

Fog - Ground Lesson

Attention

Can I expect fog when I get there tomorrow morning?

Objective

To know the different types of fog.

Schedule

Ground instruction – 10 minutes

Reference Material

<https://en.wikipedia.org/wiki/Fog>

Material

Advection fog occurs when moist air passes over a cool surface by advection (wind) and is cooled. It is common as a warm front passes over an area with significant snow-pack. It is most common at sea when moist air encounters cooler waters, including areas of cold water upwelling, such as along the California coast (see San Francisco fog).

Moist over cold

Radiation fog is formed by the cooling of land after sunset by thermal radiation in calm conditions with clear sky. The cool ground produces condensation in the nearby air by heat conduction. In perfect calm the fog layer can be less than a meter deep but turbulence can promote a thicker layer. Radiation fogs occur at night, and usually do not last long after sunrise, but they can persist all day in the winter months especially in areas bounded by high ground such as the Vale of York in England. Radiation fog is most common in autumn and early winter.

High humidity early evening

Cool nights, low winds

Precipitation fog (or frontal fog) forms as precipitation falls into drier air below the cloud, the liquid droplets evaporate into water vapor. The water vapor cools and at the dew point it condenses and fog forms.

Saturation due to evaporation

Common with warm fronts

Upslope fog forms when moist air is going up the slope of a mountain or hill which condenses into fog on account of adiabatic cooling, and to a lesser extent the drop in pressure with altitude.