Introduction:
Some of what you are about to read is speculation on my part. I don't belong to a soaring club, but I have talked to lots of folks who do. I am the president of an airplane-flying club, so I have pretty good idea how organizations comprised of pilots function (or don't). I instruct and give rides at a commercial glider operation, but I do not claim to be an expert on running a business. The ideas I am about to share are from the point of view of someone mostly on the outside looking in. That perspective, however, can be very valuable. I offer these observations, thoughts, and suggestions to stimulate the thinking of those who might benefit from them.

Clubs
My sense is most glider flying clubs do not have enough flight instructors, and I do not envy the instructors at clubs having a high member-to-instructor ratio. Never mind that instructors at most clubs are not monetarily compensated. In addition to doing flight reviews, remedial training, and advanced training for certificated pilots, instructors provide the primary and transition training so important to the growth of the club. All this instructional activity, if done properly, leaves the instructor little, if any, time for his/her personal flying. Even if the instructor doesn't burn out, this heavy instructional load has an especially devastating effect on primary training. Out of necessity, the pace of training is slow and quite often very frustrating for the student pilot membership.

At clubs with a good supply of instructors, life is seemingly better, at least for the instructors. The instructional duties are typically divvied up on a calendar basis. An instructor need only be "on duty" for part of a day every so many weeks. While this strategy appropriately affords instructors the opportunity to fly their own or the club's ships, the "instructor on duty" paradigm leaves much to be desired from the student's perspective. While some (this author not included) will argue the student is better served by experiencing a variety of instructors, ask your students how they like having a different instructional style and different opinions on procedures and techniques every time they show up for a lesson. Better yet, if you were trained this way, think about how you liked it.

I would also suggest this "on duty" paradigm is not in the developmental best interest of an instructor. The paradigm provides no time for an instructor to do individualized lesson planning, preparation, or progress tracking for the students. The instructor rarely has the interpersonal and professional satisfaction, or experience, of taking a student through the entire training syllabus, nor accepting responsibility for the required endorsements. In my opinion, these instructors are missing out on being complete instructors.

Please understand I am not finding fault with these instructional models or the clubs and instructors who employ them. I do, however, believe the current situation at your club can be dramatically improved using glider flight simulation.

Too Few Instructors

For clubs with too few instructors, the problem is a shortage of time, and the solution is more efficient use of that scarce resource. Flight simulation represents a much more efficient system of instruction in that it:

1. requires much less time to impart the same amount of training
2. lends itself nicely to group instruction
   > The presentation and demonstration components of the teaching process are conducted as easily with a dozen students simultaneously as with one.
3. takes place regardless of the weather or equipment outages (e.g. the tug is down)
4. when implemented at-a-distance, spreads the instructional load over more days of the week and/or weeks of the year
5. results in less re-training
   > by providing students ample opportunity to practice between lessons.

A Plethora of Instructors

Clubs with multiple instructors may want to consider the following instructional model:

1. Each student is assigned a "primary" instructor. It is the primary instructor's responsibility to see the student through the entire training process.

   The primary instructor uses simulation-based instruction to teach all required flight maneuvers. The student must perform to private pilot (PTS) standards of understanding and proficiency, in simulation, before being allowed to apply their skills in a real aircraft.

   Simulation-based instruction is conducted at locations, days, and times convenient for both the instructor and student. Instruction may well be at-a-distance; that is not necessarily at the airport, on the weekend, or even during the soaring season.

2. Instructors continue to serve in their usual "on duty" capacity, but their responsibilities in that capacity are significantly different. Instructors-on-duty:

   a) provide the day's students with the opportunity to apply their simulation-based skills to the real world
   b) monitor the student's performance of specific flight maneuvers
   c) report the student's performance to the "primary" instructor.

   The instructor-on-duty does "not" instruct the student, except at the request and/or direction of the student's primary instructor.

Well in advance of the student's flight, the primary instructor provides the scheduled instructor-on-duty with the appropriate background on the student's training, and the procedures and techniques the student should demonstrate.

Ideally, the primary instructor would schedule her students to fly when she is serving as the instructor-on-duty. When that is not possible, the primary instructor working in tandem with the instructor-on-duty is a very workable model.

This model of instruction retains the advantages of the instructor-on-duty model, dramatically improves the student's experience, and introduces all the benefits of simulation-based glider flight instruction.

Commercial Operations

I have never owned/operated a commercial glider operation. I do, however, work at one. At one time, my spouse and I owned and operated a small design/build construction company, so the concepts related to running a small business are not entirely foreign to me.

If I understand correctly, the primary purpose of any commercial venture is to generate a profit, and so here are my thoughts on how glider flight simulation might help improve a commercial glider operation's bottom line.

1. Rethink Your Priorities

It seems to me that pilot training represents a much greater and more consistent source of revenue than do rides, rentals, or private towing. Not that those other revenue sources are not important, but if the objective is to make money, I would think training would have priority. Pilots in training spend thousands of dollars reliably and consistently over extended periods of time (I think that's referred to as "cash flow"). You have to give a lot of rides, rent a lot of flight hours, and tow a lot of private ships into the air to match the revenue generated by one satisfied student.

2. Attract and Retain More Students

AOPA, in its recent Flight Training Retention Initiative (http://www.aopa.org/ftinitiative/), identified a number of issues related to attracting and retaining students. Three of the top seven issues were:

Value:
From the customer's perspective, you can't beat the value proposition of simulation-based-training. By my calculation, conventional ab-initio glider flight training runs about $150-$250/hour (glider rental, instructor fees, 1-3 tows), requires something like 60 flights in a glider, and takes 3-6 months to complete. My personal experience suggests that 80% of glider flight training can be done using simulation-based training at $50/hour (50% of which is profit to the business) and in a fraction of the calendar time. Imagine how many more students you could attract at that rate and schedule.

