NTSB Forum: Humans and Hardware

Preventing General Aviation Inflight Loss of Control — Training Solutions Panel

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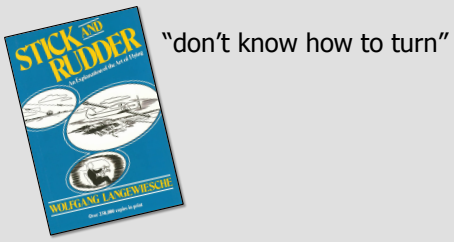
Remarks by Rich Stowell, Society of Aviation and Flight Educators

The status quo in aviation education is unacceptable.

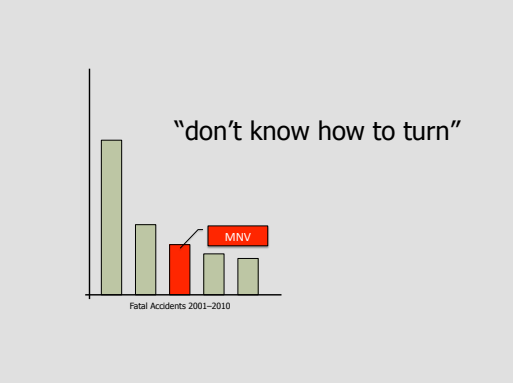
Those of us who provide spin and upset recovery training see the results of our training system on a daily basis. We constantly deal with the same recurring questions and concerns; the same fears and frustrations.

[NTSB Board] Member Weener has referred to loss of control (LOC) as a "stubbornly recurrent safety challenge." Recurrent indeed.



In 1944, Wolfgang Langewiesche observed that "Almost all fatal flying accidents are caused by loss of control during a turn."

He concluded that pilots, as a group, simply don't know how to turn. Little has changed in the 70-plus years since.



Most fatal LOC accidents continue to occur during the maneuvering phase.

In fact, if we separated the block of maneuvering accidents into its own category, LOC while maneuvering by itself would rank third on the list of fatal accident causes.

It's clear that except for the ability to mimic only the most basic of turns, pilots, as a group, remain unconsciously incompetent with regard to maneuvering flight.

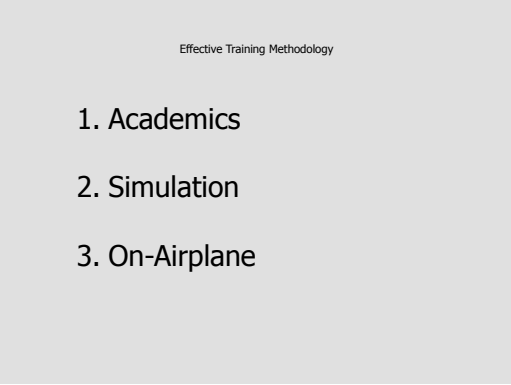
According to aviation safety pioneer Jerome Lederer, "Every accident, no matter how minor, is a failure of the organization." In this case, the "organization" is our flight training industry.

These pilots entrusted us with their safety and wellbeing. They believed the training system would teach them how to maneuver an airplane. And we failed them.

Simply stated, we have a training delivery problem.

We can try to push all of the doctrine and standards and curricula and technology and products we want into the training pipeline.

Absent a concerted effort to significantly improve the delivery system, none of these enhancements will yield the safety dividends we envision.



Responding to the loss of control problem in commercial aviation, the International Civil Aviation Organization (ICAO) recently published its Manual on Upset Prevention and Recovery Training. The manual promotes an integrated approach to training designed to maximize the learning experience.

Academics: laying a strong and factually accurate foundation of aeronautical knowledge.

Simulation, which can be as sophisticated as a Level D flight simulator, or as simple as visualization techniques similar to those used by air show pilots before they fly their aerobatic routines.

And on-airplane training: the live experience that cements the concepts and techniques introduced through academics and simulation into a positive and enduring learning experience.

This is the way flight training could and should be conducted at all levels. And it is the way flight training began a century ago. The Wright brothers established the first flight schools in the U.S. Guess what their training methodology was:

- Detailed ground school
- Simulation using a functioning mock up of their flyer
- And on-airplane training

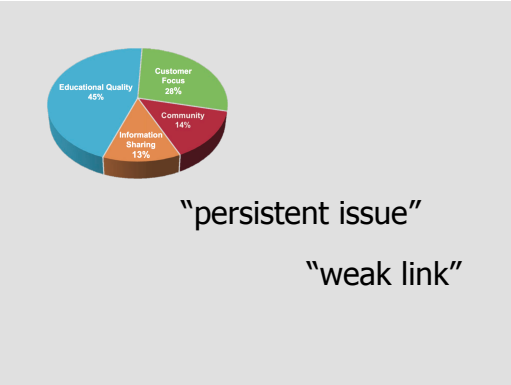
Moreover, the Wrights trained their students to be demonstration pilots.

