



AAA multimedia journalist Brady Lane chronicled his journey to earn his sport pilot certificate at [AAA aviation](#). At initia is Latin for "from the beginning," and this column is one in a series of transitioning from a sport pilot to a private pilot. —Eds.

Be True to Thy Self Instruments

A transfer of trust



WE'RE TAUGHT FROM THE beginning there are four forces acting on an aircraft in flight—lift, weight, thrust, and drag. There's one more, though, that no one ever told me about. It's not on the FAA knowledge test, but it's present on every flight: trust.

When first learning to land, a student only has the confidence to give it a try because he or she trusts the instructor will intervene the split second it's needed. When the day comes to solo, that trust miraculously shifts from the instructor to you.

That transfer of trust has continued in my training ever since that memorable day. While working on my tailwheel endorsement, I spent many hours in the back seat of a J-3 Cub learning to trust my feel of the plane and not rely on the instruments in front of me. Now sitting in the left seat of a Cherokee working on my private pilot certificate, trust once again took center stage.

My instructor, Steve Krog, handed me the oddest pair of sunglasses I had ever seen and told me to put them on. These stylish shades allowed me to see only the instrument panel and blocked everything else. Steve kept an eye out for traffic and instructed me to hold an altitude and heading.

"Piece of cake," I thought. By the end of that short thought, however, I was already 100 feet below my assigned altitude. As I began to correct my

altitude I noticed our wings were banked slightly to the left, and I was already 5 degrees off course. Before I could bring the plane back on course, I noticed we were now 100 feet high and still climbing.

Steve sat chuckling beside me. It wasn't a condescending laugh, but rather one of those "I've been there and know how you feel" laughs.

Wearing these glasses, everything in me felt like we were straight and level, not climbing, descending, or turning

even though the instruments indicated we were. Even stranger, when I leveled our wings per the attitude indicator, it felt like we were in a slow turn to the right. If I wasn't careful, my tendency was to start a left bank again to satisfy my equilibrium.

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Knowing the purpose of this training, I declared war on my senses and was determined to win this battle by learning to tell myself no. The

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decision to trust those instruments instead of my inner ear didn't magically stabilize our altitude. There were still lessons to be learned.

Steve instructed me to make the attitude indicator my home base. This



single instrument shows where your wings and nose are in relation to the horizon and therefore communicates an incredible amount of information. It's been in every plane I've ever flown, but because I've always been able to see the real horizon outside, I haven't used it much.

This brings up an interesting realization I had on this flight. As a VFR pilot, my windshield has always been my main instrument and rightfully so. It



indicator and altimeter confirmed I was indeed climbing. If my wings were banked ever so slightly on the attitude indicator, a glance to the heading indicator would confirm I was creeping off course.

The pace of an instrument scan also was critical to success. Steve said if my scan was too fast, I wasn't fully digesting the information from that instrument. If it was too slow, other instruments were being neglected too long. He recommended somewhere around three seconds as a starting point.

The world, at least my world at 3,500 feet, was in perfect harmony for about a tenth of a second before a slight correction was needed again. Flying truly is a series of continual corrections.

Steve said if my altitude was slightly low, I should just think back pressure on the yoke while continuing my scan of the other instruments. That would be enough. If I paused on the altimeter until my altitude was fully corrected, my heading had no hope of staying put. Small corrections without fixating on any one instrument was the key to smooth and precise flying.

I do not plan on ever flying into clouds as a VFR pilot, but meteorological mood swings happen and pilots find themselves in not-so-ideal situations.

Who's to blame? The pilot of course, but when you're in a cloud it doesn't matter. All that matters is that you can make a coordinated 180-degree turn and get out of what

you just flew into.

So that is precisely what we practiced next. Steve pointed to the small white letters under the turn coordinator that read, "2 MIN." He explained that if I flew a coordinated turn with my wings on those tick marks I would make a complete 360-degree turn in two minutes. So, to make a 180-degree turn and get out of a bad situation, I could fly a standard-rate turn for one minute and be flying in the complete opposite direction.

I was intrigued with this theory and had to test it. I slowly banked the plane and held it in a standard rate turn. Sixty seconds later we were within 5 degrees of a complete 180-turn. That's close enough to get out of a bad situation.

Flying solely on instruments was a fun exercise, and I enjoyed the challenge of keeping everything in harmony, but it also was completely exhausting. After an hour of flying in this manner, I could feel myself getting sloppy. My precision, or lack of it, revealed my fatigue.

Those silly glasses taught me more than just how disorienting it is to fly with a "windshield failure." They taught me how to again use that fifth force of flight—trust. It's what keeps us in the air—whether you're just starting flight training, about to solo, or just accidentally flew into a cloud. (If the latter is true, put this magazine down and start watching those instruments.) **CAA**

Brady Lane, CAA Bobbys, is a multimedia journalist for EAA and a sport pilot.



TRUSTING THE SIX PACK

As I was learning to trust this "six pack" of instruments, I was intrigued with how well they all backed each other up.

What I saw on one instrument was confirmed by another. If my wings were slightly above the horizon on the attitude indicator, a quick scan over to the vertical speed