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AIRSHOULEUS

Patty Wagstaff's Newest Adventure

**Aerobatic & Upset Training** 

# **Aerobatics for the Everyday Pilot**



sually when I do these articles, I focus on safety issues involving flying high performance aircraft, or in some cases, issues involved with display flying in these aircraft.

This time, I'd like to take a detour from that format and focus on a subject I have championed for many years – encouraging the "everyday pilot" to become more competent and proficient than the level defined by ei-

ther the regulations and/or subsequent normal flying.

Based on my experience teaching both primary flying and aerobatics, I'd like to discuss how aerobatic training and/or upset recovery training, (OCF training as it's called in the military) can help pilots achieve a higher basic skill set.

To all you private pilots, commercial pilots, and airline transport rated pilots out there, especially those of you who attend airshows each year as fans or work with us in our airshow community (in ways other than as professional display pilots), consider the following.

How many of you have watched Sean D. Tucker, Patty Wagstaff, or other members of our professional display pilot community during a show, and wondered just what it is that makes pilots like these different from the average pilot?

I could use any of our professional display pilots as an example, but I know Patty Wagstaff, so I'll focus on her to make my point. If I were to ask you what makes Patty as good a pilot as she is, you might say it's her vast experience, her dedication, her natural talent and ability, and the fact that she works extremely hard every day at what she does.

All these attributes are, of course, quite true and highly relevant, but there's something not quite as obvious and related to these attributes that make a pilot like Patty as good as she is. It's found in the genesis that lies deep within her basic skill set, and how she applies those basic skills every time she gets into an airplane. I could define it with a slew of complicated terms, but for the sake of simplicity, let's just say that Patty is as good as she is because when she flies, she is literally one with her aircraft. She and the plane are not two entities acting separately, but are two entities acting as a single unit – a finely tuned and well-oiled machine.

Many display pilots can and do perform at this level daily, and you might be surprised when I tell you that you can take a bite out of their apple and become an even better pilot than you are. Professional display pilots carry over their aerobatic skills into their everyday flying, making them even better pilots when flying straight and level.

I'm sure many of you "everyday pilots" reading this article have good skill sets. You don't have to be a professional display pilot to have a good skill set. But there is something to be learned by studying pilots like Patty if you take the time to look deeply enough. If you do look deeply, what you will find is that pilots like Patty have achieved their higher levels of proficiency in *all* phases of their flying, to a great extent, through aerobatic training.

### THE 30/60 PILOTING PROFICIENCY LIMIT

Let's divert here for a moment and talk a bit about our basic training as pilots. In today's aviation world, you can literally sign up, take a course, pass a written and a flight test, and you are a pilot. What's interesting is that you can do all this without ever flying an airplane outside a very narrow envelope that is defined by FAA regulations. I call this envelope the 30/60 piloting proficiency limit. This refers not to FAA aerobatics regulations, but to the regulations about wearing parachutes.

The FAA tells us that unless we are wearing a parachute, the flight envelope for the airplanes we fly will be defined by a pitch limit of 30 degrees and a bank limit of 60 degrees. So, unless we want to spend our lives as pilots wearing parachutes, we usually end up as "everyday pilots" flying airplanes within these two clearly defined parameters. In other words, we sign on to the training program to fly airplanes whose flight envelopes reflect that they are flown without wearing parachutes and our training also reflects the same restriction. We learn to fly within an envelope defined by 30 degrees of pitch and 60 degrees of bank.

While a pilot can continue through an entire flying career within these two parameters, you can see there might just be an entire world outside this envelope. So, if we go there and learn to fly there, we have extended our basic skill set to include the knowledge and ability required of us to be in that area. How can doing that not make us better pilots than we were? You're right. We *are* better. We have broken away from that 30/60 barrier and now know what happens to an airplane outside that restrictive envelope. We not only know what happens, we are now comfortable being there. In short, we are better pilots than we were.

Keep in mind as you read what follows that what I am saying refers only to the pilot skill set and not to aircraft category and type. Naturally, I don't want pilots flying aerobatics in normal and utility category airplanes. To learn about aerobatics, you need an airplane certified to fly aerobatics. That goes without saying. Just keep in the back of your mind that there are airplanes out there waiting for you that will allow you to explore flight beyond that 30/60 restriction. All you need to do is partner up for some fun and education with a good qualified aerobatic instructor.

It's important for me to stress that you don't need to learn aerobatics to be a good pilot...but you *can* learn aerobatics to become a *better* pilot than you are. Think about that for a moment. You might already be a good pilot, but your flying world is limited. There's a whole new world of performance waiting for you to explore through aerobatics. I can tell you emphatically, based on many years of experience teaching pilots and researching flight safety, that pilots proficient in aerobatics are better all-around pilots because of that proficiency. They are not only better...they are *safer* pilots!

#### THE DREADED STALL

As a simple example, let's talk a bit about how a lot of us have been trained. Let's talk about something basic to all of us and critical to our basic flying skill set...the dreaded stall!

In today's basic flight training environment, what you learn about stalls can vary widely depending on your CFI and how well your CFI deals with stalls. Notice we're not even talking aerobatics here...just about stalls.

We all can agree that a stall is a function of angle of attack and that you can stall an airplane at any speed. Basic stuff. But what we get in training might not be the entire story. Many of us get a sampling of what there is to know about stalls...but do we get the entire picture? Judging from some of the pilots I have checked out through the years, I believe there is more to be learned about stalls than the average pilot might be getting through basic flight training.

