



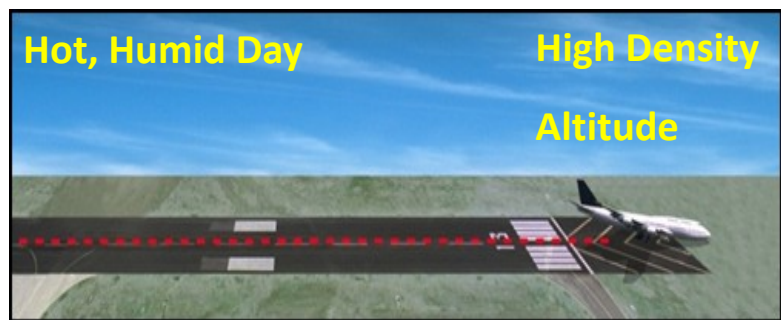
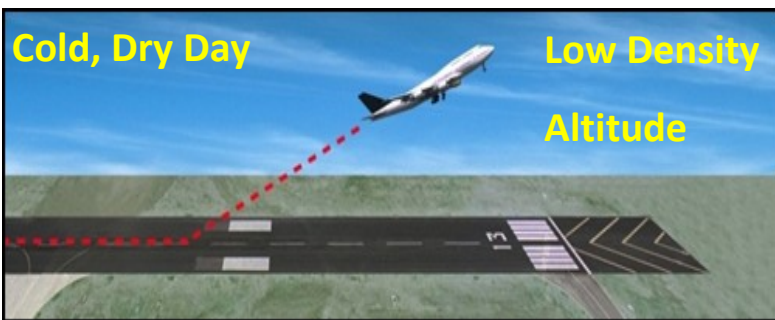
High Density Altitude

High density altitude accounts for 7.3% of all U.S. aviation weather-related accidents.

Density Altitude – The altitude in the standard atmosphere at which the air has the same density as the air at the point in question. An aircraft will have the same performance characteristics as it would have in standard atmosphere at this altitude.

High Density Altitude – A condition of the atmosphere that reduces an aircraft's performance capability to below a level of standard performance at a specified altitude.

Service Ceiling – The maximum density altitude where the best rate-of-climb airspeed will produce a 100 feet-per-minute climb a maximum weight while in a clean configuration with maximum continuous power.



Air density is determined by: Pressure, Temperature, and Humidity.

On a hot, muggy day, the air becomes “thinner” or less dense, and its density at a pilot’s location is equivalent to a higher altitude in the standard atmosphere.

- Thus the term “high density altitude.”

Pilots must determine if high density altitude will impact their flight by:

- Calculating density altitude
- Checking their aircraft performance charts.

High Density Altitude Hazards

- Reduced Power (engine ingests less air to support combustion)
- Reduced Thrust (propeller has less “grip” and jet exhausts less mass)
- Reduced Lift (air exerts less upward force on the airfoils)
- Longer takeoff roll is required
- Smaller rate of climb
- Lowers aircraft’s service ceiling
- Longer landing roll required