

ROTORCRAFT CHECKRIDE Training Musings

By Matt Johnson

MAGENTA CHECKRIDES

Let's start this article by pushing Direct-Enter-Enter; that will quickly get us to the intended point, right? Ok, my pilot humor isn't the greatest, but stick with me! A lot has changed in the way of aviation technology in the last 20-plus years, especially in terms of automation, and thankfully it isn't just our fixed-wing brethren who are benefiting from all the progress. Instead, both reciprocating and turbine-powered, modern single-engine helicopter pilots are enjoying the benefits of an ever-improving and affordable suite of available avionics and autopilot systems.

If you've been in aviation for an appreciable amount of time, you have likely heard the phrase "children of the magenta," an expression that coincides with my Direct-Enter-Enter attempted humor. This phrase was coined by the late Warren Vanderburgh, an incredible aviation leader and educator who was a retired Air Force fighter pilot and major airline captain when he first uttered the phrase. The now-known idiom was born from a 1997 presentation he delivered to airline pilots about the perils of automation dependency. The premise of a magenta line gives light to the simple task of going from Point A to Point B by merely following that uniquely colored line.

Automation dependency has become an inherent risk to aviation, and automation illiteracy is perhaps even more dangerous. Both dependency and illiteracy must now be considered, given the surge in avionics within our sector of the industry.

As an examiner, I've seen both issues during flight exams. The automation dependency problem tends to occur with more experienced pilots, typically during ATP exams in larger twin-engine helicopters. Often this rears its ugly head when the pilot is tasked with some type of automation failure and is now required to "hand-fly" an instrument procedure. Or it happens when they push a button or set a course, heading, altitude, etc., but fail to

verify that the autopilot is actually doing what they commanded it to do. These pilots have become too dependent on automation in these instances; their stick-and-pedal skills suffer. On the other hand, automation illiteracy seems to be more prevalent with more junior pilots during private, commercial, or instrument exams.

In one such case of automation illiteracy, an applicant arrived for a private pilot exam in an R44 with an incredible avionics package complete with a glass panel, stability augmentation system, and two-axis autopilot. Apparently, the applicant had completed the majority of his training in a different R44 with traditional gauges and no autopilot, but a recent change in the flight school's fleet left the applicant finishing his training in the newer model with more sophisticated avionics and autopilot.

The applicant's inadequacies in this system became apparent during start-up when he failed to complete any type of system check of the autopilot system. When queried about this and asked what the flight manual supplement specified to be done for a systems check under "Starting Engine and Run-Up," I was met with a look of bewilderment and then told, "It seems to be working fine." The applicant's woes continued when he was given a diversion during his cross-country portion of the exam. Suffice it to say, a mismanagement of aircraft control by improper random button pushing resulted in an altitude loss greater than the acceptable standard and the aircraft ended up on the cusp of a vortex ring state situation. The intervention on my part because of these factors obviously resulted in a notice of disapproval to an applicant who was now hanging his head rather low. During the debrief with the applicant and his CFI, it was revealed that neither of them had received proper training on the equipment installed in the helicopter, nor had they studied and become familiar with the readily available

flight manual supplement provided by the manufacturer. This was unfortunate. If it is installed in the aircraft, we will test you on it.

As more and more general aviation helicopters are equipped with advanced avionics and stability augmentation systems, it is imperative that applicants and CFIs alike become familiar with the functionality of the system and have a basic understanding of the components that make up the system. In addition, know the operating limitations and how to respond to malfunctions. All of these items are located in the approved flight manual supplement.

In the end, the applicant went on to complete formal training on the avionics package installed in the aircraft, and returned a few weeks later to complete his exam with flying colors. Those colors included magenta!



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