Looking at your airspeed indicator, you see stall speed(s) marked for your airplane. But these "speeds" are for gross weight with no acceleration. Throw in some g, change the airplane gross weight, and these speeds are history. You are now dealing with an inaccurate visual indication of stall referencing the airspeed indicator. So much for the vaunted lower limits on the ASI!

Yes, you have your stall warning lights or buzzers, and you might even have an alpha indicator on the panel, but when it comes to stall recognition, there is something else that is very handy to know.

When accidents begin from a stall, that point where the aircraft stalls is rarely at 1g in unaccelerated flight. Where stall/spin accidents occur can usually be found beginning with an accelerated stall. It's accelerated stalls and cross-controlled stalls where meaningful training should be taking place. Stall training should include more than simple 1g stalls, reduced power departure stalls, and stalls from simple turns. A cross-controlled stall is one of the stall options needed in your training. Stall training needs to reflect your ability to *feel* the stall and *hear* the stall. In other words, *you* should be your own best stall warning indicator. *You* should one with your airplane as Patty Wagstaff is one with hers.

With every student I ever trained, I used the power off 1g unaccelerated stall simply as an introduction to stalls and to point out to the student the fact that what they were seeing on the ASI was only good at gross weight and at 1g. I would then take my students (after affirming they were ready psychologically to go there of course) to where the danger was...into accelerated stalls, and accelerated stalls from all attitudes, both with normal and with crossed controls. I taught my students to *feel* and *hear* a stall. This was in basic flight training, not even into aerobatics.

If, as a pilot, you are feeling a stall...feeling stall tickle and feeling stall buffet, you are beginning to learn about what makes Patty Wagstaff, Patty Wagstaff. If you know that stall speed increases as the square root of the aircraft weight or load factor, you are ahead of the game. But when you're under load deep in a steep turn, do you *really* want to be doing math?

Becoming one with your airplane requires advancing your basic stick and rudder skill set. If you can feel and hear an impending stall, you are a step ahead of pilots who wait to hear stall warning devices tell them there is a need to reduce angle of attack. So, as we can see, there might be a bit more you could learn about stalls, and that is just the beginning of what's out there if you make the step to take some aerobatic training. All you need to do is go and get it.

## **AEROBATICS AND THE "EVERYDAY PILOT?"**

I hope I've convinced a lot of you "everyday pilots" out there that learning aerobatics and/or upset and departure training is *the* way to enhance your basic flying skill set. As I've said, learning aerobatics will greatly improve your straight and level flying. Even if you never do aerobatics again after taking a course and learning the basics, I will guarantee your flying will have improved by leaps and bounds.

You will be a safer, more capable, and better prepared pilot. Your senses will be sharper, your stick and rudder skills will be honed to a higher level, and your overall awareness of your interface with the airplane will be greater than ever before. You will never again require a ball in a glass tube to tell you your turn is coordinated. You will see that through the windshield of your aircraft as your nose moves in perfect harmony with the seat of your pants. You will know that a slip is anti-spin and a skid is pro-spin, and you'll know why. You will feel and hear stall and not require a mechanical means to verify what you are feeling. You will know that coordination can be achieved with aileron and rudder in the same direction or in opposite directions, and you will think of coordination in this way. You will be more confident in unusual attitudes and recoveries, and you will own that confidence based on good sound training. And you will be more comfortable in your overall flying environment than ever before. In short...you will be a better pilot!

I will add that to achieve what I have described, I am referring to *basic* aerobatics. You can improve your basic flying without doing anything extreme or even close to what you see professionals doing. Simple aerobatics, some spins, and some extended stall training should serve you quite well. And something else...aerobatics are just pure FUN!

In closing, I'd like to stress if you seek out aerobatic training, you do that only from qualified instructors. Not all instructors can give aerobatic dual, and this is a vital distinction to make when choosing an instructor or school. There are many sources of competent aerobatic instruction in the United States. Just do it! You won't regret the decision!

I can highly recommend these sources I know personally:

## **Greg Koontz Aerobatic Training**

Airport: Dugger's Field (Pvt) – Ashville, Alabama

Phone: 205-616-8176 Email: greg@gkairshows.com Web: www.gkairshows.com Aircraft: Super Decathlon

Courses: Basic Aerobatics, Sportsman Aerobatics, Spin Training, Upset Training, Tailwheel Training

## **Patty Wagstaff Aviation Safety**

Airport: SGJ - St. Augustine, Florida

Phone: 904-806-5778

Email: pattyaerobatics@gmail.com Web: www.pattywagstaff.com Aircraft: Extra 300L, Super Decathlon

Courses: Stall/spin recovery, Unusual Attitude/Upset Training, Basic Aerobatics, Competition Aerobatics

### **Rich Stowell's Aviation Learning Center**

Airport: U70 – Cascade, Idaho Phone: 805-218-0161 Web: www.richstowell.com Aircraft: Decathlon, Pitts S-2

Courses: Emergency Maneuver Training, Advanced Spin Training, Tailwheel training

## **Tutima Academy of Aviation Safety**

Airport: KIC - King City, California

Phone: 657-888-4621

Email: info@tutimaacademy.com Web: www.tutimaacademy.com Aircraft: Extra 300L, Pitts S-2B and S-2C

Courses: Basic Aerobatic Performance Training, Pilot Confidence

Training, Custom Flight Training