

SAFETY CORNER

NEGATIVE TRANSFER & THOROUGH TRAINING

**By
Richard Hess**

Hello everyone from your Safety Corner. Many of you know me as that airline guy who moonlights as an L-39 and L-29 instructor. Yes, I've been known to torture students until they cry "Uncle" and then send them on to a checkride. If only the airlines were this much fun!

It's true: learning to fly a jet can be very intense. But the proof is in the finished product. There is no better joy than to see the pride of a well-trained jet pilot who's just completed his rating ride. In fact, I've had that privilege 13 times in the last 12 months alone!

We've had two tragic accidents lately that have cost us some dear friends and extremely experienced aviators. Two of the fatalities were former F-15 and F-18 pilots. Folks, they don't get any better than that. If it can happen to them, it can happen to the rest of us.

As more of the details come out from these accidents, I see some critical lessons that we can all learn. I certainly don't expect to address them all in one article. However, I would like to speak about some issues that I think can help us avoid some of the pitfalls of this very risky business we call jet warbird flying.

NEGATIVE TRANSFER

My first point of emphasis is that all of us have some kind of experience in other aircraft before we find ourselves learning to fly jet warbirds. In fact, we must have 1000 hours with 500 PIC before we can be rated in the U.S. Much of what we've learned previously is VERY applicable and transferable as piloting skills in jet aircraft, but NOT everything.

Back in the mid 70s, the USAF showcased the newly developed A-10 Thunderbolt II at the Paris Air Show. The demo pilot had an F-4 background. During a vertical maneuver, while coming downhill, he pulled to the buffet, as he would have in his previous aircraft. Many fighters and trainers have a wonderfully communicative feel as you approach stall angle-of-attack.

What this pilot did NOT know was that in certain flight regimes, the stall angle-of-attack in the A-10 occurs BEFORE reaching stall buffet. The film of this accident clearly shows the pilot pulling for all he was worth. Unfortunately, he crashed at the bottom of the maneuver and was killed.

After that accident, the AF modified all A-10s to have an aural warning when approaching the stall angle-of-attack. This was a clear example where something that worked in a previous airframe could not be counted on to work in the A-10.

Another example involved a former Navy F-4 pilot that transitioned to the A-10. Both aircraft had a handle for canopy jettison and for emergency brakes in case the critical engine failed. Guess what? The handles were on opposite sides of the cockpit from one airframe to the next.

During takeoff one day, the critical engine failed. The pilot aborted the takeoff and knew he would need to pull the emergency brake handle in order to have braking. You guessed it. He fell back on a previously learned habit and pulled the WRONG handle. Off came the canopy. Needless to say, he kept a low profile for a few months afterwards.

There are many examples like these including those from civilian aircraft that had flap and gear handles, or prop and throttle controls, reversed from one type to another. The results were sometimes disastrous and ALWAYS embarrassing.

THOROUGH TRAINING

Here's where I get to make my sales pitch that every instructor and evaluator has a moral duty to be sure that his students are properly and thoroughly trained. Remember, if we were in the air forces where our airplanes were designed to be used, our aircraft and mission training would last for six months or more. Most students go to a checkride with the equivalent of a few weeks worth of actual training at most. The pressure is on us to ensure they are safe.

I believe each student should be able to handle the airplane in a variety of situations and flight regimes. We always do lots of area work to include slow flight, stalls, steep turns, unusual attitude recovery, and aerobatics. The purpose is to expand the student's skill set by allowing them to master the aircraft at both ends of its performance envelope.

The next challenge is to master the aircraft in the pattern. No student should go to a checkride without being able to perform safe and consistent normal, no-flap and short field patterns and landings. They also need to be able to handle SFOs (simulated flame-outs) from a variety of positions in and above the normal traffic pattern.

I know it's tough. Just ask my students. They often stay at the Château Hess and do they ever sleep like babies after a long day of training. But you get my point. We may not do many of the military missions, but we are using the very same equipment designed for those missions.

CONCLUSIONS

We are truly blessed to have the privilege to own and fly jet warbirds. However, these same privileges come with awesome responsibilities. Our safety record is significantly worse than that of the very air forces that fly these aircraft in VERY dangerous and demanding missions. So, what can we do?

We can start by adopting a mindset that puts safety FIRST. We must train to the same military standards where these aircraft were in operational service. We must recognize that there is NO mission so important that we have to place ourselves in harm's way. We need to remember that flying is an absolutely unforgiving activity. We need to know that NOT everything we've learned is applicable to the next aircraft.

Boeing did a study long ago and found that 75% of ALL accidents had a human factor that directly contributed to the accident. In fact, for years, human factors research and training has been all the rave in airline, corporate and military programs. We've modernized nearly every piece of equipment available to the pilot. The only thing that remains the same is the pilot himself. In future articles we'll cover some other topics related to human factors.

Finally, there's been much discussion within our community and the FAA about the composition of our instructor and evaluator force. How many do we need? What are the qualifications? Where should they be located? What are their currency requirements?

I don't pretend to know the answer to all these questions. However, I do know that as an IP or EP, we have a huge responsibility to our students, to our community, and to ourselves. We must make our community safer and that starts with a proper mindset and thorough training.

I welcome any and all feedback. My intent here is to stimulate thoughtful review of our practices and hopefully make our community safer by so doing. I look forward to seeing each of you at the next Jet Blast [or should we start calling them Safety Seminars???] Remember to fly safe and always check six...

Mongoose