

SYST 460/560 Weather Homework

1) Weather Hazards to Aviation. Complete the following table

Hazard to Aviation	Weather Phenomenon	Describe How the Weather Phenomenon Creates the Hazard	Describe the Weather Factor/Pattern that Generates the Weather Phenomenon
Loss of Lift	Ice	<i>Ice changes the flow and shape of the wing affecting the generation of lift</i>	
	Frost		
Loss of Separation/Collision	Low Ceilings		
	Loss of Visibility		
Passenger Cargo/Damage	Turbulence		
Loss of Lift/Loss of Control	Windshear		
Structural Damage	Hail		
Loss of Equipment	Lightning		
Passenger/Cargo Damage	Clear Air Turbulence		

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- 2) According to Basic Weather Theory, describe what generates “atmospheric pressure differences”?
- 3) Describe the difference between Low Pressure Systems and High Pressure Systems. How are they caused and what is the impact on the weather.
- 4) Dewpoint
 - a. Describe Relative Humidity
 - b. Describe the Temperature/Dewpoint Relationship
 - c. Describe the role of Dewpoint in the formation of each of the following: (i) Dew, (ii) Frost, (iii) Fog and (iv) Clouds are formed based on Dewpoint
 - d. Calculate the height of the cloud base: Temperature (T) = 80 °F, Dew point (DP) = 75 °F, Convergence Rate (CR) = 4.4°
- 5) Thunderstorms
 - a. Describe how Thunderstorms are formed (two types)
 - b. Describe each of the 10 hazards of Thunderstorms