Introduction

The title of this article was designed to get your attention. Some of you will be attracted to the title because it represents hope. You are frustrated with the limitations and shortcomings of the current system of glider flight instruction at your club or commercial operation, perhaps nearly to the point of giving up on your dream of learning to fly. You would welcome the opportunity to take greater control of your flight training.

The rest of you, I suspect, consider the title to represent complete lunacy, and are, at best, curious about why anyone would be crazy enough propose it.

For those of you looking for hope, I believe you will find some here. For the curious skeptics among you, I hope this article leaves you with something to think about.

Preface to an Epiphany

In the March 2013 issue of Condor Corner, I put forth 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."

Does that mean I believe you can simply buy a copy of Condor and teach yourself to fly? My answer to that question used to be "absolutely not". Post-epiphany, however, my answer is now "yes and no, but more yes than no, and more yes than most folks would have you believe."

Does it mean glider category candidates no longer need flight instructors? It does not. It does, however, suggest a rather dramatic paradigm shift in the student/instructor dynamic.

Epiphany is defined as:
> A sudden intuitive leap in understanding, especially through an ordinary but striking occurrence.

The idea you can teach yourself to fly struck me a couple months ago, although I now realize it had been in the making for many years. I suspect that may be characteristic of most, if not all, epiphanies.

Before we get to the actual epiphany, however, allow me to relate what lead up to it.

My Own Training Experience

While our nation's educational system requires a student to progressively take on more responsibility for his/her learning, the process from pre-school through college is still

largely managed and controlled by someone other than the student. So, as I began my flight training right after college, I was quite comfortable with (and quite frankly expected) my instructor to do the same. Over the last 40 years, however, while amassing over 500 hours on the receiving end of flight instruction (I am a slow learner), I have increasingly found myself less content (nay often frustrated; sometimes border-line angry) with the limitations "the system" places on the quality and pace of my learning.

My first foray away from passive instruction occurred during training for an endorsement. The training was taking a lot longer than I thought it should and there seemed to be no end in sight. My frustration with the quality and pace of the process finally pushed me over the edge. I took the initiative to get my hands on the syllabus (an FAA advisory circular), started working with my instructor to plan the remainder of the training, and began tracking and documenting my own progress. I don't know the extent to which my involvement improved or accelerated the process, but I sure felt better about it.

More recently, for my glider ground launch endorsement, I simply assumed as much responsibility for my own learning as the law would allow. My training venue of choice (Don Ingraham's Cross Country Soaring, Inc. in Faribault, MN) makes its training syllabus available online in advance, along with the winch operations guide, and aircraft (Grob 103) flight manual. As documented in the January 2013 Condor Corner, I was able to use the CCSI training documents, in conjunction with Condor simulation exercises of my own design, to thoroughly familiarize (dare I say "teach") myself winch launching before showing up for the real deal. The results were note-worthy.

The Livingston Treatise
John Livingston is one of two CFIGs at the Wisconsin Soaring Society in Hartford, WI. He and I studied together for our CFIG ratings. A couple months ago, I read a document John had drafted entitled "Learning to Fly Gliders at the Wisconsin Soaring Society." I believe the primary focus of the document was to clarify for the membership the facts of life with respect to flight instruction in a club environment.

In his treatise, John laid out a very clear division of responsibility between student and instructor. In summary:

Students needed to abandon the passive system of learning experienced to this point in their lives, and assume full responsibility for their own pilot training, including:
- Managing their own training syllabus
- Reading everything about glider flying they can get their hands on
- Showing up at lessons knowledgeable and ready to ask questions
- Tracking and documenting their own progress, including filling out their log books

The role of instructor was redefined to be that of a "coach":
- Providing the what, why, how, and when of glider flight
- Acting as safety pilot

> i.e. ensuring the integrity of the club's equipment and keeping the student alive long enough for him/her to make sense of flying
- Managing the progression of complexity inherent in flight training
- Ensuring compliance with the regulatory requirements
  > i.e. providing endorsements for solo, written exam, practical test, etc.
- Helping the student fill in the gaps in their knowledge and skills

My initial (pre-epiphany) interpretation of the Livingston Treatise was as a self-serving abdication of instructor responsibility and authority. What irritated me most, however, was that John's arguments seemed to have a great deal of merit. I hate it when that happens.

The Dalai Lama Syndrome
Ralph Moser is a captain and FAA designated A320 line check airman for United Airlines, retired Air Force fighter/instructor pilot (F-4, F-15, F-16), one of the best general aviation flight instructors I have ever experienced, and a good friend. Ralph used to show up for his "training" with his sorties already planned. "Plan the flight. Fly the plan."

Greg Wright may be the nicest guy I ever met. He came up through the general aviation ranks as pilot, flight instructor, freight hauler, and passenger charter pilot, before signing on with United Airlines and working his way up to captain. He showed up at our glider joint last summer, already a very capable professional and general aviation pilot, with extensive airplane and helicopter expertise, and even a little time in ultra-lights. I had the pleasure of helping him add a commercial glider rating to his list of credentials. I knew I was in trouble as Greg's instructor when, on his very first flight, after I transferred the flight controls to him, he politely asked if he could do a few Dutch rolls. He wanted to evaluate the 2-33's control response. Yikes!

