By Matt Johnson

DOWN TO THE EIGHTH

Over the past several years, I've noticed applicants of all levels struggle with weather. No, I'm not talking about weather theory, which most enjoy as much as a root canal. I'm referring more to the application and correlation of weather products and how to interpret what you're observing, often in terms of color codes presented.

Applicants often can rotely recall what defines a ceiling, and recite visibility and cloud clearance rules. But I commonly hear, "It all looks green; we should be good." Often, they miss minutia in the details.

One of the more prominent issues I've observed is the lack of consideration about just how quickly a non-ceiling layer can become a ceiling.

As a reminder, cloud coverage levels are reported in eighths (oktas), with one okta of cloud cover being the equivalent of 1/8 of the sky covered at a given station equipped with necessary measuring instrumentation. A ceiling is defined as the lowest layer of broken (BKN) or overcast (OVC) clouds, whereas few (FEW) or scattered (SCT) is not technically considered a ceiling. Said another way in terms of measurement: a ceiling is the height of the lowest cloud layer that contributes at least five oktas (5/8) to the total sky cover, and this is where many pilots miss these small yet impactful details.

EXPRESSION	CLOUD COVER
Sky Clear (SKC)	No Clouds
Few (FEW)	1-2 oktas
Scattered (SCT)	3-4 oktas
Broken (BKN)	5-7 oktas
Overcast (OVC)	8 oktas

The typical heavy-hitter electronic flight bag (EFB) apps are used as the source of weather information by most applicants. Please don't take me wrong; I fully support EFBs and the "heavy-hitter" apps. However, in many practical exams, applicants quickly glance at weather color coding and make decisions without further analysis.

Let's take another trip back to basics. The "Green-VFR" coding "dots" are associated with conditions of: no ceiling or ceiling greater than 3,000 feet AGL and greater than 5-mile visibility. The "Blue-MVFR" coding is for: a ceiling of 1,000 to 3,000 feet AGL and/or 3 to 5 miles. The "Red-IFR" coding represents: a ceiling of 500 feet to below 1,000 feet AGL and/or 1 mile to less than 3 miles. And lastly, the "LIFR-Magenta" coding conveys a ceiling below 500 feet AGL and/or less than 1 mile.

A few years ago, I facetiously uttered the phrase "green-dot syndrome" as a phrase used to describe situations where pilots accept a flight after glancing at the weather product displayed on their EFB, seeing "all green," and making the "go" decision without further exploration. Surprisingly, this phrase stuck, which isn't bad as it brings a new level of awareness to the problem. And here is the problem: the pilot (or applicant) purposes to depart only to find "lower than reported" ceilings even though everything is displaying green. The problem generally lies in the fact that the expressions FEW and SCT are not a ceiling. However, several factors should be considered: (1) the amount of cloud coverage over a reporting station is just that – a limited sampling of that particular area; (2) weather conditions often rapidly change and (3) because of the reporting classification measurements (oktas), what is reported as an SCT layer at 400 will show a "green dot" indication, yet that same 400 SCT layer is only one okta from being classified as a magenta dot or "LIFR."

For these very reasons, when making a weather decision, pilots must look at all associated layers of clouds that are being reported, ceiling or not!

In 2023, I petitioned the National Weather Service to make a change on its new platform (www.aviationweather.gov) that would highlight FEW and SCT layers that could be impactful to pilot decision-making. Officials agreed to add another indication when FEW or SCT layers are reported as less than 3,000 feet. Now, when conditions are reported as meteorological VFR (traditional green dot), and FEW or SCT layers are also reported, you will now see an orange concentric ring around the green dot to bring your attention to those lower layers of clouds that aren't technically classified as a ceiling. Currently, the NWS Aviation Weather Center is the only entity providing pilots with this symbolic information. I encourage you to incorporate color-coded displays on the observation layer of www.aviatonweather.gov in your big-picture weather analysis to see areas with FEW and SCT layers that could impact you in reality and on checkride day!

Flight Category

Symbol	Category	Description
●	VFR	No ceiling or ceiling greater than 3,000 feet AGL and greater than 5 mile visibility
●	VFR*	VFR with non-ceiling clouds below 3,000 ft AGL
●	MVFR	1,000 to 3,000 feet AGL and/or 3 to 5 miles
●	IFR	500 to below 1,000 feet AGL and/or 1 mile to less than 3 miles
●	LIFR	Below 500 feet AGL and/or less than 1 mile

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