

appealed that ruling in February, resulting in yet another delay. A final decision on the matter likely won't be reached for at least another year.

Lacking definitive legal precedent, NBAA

continues to support the established

mechanisms to determine pilot safety and

proficiency – including medical certifica-

tion requirements and mandatory recurrent

training and check rides – as effective

measures to determine whether a pilot

over the age of 65 is competent to perform

as part of a flightcrew.

NBAA recommends that until the courts

render a decision, Part 91 and Part 135

operators should be cautious when consid-

ering enforcement of mandatory retirement

because hiring, termination and retirement

decisions must be made using non-

discriminatory practices. And, of course,

operators are strongly urged to work with

qualified legal counsel and human resource

experts to understand the current laws. +

FOR MORE INFORMATION

Get additional guidance on this topic at www.nbaa.org/personnel/age-60.

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Tips&Tools

Heat, Humidity Call for Caution



During a stifling 107-degree day in Las Vegas, NV, an Aero Commander 680 began its takeoff roll. After becoming airborne, the airplane didn't climb. It just held a nose-high attitude as it flew down the runway until hitting terrain about 600 feet beyond the departure end of the runway. The crash caused two serious injuries.

This is just one of many National Transportation Safety Board reports that show what can happen when temperatures soar. Heat and humidity can take a toll on aircraft performance, so operating in such conditions calls for vigilance. Unlike ice and snow, it's what you can't see during summer weather that could kill you. Heat and humidity make air less dense, creating a density altitude that's higher than the absolute altitude over an airport. Known as high density altitude, this rarified air at lower altitude saps engine performance and lift. Thrust is lost because props are less efficient in thin air. Overall, more runway is needed for takeoff and landing, and vertical speed suffers. Study your aircraft's performance charts to ensure it will be able to clear any obstacles in such conditions.

"Our policy when flying into Aspen, CO, is to add 1,000 feet to the takeoff and landing distance," said Mark Tillman, who

pilots a Dassault Falcon 900 for an Arizona company. "If this isn't enough, then we work with the chief pilot to come up with a solution."

The solution, Tillman explained, could be to use a different aircraft or to depart in the early evening, when things are cooler, or even off-loading fuel, if possible.

Brian Ready, an independent aviator based in Scottsdale, AZ, said he consults the performance charts for the airplanes he pilots, regardless of the weather. "Do a performance check every time" to ensure safety, he recommended.

Density altitude is pressure altitude corrected for nonstandard temperature, but that's academic stuff. Pilots just need to know the higher the temperature, the higher the density altitude. Add humidity, and density altitude soars even more. Suddenly, an airplane taking off at sea level performs as if taking off from the high hills, while high density altitude at a mountain airport could place an aircraft outside its envelope.

At 96 F, air can hold eight times the water vapor than at 42 F. For high summer humidity, the Federal Aviation Administration (FAA) recommends adding 10 percent to your computed takeoff distance and expect a reduced climb rate.

For a more exact calculation, the Koch chart is one of the best tools to visually display the risks of flying in hot-and-humid weather. On the chart, the pilot simply draws a straight

line connecting the airport temperature scale with the airport pressure altitude scale (find pressure altitude by setting your altimeter to 29.92). The line intersects scales showing the adjustments in takeoff distance and the decreased rate of climb.

On the Koch chart displayed in FAA Density Altitude pamphlet 8740-2, the airport temperature is 100 degrees and the pressure altitude is 6,000 feet. Those conditions show a 200 percent increase in takeoff distance and an expected 75 percent decrease

A final note: On hot days, watch for buckling pavement when the temperature tops 100 F. An FAA airport certification bulletin warns: "Pavement blow-ups and debris could damage aircraft or cause a pilot to lose directional control." +

FOR MORE INFORMATION

Get the FAA's Density Altitude pamphlet at www.faa.gov.