered a Flight Instructor Refresher Clinic (FIRC) in advance of the SSA convention. I like attending SSF FIRCs because they are glider specific and because I learn a lot from the interaction with other glider flight instructors. CFIGs need to renew their certificates every two years. To keep my teaching skills sharp, keep up on the latest changes, and ensure my certificate doesn't lapse (requiring me to retake the CFIG practical test), I renew my flight instructor's certificate every year.

The topics and discussions at FIRC's often center not only on the challenges of how to effectively teach people to fly a glider, but also on how to get them to think and perform competently and safely as "pilots in command" of an aircraft. As these discussions ensue, I have a hard time not sounding like a broken record as I point out time and again how simulation-based training either partially or completely addresses the issue.

To the extent my enthusiasm for simulation-based flight training was annoying, I apologize to my colleagues. To the extent I advanced the cause of using flight simulation to improve glider flight instruction, I take great satisfaction and make no apologies.

Presentation

My presentation at Reno was the fourth I have done at an SSA convention on the topic of simulation-based glider flight instruction; ABQ-2008, LIT-2010, PHL-2011 being the others. This year's presentation was entitled

“Simulation-based Glider Flight Instruction – Does it Really Work?”

The presentation featured the real-life adventures of my New Hampshire cyber-students Tom and Megan (adult daughter) Strickland. After training exclusively in simulation at-a-distance (over the phone), two hours a week for 6 months, and doing a flawless live flight demonstration (in simulation) for the presentation in Philadelphia, Team Strickland traveled to Stowe Soaring in Vermont this past summer to see how their simulation-based

training would apply to real-world glider flying. They did not initially tell their Stowe hosts of their simulation-based training, but they did video record their flights.

The Reno presentation was well attended, well received, and I believe definitively answered the question posed. In the convention program document, I concluded the presentation abstract with:

“If you are absolutely determined to remain a skeptic about how well this simulation stuff works, you may want to skip this presentation.”

Convention Exhibit Hall

Except for the time required to do my presentation, I spent the entire Reno convention in the exhibit hall simulation booth. Ever since ABQ-2008, I have managed to finagle my way onto the SSA convention exhibit hall floor, set up a full Condor simulation station, and provide convention attendees with the hands-on opportunity to experience this amazing resource. Like all past years, there was always someone flying the simulation and often as many as 10 folks watching.

I continue to hold out hope that some day our organization will properly recognize the significance of simulation with respect to flight training, proficiency, and safety, and actively promote and sponsor its adoption, including its prominence at conventions. Until then, I would like to recognize and thank Paul Remde (Cumulus Soaring, Inc.) for his insight and support. Paul has sponsored glider flight simulation onto the exhibit hall floors at the last two SSA conventions (LIT, RNO). I'm pretty sure the few sales of Condor software at the convention do not remotely cover the costs of the additional booth space, once again demonstrating Paul's commitment to the sport of soaring and to those of us who engage in it.

By my estimate, more than 100 convention attendees flew the simulation in Reno. I was pleased to see a number of my fellow FIRC attendees (flight instructors) checking it out.



Reno Convention – Glider Flight Simulation

Texting While Flying

Condor's Replay function enables you to essentially save a movie of your simulated flight and play it back using any of Condor's views (internal cockpit, external glider, etc.). I use the View Replay function extensively in the presentation, demonstration, and critique phases of my simulation-based flight instruction, especially when teaching at-a-distance.

Recently, one of my cyber students sent me a Replay file for critique. Interestingly, it comprised not only the video, but also embedded text messages describing what my student was thinking as he made the flight; very useful information for an instructor.

When first investigating Condor as an instructional tool, I noticed the lesson videos in Condor's Flight School incorporated time-synchronized text messages. This integrated text looked like a powerful instructional tool, so I tried to figure out how the text was implemented. I managed to come up with a very clumsy, time-consuming solution that dissuaded me from using this messaging feature and Flight School in general. Apparently, however, there was an easier way to "text" in Condor and my student had accidentally discovered it.

Those of you who fly in networked competitions are probably familiar with Condor's ability to simulate radio communications. To "transmit", you first hit the "Return/Enter" key on the keyboard. Condor displays the currently selected radio frequency in the lower left corner of the monitor and allows you to enter a text message. With another press of the "Return/Enter" key, all the other pilots on your frequency "receive" your message as text displayed on their screens.

As it turns out, the same technique can be used to embed text messages into a Replay file. The Radio Communication feature is available in either Free Flight or View Replay mode. Saving the Free Flight session as a Replay or re-saving the Replay file using the Replay Control Panel disk icon incorporates any “transmitted” text messages into the new file. To the best of my knowledge, this is an undocumented feature of Condor.

I have already introduced Condor’s “texting” feature into my simulation-based instructional critiques. By comparison, I used to watch a student’s Replay and then provide my critique in an email message. Now, using the Radio Communication feature, I embed my critique comments directly into the student’s Replay file and send the file back to them. The student then sees my comments synchronized with their actions. I have also encouraged my students to embed their thoughts, comments, and questions into the Replays they send me. This way I know what they are thinking as they perform a maneuver.

School is Back in Session

With the recently released Version 1.1.5 patch, the Condor developers fixed the flight dynamics bug that had rendered Flight School nearly useless. I have always recognized the potential of Condor’s Flight School, but the mystery over how to embed in-stream messages along with another show-stopping bug that kept you from saving a Replay file segment, dissuaded and prevented me from developing any Custom Lessons in Flight School.

Now that Flight School seems to be fully functional again, I intend to take another serious look at incorporating Flight School into my instructional program. Russ Holtz, author of the GliderBooks instructional materials, has done some pretty extensive development of Custom Lessons in Flight School and has generously enabled me to review his work.