I gave Dan Harder his first ride in a glider and later had the pleasure of riding along in the back seat as he taught himself to fly. Dan took to flying as easily as anyone I have known. I never had to show the guy something more than once. It made me hate him (just kidding Dan). To this day, I suspect Dan of having been a raptor in a previous life.

What these three guys have in common is their contribution to a radical change in my self-concept from "instructor as the center of the universe" to "obstacle between the candidate and a glider rating". My greatest challenge with these three was to keep pace with them. They each reminded me of a quote attributed to the Dalai Lama:
  "There they go, and I must follow, for I am their leader."

Aviation Instructor's Handbook (AIH)
I am currently working online with a CFIG candidate. As part of our work together, we have been cooperatively reading the F.A.A. Aviation Instructor's Handbook (FAA-H-8083-9A) and comparing notes.

Chapter 1 – Human Behavior

The last section in this chapter is entitled "Teaching the Adult Student". Here is my summary.

> Adults seek out learning as a means to an end. They are autonomous and self-directed, needing to be independent and exercise control. Adult learners draw on a foundation of life experiences and knowledge for learning. They are goal oriented, relevancy oriented, and practical. They need to be shown respect and tend toward immediacy in problem solving and the application of knowledge.

The AIH then goes on to make the following recommendations to instructors:
- Provide the student with a training syllabus
- Recognize the student's need to control the pace of learning
- Take advantage of the adult preference to self-design and self-direct learning
- Remember that self-direction does not mean isolation.
    Self-directed learning involves other people as resources, guides, etc.
- Use books, programmed instruction, and computers; all popular with adult learners
- Refrain from "spoon-feeding" the adult learner
- Create opportunities for mutual planning

Chapter 2 – The Learning Process
In an effort to get my head around something, I often begin by looking up definitions of important terms. I then expand the process by finding meaningful definitions for important terms within those definitions, and so on. I finish by integrating my thoughts back into a concise redefinition of the primary concepts.

My objective, in this case, was to clearly understand what it meant to "teach", and to establish the relationship between "teaching" and "learning". Here is what I came up with.

Learning
The *process* of acquiring *knowledge* through experience, practice, or study, or by being taught

Process
A series of *actions* or steps taken to achieve an end

Expedite
To make an *action or process* be accomplished more quickly.

Facilitate
To make an *action or process* easy or easier.

Knowledge
Information and skills acquired through *experience or education*; the theoretical or practical understanding of a subject

Instruct
To provide with *knowledge*, especially in a *methodical* way

Methodical *adj.*

Systematic

Teach
1. Show or explain (to someone) how to do something
2. To cause to know
3. To guide the studies of
4. To impart the knowledge of

The Result:

Manley's Definition of what it is to "Teach"
To systematically facilitate and expedite another person's learning.

The Epiphany
Assuming you have gotten this far in the article, you are probably wondering when (if ever) and how (good luck) I am going to explain away the ridiculous assertion you could "teach yourself to fly", and perhaps how anything I've written to this point has anything to do with flight simulation. Hang in there.

1) My own flight training experience, the Aviation Instructors Handbook, and the Livingston Treatise all made me realize adults learn best when they are in control of the learning process; that their road to "pilot in command" should begin with "learner in command".

2) My definitional analysis of "Teaching" and "Learning" made me realize:
   a) Learning can be either active (via experience, practice, study) or passive (taught)
   b) Active learning is synonymous with "teaching yourself" or "self-directed learning"
   c) As an instructor (teacher), my proper relationship to the self-directed learner is that of "resource".

3) Ralph Moser, Dan Harder, Greg Wright and the Dalai Lama made me realize, even in simulation-based training, I can be as much of an obstacle to the adult learner as I am a resource.

Self-study
Our current pilot training system already recognizes the legitimacy of self-study. For example, it is a valid and accepted qualification to take knowledge tests (14 CFR 61.35).

CFIGs routinely direct and encourage their candidates to read (self-study) all manner of written materials from the F.A.A. and noted authors such as Knauff, Wander, Piggott, Holtz, etc. These texts include, if not exclusively address, how to fly a glider.

And yet we recoil and draw a wide, deep line in the sand at the idea of extending the use of self-study to flight training. I agree self-guided flight training is bad idea if it involves

the use of real aircraft, but that is not what I am proposing. I am proposing simulation-based self-study.

The only argument I have heard against simulation-based self-study, that has any merit at all, in my opinion, invokes the learning-related *Law of Primacy* that basically states "the first thing you learn sticks with you." The reason that matters is if someone initially learns the wrong thing, there is extra work involved in getting that wrong thing out of the person's head and the right thing back in. Having given it some thought, my response is "So what?" The necessary relearning is at worst an inconvenience. It may cost the participants extra time and money, but it is not going to kill anyone.

