STAN-EVAL NOTES

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Trend Analysis Results: Thanks to VAWG Form 5 and Form 91 check pilots for the prompt response to my request for information needed to complete the twice-yearly trend analysis report. In the first half of 2009, we administered 53 Form 5 check rides, with 6 failures (11%); and 23 Form 91 check rides, with 4 failures (17%). Now for the reasons: almost all of the specific causes could be categorized as either inadequate systems knowledge or lack of proficiency in some aspect of aircraft control. Inadequate systems knowledge was a factor in all of the Form 91 failures, as well as in several of the Form 5 failures. The Form 91 issues were all related to electronic search. One of the Form 5 issues involved familiarity with CAP radios, but most were related to G1000 and/or GFC700. Other causes: stall recovery, unusual attitude recovery, emergency approach to landing, crosswind proficiency, and loss of situational awareness. Thoughts? Suggestions? How can we use this information to improve our training?

Density Altitude (*contributed by Steve Hertz*): With summer temperatures still upon us for another 6-8 weeks, we need to consider the effects of heat and humidity on airplane performance. Higher temperatures and humidity affect airplane performance because they lower the density of the air. Lower density air means longer takeoff rolls, degraded climb rates, and lower engine performance.

The POH for our Cessna aircraft provides a convenient way to compute aircraft performance as a function of aircraft weight, pressure altitude, and temperature. Take the time to compute takeoff, climb, and landing performance. This exercise can be especially important at airports like Mountain Empire (MKJ) or Hot Springs (HSP), where density altitude often exceeds 5,000 feet. When operating in high density altitude environments, don't forget you must lean the mixture, even on takeoff. A full power run-up helps determine the best setting for takeoff.

Note that the temperature that you use when computing takeoff and landing distance may be considerably higher than what AWOS reports. AWOS reports the temperature of the air, which is lower than the temperature over an asphalt runway. Use temperature 10 degrees (F) higher on a hot summer day to account for the increased temperature in ground effect.

Although we can accurately predict performance degradation due to temperature, there is no easy way to account for the effects of humidity, which can be significant. Decreasing expected performance by another 10% to account for humidity is reasonable when humidity exceeds 50%.

As a rule of thumb, stay on the ground if you cannot expect to achieve a climb rate of 300 fpm on takeoff or in operations within 1000 AGL (low level search operations). This point is especially critical for mountain flying, as downdrafts routinely exceed 300 fpm.

Next Issue: Please send suggestions to: avi8rix@gmail.com.