Stay tuned for an update on Condor Flight School in a future issue of Condor Corner.

Condor and Glider Flight Safety

Several years ago, I was attending a Soaring Safety Foundation (SSF)-sponsored flight instructor refresher clinic in Chicago. We were on break and I was running Condor Replay files (movies) on my laptop, partly for my own entertainment, but also hoping to pique the interest of my fellow flight instructors.

Rich Carlson, SSF Chair, and clinic organizer / instructor, took a look at what I was doing and asked:

“Could Condor be used to produce video clips of dangerous and/or unusual glider flight scenarios that could be hosted on the SSF website?”

I assured him, while I didn’t yet know how to do that, I was pretty sure it could be done and would endeavor to produce a sample video for his review and consideration. My

confidence stemmed from the existence of literally hundreds of Condor-related files on You-Tube.

Start Technology Tangent

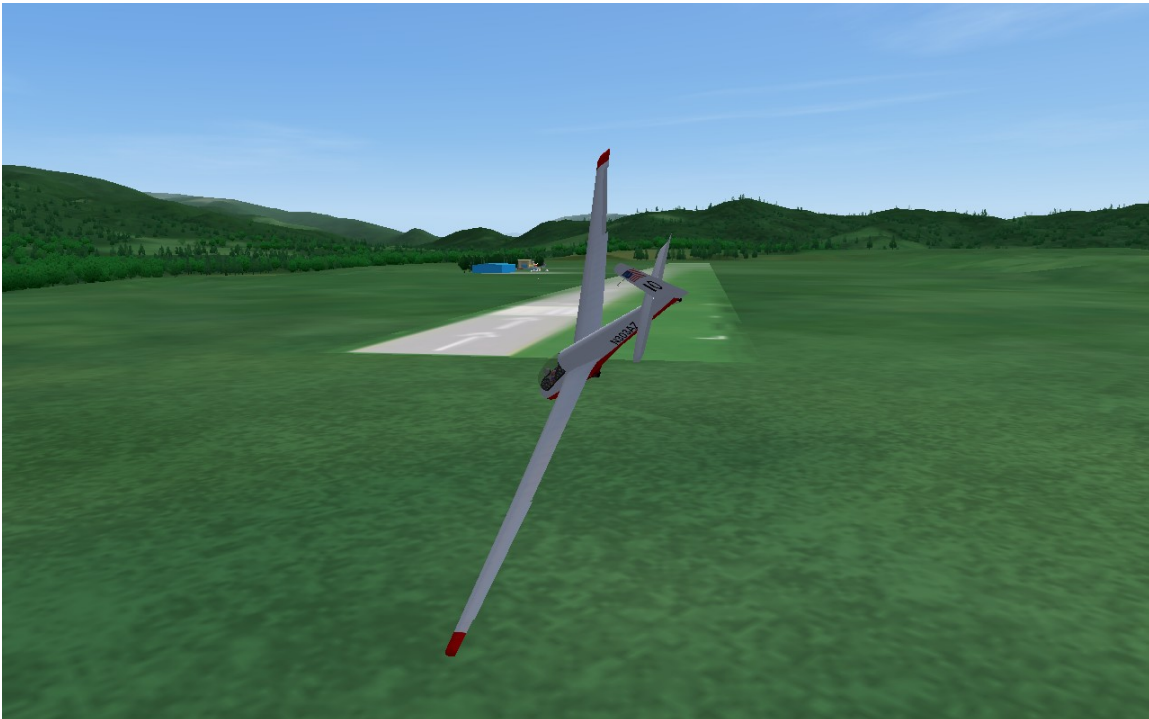
A Condor Replay file is not a video file. It is a Condor-specific parameter file, which when fed back through the Condor software, generates the audio and video graphics. The Replay file extension is “.RPY”. Commonly used media players (e.g. Microsoft, QuickTime) cannot process a .RPY file.

To capture the audio/video generated by Condor, I used a piece of software called FRAPS. FRAPS runs in the background as a separate application, captures the audio/video generated by other applications, and outputs the result in .AVI format. While .AVI files are very high quality, they are also quite large. As such, they consume a lot of disk space and are time-consuming to transfer (upload / download) via the Internet.

To convert .AVI files into something more Internet-friendly (.WMV files), and to add things like titles, credits, scene transitions, etc. I used Microsoft Movie Maker.

End Technology Tangent

As I remember it, the sample video clip I sent to Rich showed an ASK-13 stalling and spinning into the ground while skidding the turn from base to final.



Stall / Spin – Base to Final



At the SSA convention in Little Rock, Rich cornered me and Bob Wander and laid out his vision for a series of videos to be hosted on the SSF website. The video resources would be readily available to instructors, students, and certificated pilots, and depict dangerous/unusual glider flight situations that often result in accidents. Rich asked Bob to produce a seed list of scenarios which I would then produce in Condor, capture in FRAPS, and edit in MS Movie Maker. Bob did his thing. I did mine.

Later that year, the SSF Board of Directors was meeting in Chicago and Rich invited me to do a presentation on the video initiative for the board's information and comment.

Rich then took the video clips on the road, showing them to CFIGs at flight instructor refresher clinics all over the country. Based on instructor input, Rich developed NTSB accident report-like text segments for each video and hosted the scenarios on the SSF website.

Knowing this initial group of video resources could well generate a lot of additional requests, the SSF funded the development of an application that enables any SSA member to request additional scenarios. In the event the SSF gets more requests than it has resources to produce, the application incorporates a way to prioritize the requests.

I encourage you to check out this exciting new set of safety/training-related resources.

- Connect to www.soaringsafety.org
- Select "On-line Learning -- RM/ADM Training" from the menu on the left.

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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.