



## LOOKING OUTSIDE - Understanding the Sight Picture

December 2010

Jean Runner, MCFI

There you are in the practice area with your student hoping to see him finally perform the steep turn to the Practical Test Standards. He turns left, then right, and left again and each time he can not hold altitude or bank angle. You have reminded him time after time to “look outside and follow the horizon”. But for some reason the student is reluctant to keep his eyes off of the instruments and look outside for the very important sight picture. “OK, you say, lets try this”, and you cover up the instruments forcing the student to look out. The next thing you hear is “wow, that really works, look I stayed on altitude.” And you reply, “Now do you see what I mean by the ‘sight picture’? All you have to do is follow the horizon as it relates to the airplane during the turn and you will be able to hold altitude and bank angle much more easily than looking at the instruments.”

Why is it so difficult for the student to look outside and not stare at the instruments? Too many times during a first or second lesson, I have overheard instructors pointing out the six flight instruments and their purpose as a primary reference for flying the plane. Remember the law of primacy, “*what is first learned is best remembered?*” Teach them instead to look out the window!

The new student usually does not understand that the instruments have a “lag” in them and by the time the human brain analyzes what is being seen on the panel, the plane has already lost heading and/or altitude. To help your student form good habits right from the start it is important to introduce outside visual references. Why not instruct the pilot to look outside from the very beginning? The first thing a student and instructor do on the first lesson is to taxi. Do you allow the student to look inside while taxiing? I sure hope not. Instead, you tell him or her to look around and watch for other traffic and pay attention to taxi and runway markings to avoid an incursion.

Here is another example of failure to use an outside reference. You brief your commercial candidate on the ground reference maneuver, eights-on-pylons. You discuss how to respond if the “line-of-sight” appears ahead or behind the ground reference. You emphasize the importance of staying coordinated and to make small adjustments for altitude. However, during practice of the maneuver you see your student using the rudder to keep the line-of-sight on the ground reference. The inclinometer is bouncing off the right and left side like a ping pong ball in water. The VSI is moving rapidly up and down as he adjusts altitude and you are hoping that your lunch stays where it belongs. Once again you have to remind your student to look outside and divide his or her attention between watching for traffic, looking at the ground reference, and only briefly scanning the instruments.

Teaching the basics of flying; pitch, power and trim early will allow the student to form good habits and learn to instinctively manage the airplane. Soon he or she will be able to add more advanced maneuvers without having to think about holding heading and altitude. You will want to emphasize the importance of looking outside for traffic and point out that looking at a point on the distant horizon will help them maintain their heading and altitude. Having the airplane trimmed allows the pilot to focus on other duties such as scanning for traffic and staying on course. These two concepts in combination - an outside reference and a well trimmed airplane - go a long way in helping a pilot successfully fly the plane.

The most basic maneuver - straight and level - requires mastery of two flight maneuvers. I remember reading, years ago, about an ATP who was having his six month proficiency check and was asked to fly straight and level. “OK, he answered, which one do you want first?” I’m not sure if his check ride was continued. Straight flight is accomplished by flying the plane in a straight line. Duh! What is the simplest way to do that? You might answer,” that’s easy, watch the heading indicator to keep the wings level and fly a straight line.” Well, that’s fine if you are working on your instrument rating and/or flying in the clouds but for VFR flight there is a much better way. Use a sight-picture. Look out the window at a point in the distance and keep the plane pointed at that reference. This method results in the student maintaining a heading within a few degrees.

Level flight is a matter of trimming the plane and leaving the power at a given setting to maintain altitude. By looking outside you can see the airplane attitude remaining constant as it relates to the horizon in front of the plane and the angle of the wingtip – leading edge to trailing edge - in relation to the distant horizon to the side. A constant pitch attitude and a quick glance - no more than a second or two – at the instruments will confirm what your eyes are telling you.

The PTS for a Private or Commercial Rating requires maneuvers to be accomplished successfully and correctly and with good performance techniques. The most important is the discipline to look out the window except for those tasks simulating flight in instrument meteorological conditions (IMC).

Good discipline during primary training in VMC conditions has a way of transitioning to good habits for more advanced ratings. Why not teach it right the first time and save yourself and your student unnecessary frustration during their future training? Looking outside when in VMC conditions is the key to becoming a proficient and safe VFR pilot.

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619 820-3737 [hwranner@earthlink.net](mailto:hwranner@earthlink.net)

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