You may be thinking the 80% simulation - 20% real paradigm cuts seriously into your rental and towing revenues. You would be correct, but keep in mind that profit (the thing you really care about) is the difference between revenue and expense. The expenses related to simulation-based instruction absolutely pale in comparison to those related to owning and operating real aircraft. More on the expense side later.

Effectiveness:
For all the reasons I've listed in past articles, simulation is quite simply a much more effective learning environment. The airlines, the military, and the high-end flight training companies figured that out a long time ago. More effective training means more satisfied customers, better-trained (and therefore, safer) pilots, and more of them. All of those things are good for your business.

Scheduling:
The scheduling of simulation-based flight training is limited only by the availability of the student and the instructor. With distance education, even location is no longer an obstacle. Today's time-conscience customers will be attracted to businesses that show the greatest consideration and respect for their limited time.

Speaking of time, simulation-based training done at-a-distance eliminates much of the travel time associated with conventional flight training.

3. Be More Efficient
Whether in person or at-a-distance, an instructor can cover 3 to 4 times more material in an hour of simulation-based flight instruction than can be done conventionally. Your customers will advance more quickly, retain their enthusiasm, experience greater retention, and generally be much more excited, and therefore satisfied, with their training experience. Satisfaction leads to future business as your customers return to rent, tow, or continue their training. Satisfied customers are also "much" more likely to refer your business to others.

Simulation-based flight training never gets weathered out or stymied by equipment outages. The customer experiences consistent and satisfying progress. The simulation-savvy commercial operator is able to generate revenue while their conventional competition waits for the weather to clear, makes calls to their A&P, or waits for the snow to melt.

Simulation-based flight training lends itself nicely to group sessions. Using simulation, the presentation and demonstration phases of flight instruction can be conducted with a dozen students as easily as with one. Even assuming you offered group instruction at a reduced hourly rate, the overall profit margin for group instruction is dramatically better than one-on-one instruction. Many students actually prefer and/or learn better in a group setting.

4. Minimize Your Expenses

Equipment
It appears to me, whether you are a club or a commercial operation, a large percentage of the expense side of your balance sheet has to do with the acquisition, maintenance, financing, insurance (liability/property), and operating costs of gliders and tow planes.

It is my contention, at least with respect to training activity, that a club or commercial operation, using simulation-based flight instruction, could conduct their current level of flight training with at least 50% fewer aircraft, or accommodate a 200-300% increase in flight training activity without increasing their existing fleet.

Simulation-based flight training could also be a big part of the answer to "How do we replace all those Blanik L-13s?" Maybe we don't need to replace "all of them" or even half of them.

A complete glider flight simulation workstation (CPU, monitor, mouse, keyboard, Condor software, joystick, rudder pedals) can be had, brand new, for $500-$700. Even at a very attractive rental rate of $10/hour, this equipment would quickly pay for itself and then go on to generate liability-free, maintenance-free, year-round revenue for years to come.

Personnel
Because simulation-based instruction is so much more efficient than conventional instruction, you don't need as many instructional staff to provide a given level of training service. Or, optionally, you can accommodate a dramatic increase in training activity with no increase in your staffing levels.

In fact, whether you are a club or commercial operation, the simulation-based components of your flight-training program can be performed by certified "ground" instructors. By the way, don't bother advertising for a CGI-G. I am reasonably certain none exist. It would, however, be worth your while and relatively easy to create such an animal.

1. Start by interviewing locally-employed high school teachers. These folks have college degrees in education and real-life, professional teaching experience.

2. Help your favorite candidate(s) pass the Private Pilot Glider written exam.

 That's it. Your new employees now meet all the eligibility requirements specified in 14 CFR 61.213. You might even offer to teach them to fly in exchange for their instructional services.

Finally, encourage and/or facilitate their advancement to CFI-G and you will have created something very rare and valuable indeed; a person who is as qualified to teach as they are to fly.

In Conclusion

Redbird Flight Simulations (http://www.redbirdflightsimulations.com/) builds advanced flight-training devices (ATDs) ranging from basic desktop units to full-motion platforms. They recently built and opened the Redbird Skyport (http://redbirdskyport.com/), a highly innovative aviation research facility incorporating a fixed-based operation (FBO) and a flight-training academy. Redbird is well on its way to revolutionizing light airplane flight training through the extensive use of flight simulation.

In the "Learn to Fly / Training Philosophy" section of Redbird's web site, you will find a paragraph entitled "Simulator Classroom, Airplane Showroom" which reads:

"*The cockpit of an airplane is basically the worst place to learn how to fly ……... The airlines, military and corporate training departments know this. That's why their pilots train in simulators. ………*"

I could not have said it better, although heaven knows I've been trying.

Mark Hawkins (OA) recently sent an email my co-author Frank Paynter (TA), which Frank in turn forwarded it to me. The message contained the URL to Redbird's website and was entitled "*Wish We Could Get to This for Gliders*". Not surprisingly, Frank and I believe we already have. In fact, in some ways, I believe we are ahead of even Redbird in that we already train at-a-distance and do not require expensive equipment of any kind. We are very successfully training primary and advanced students to high standards in very short periods of time. We have more customers than we can handle. We will gladly match our customer satisfaction ratings against anyone in the industry and our revenue-to-expense ratios are to die for.

We cordially invite the rest of the glider instructional community to join us.

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