What if you trained your students to be demo pilots for your flight school? For your airplanes? How about for general aviation? What if our mindset was, "You represent me, you represent our school, you represent general aviation"?

Somewhere between the Wrights and the new ICAO manual, we got lost. We've deviated from a proven flight plan. Perhaps we've forgotten where we were trying to go in the first place.

The ICAO manual serves as a reminder, a course correction. A path back to what the Wright brothers understood: That acting in the best interests of our students also serves our interests.

Recalibrating won't be easy.



According to AOPA, educational quality and customer service make up 75% of a pilot's training experience.

Of all the obstacles on the path to the private pilot check ride, AOPA found the quality of instruction to be a persistent issue and a weak link in the chain.

Students will put up with a lot to become private pilots. What most won't tolerate, however, is poor treatment and poor instruction. So they eventually quit.

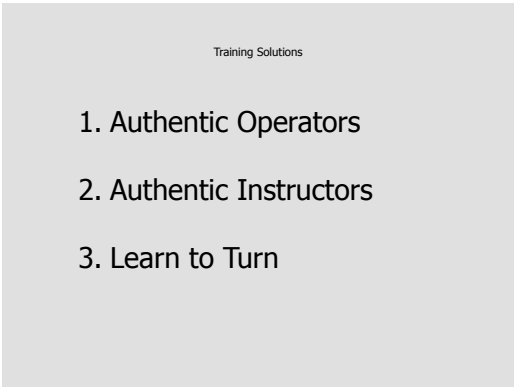
Yet the minority does reach the next level. Increasingly unfulfilled and unconfident, some of them eventually drop out of aviation as well. Others are destined to become accident stats discussed at forums like this.

But we are talking about real people. People who at one time were inspired by flight; who were excited about joining the aviation community.

The status quo underappreciates and undervalues the profession of aviation education. As a result, poorly managed schools and poorly trained instructors are the norm.

In contrast, when instructors accept the challenge of professional development and are recognized for achievement, the marketplace responds in a positive way.

The majority of Master Instructors, for example, earn 10 to 40% more income as a result of participation in the Master Instructor Continuing Education Program. And since 1997, three out of four honorees in the National CFI and FAASTeam Rep of the Year categories have been Master Instructors.



The general aviation fleet is enormously diverse. Not everyone will use a supplemental angle of attack system. Not everyone will take advantage of new technologies and training products.

But at some point, everyone will interact with a flight school or an instructor. And everyone needs to learn to turn.

So imagine what general aviation would look like:

If authentic flight school operators were the norm. Where most schools focused on developing long-term participants in aviation, and not on the Hobbs meter.

If authentic instructors were the norm. Where most of those who became flight instructors did so because they were passionate about teaching, not because they were incentivized into it as a means to log hours for something else.

Where the spin endorsement provided a legitimate record of an instructor's stall/spin knowledge and capability. Where instructors taught to the student, not to the test.

Creating a culture of authentic operators and instructors will be a difficult task, but it is imperative if training solutions will have any hope of large-scale success.

Lastly, if pilots were taught properly about turn dynamics. Conceptually simple, this will not necessarily be an easy task.

To get the ball rolling, today I'm announcing the "Learn to Turn" initiative. I envision a freely available multi-media experience that goes far beyond our historically inadequate treatment of turns. But I can't do this alone. I need your help. If you can offer time, talent, or other resources to this project, then let's work together to teach pilots how to maneuver their airplanes safely and with confidence. (FMI, see http://www.LearnToAviate.tips)

Imagine the potential dividends resulting from these training solutions:

- Most students would become private pilots instead of dropping out;
- Most pilots, including instructors, would invest in recurrent training;
- The successful outcome of a maneuver genuinely would never be in doubt;
- And loss of control no longer would be the primary cause of fatal accidents.

We often think of the Wright brothers' achievement in terms of powered flight. But the Wright's saw control as the central problem they had to solve in order for flying machines to be viable.

Controllable flight is their legacy, and their vision forever changed the world.

I'm not proposing that we change the world; only that we change critical parts of our training delivery system.

The mandate we have as aviation educators is captured in Richard Bach's short story, *School for Perfection*:

> To teach. To teach!
>
> To take time with the students.
>
> To offer them the priceless thing that is the ability to fly.

Thank you.