By the way, the primacy issue is not limited to simulation-based learning. Our current real life system of flight training manages to produce its share of misconceptions, thoughtless procedures, bad habits, and serious omissions.

The primacy argument then continues with the notion that all these self-induced wrong ideas about how to fly are certain to be carried forward into the candidate's real life flying. My response to that is: "Highly unlikely." No one will ever act as pilot in command of a real glider, and will certainly not be allowed to carry passengers, until they have demonstrated, first to one or more F.A.A. certified flight instructors, and then to one or more F.A.A. flight examiners (or designees), the level of knowledge, skill, and sound judgment, required by the appropriate practical test standard.

The other argument put forth is "there is no substitute for real flight experience with a real flight instructor." I am pretty sure that is not so much a reasoned argument as an unsubstantiated statement of opinion.

The Proper Resources
If you read my initial assertion carefully (as some of you (Noel Wade) did), you will notice it begins with the caveat **"given the proper resources,** candidates for ….. glider category ratings, could entirely manage their own flight-training development."

So, what are the proper resources? Here is my initial list.

14 CFR Part 61 – Certification: Pilots, Flight Instructors, Ground Instructors
This is where it all starts. The regulations lay out all the requirements for a certificate or rating and not only represent the candidate's initial "to-do" list, but serve as a final completion checklist.

Practical Test Standard
This document lays out the regulatory requirements in considerably greater detail; everything the candidate needs to know, everything he/she needs to do, and how well everything needs to be done; the perfect basis for a training syllabus.

Syllabus

The long list of things to do from the PTS needs to be organized. The candidate needs a plan; a road map.

I have developed a syllabus, in diagram format, specifically designed for simulation-based glider flight training. Until it is available on my yet-to-be-developed web site, I am happy to email a copy to anyone who asks for it.

Recommended Reading List
For openers, I recommend and use the F.A.A Glider Flying Handbook (FAA-H-8083-13), Russ Holtz's Flight Training and Knowledge Manuals for Gliders, and anything written by Bob Wander, Tom Knauff, and Derek Piggott.

<u>**So You Want to Fly Gliders**</u>
This DVD from Sporty's Academy is an incredible piece of work. Bob Wander, who I sincerely consider to be Heaven's gift to glider flight instruction, worked with Sporty's to develop this excellent resource. He also stars in it. It never ceases to amaze me how much good information on flying gliders is packed into this 1.5 hour masterpiece.

One of the reasons this DVD is so effective is its audio/visual format. Human learning begins with sensory input, 88% of which is audio/visual (75% visual; 13% auditory).

And that leads nicely into my grand finale.

Simulation-based Self-Study Flight Training Resources
Condor's Flight School is actually a pretty good model for supporting self-directed flight training. Each learning segment provides a textual overview (reading assignment), a visual demonstration with embedded instructional text, and (this is where the value proposition goes way up) an opportunity for the student to actually and repeatedly fly the lesson, i.e. to perform the flight maneuver or objective to the demonstrated standard.

I don't recommend or yet use Flight School because of the quality of the instruction delivered by the developers and because is still has a couple of bugs in it. It appears to have been designed to accommodate custom content development, so I could address the quality issue by developing my own content. If I can get around the bug that prevents content developed on my installation from being used on other installations, I will definitely reconsider using Condor's Flight School.

In the meantime, I intend to begin developing self-study resources based on Condor Replay files and hosting them on my yet-to-be-developed website, probably as .mp4 files. The visual and audio components of a Condor Replay can be captured using a program like FRAPS. The output from FRAPS (.avi) can be imported into products like Microsoft Movie Maker, allowing the developer to add titles, transitions, instructional text, still images, voice overlays, custom graphics, etc. The result would be the Condor equivalent of a Sporty's DVD and would serve as the presentation and demonstration components of individual flight lessons. The student would then attempt to emulate each lesson's objectives by flying a series of Condor Free Flight sessions.

The Missing Link
The March 2013 assertion of heresy ended with the caveat that glider rating candidates could **"in large part**, teach themselves to fly". Missing still is the ability to self-evaluate or to have the candidate's performance programmatically evaluated. That is a future project and not as far-fetched or as temporally remote as it may seem.

Until then, the self-directed learners can record their performance emulations as Condor Replay files and have them reviewed by one or more knowledgeable "resources", not necessarily a CFIG.

In Conclusion
Simulation-based flight training appeals to the self-directed learner in all of us. It affords the control, pace, independence, immediacy, and time efficiency we adults crave, and in doing do, removes many of the obstacles that currently prevent 80% of all certificate candidates from ever completing their flight training and fulfilling their dream to fly.

By way of flight simulation, we are now able to extend the benefits of self-directed study beyond knowledge training and into the realm of flight training. For the good of our sport, I believe we should.

I'll be working on it, and promise to report back.

Heretic, out!

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