

Aviation Weather Guide CEILINGS & VISIBILITY



Reductions in ceiling heights and visibility may be caused by fog, mist, haze, smoke, precipitation, blowing snow, dust storms, sand storms, and volcanic ash.

Common Causes of Visibility Reductions

Fog (BR, FG) - Small water droplets suspended in the air above the earth's surface. Visibility may be reduced to less than ¼ mile.

Haze (HZ) - Microscopic particles suspended in the air which scatter sunlight. May extend vertically up to 15,000 ft.

Smoke (FU) - Small particles suspended in the air due to fires, industrial burning, and other sources. May becoming widely scattered through the atmosphere and travel long distances.

Precipitation (RA, SN, PL) - Liquid or solid water droplets which reduce visibility to varying degrees.

Blowing Snow (BLSN) - When surface winds exceed 30 kts, snow can remain suspended in the air instead of settling to the ground. Most likely to occur when snow is dry and powdery. May result in whiteout conditions.

Dust Storm/Sand Storm (DU, SA) - Occurs when small particles of dust or sand become suspended in the air due to strong surface winds. Typically occurs over dry regions.

Volcanic Ash (VA) - Fine particles of rock powder originating from a volcanic eruption that remain suspended in the atmosphere for an extensive time.



Mountain/valley fog obscuring mountain peaks

Flight Categories

VLFR: Ceiling < 200 ft and/or visibility < ½ mile

LIFR: Ceiling < 500 ft and/or visibility < 1 mi

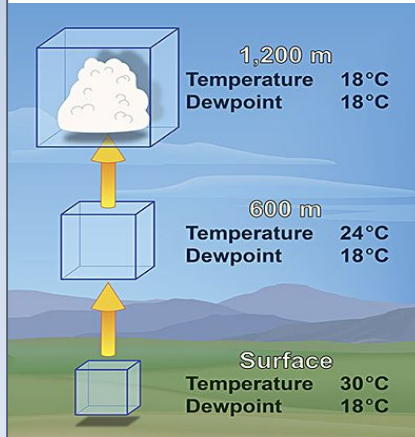
IFR: Ceiling 500 ft < 1,000 ft and/or visibility 1 - 3 mi

MVFR: Ceiling 1,000 - 3,000 ft and/or visibility 3 - 5 mi

VFR: Ceiling > 3,000 ft and visibility > 5 mi

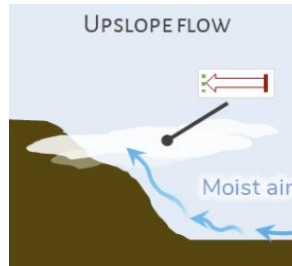
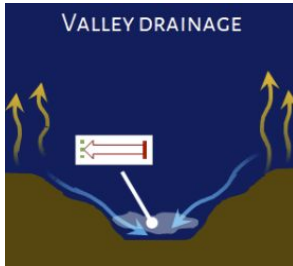
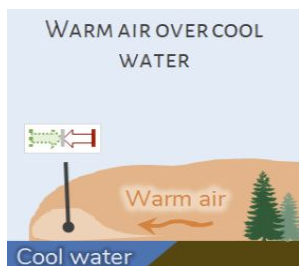
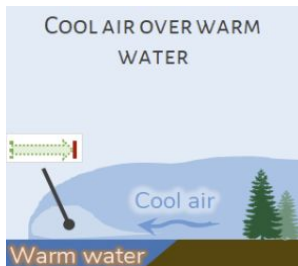
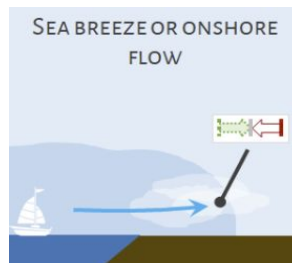
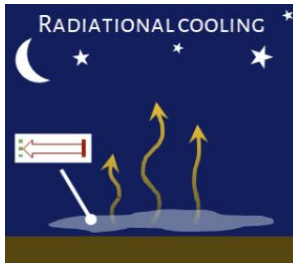
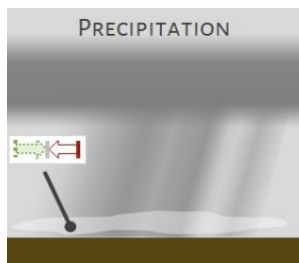
Cloud Formation

Rising air cools to the dew point temperature and condenses



Fog Development

Similar to cloud formation, fog develops when the air temperature and dew point temperature meet, causing saturation under calm wind conditions.



Adds moisture to reach air temp



Lowers air temp to reach dew point temp



Adds moisture AND lowers air temperature

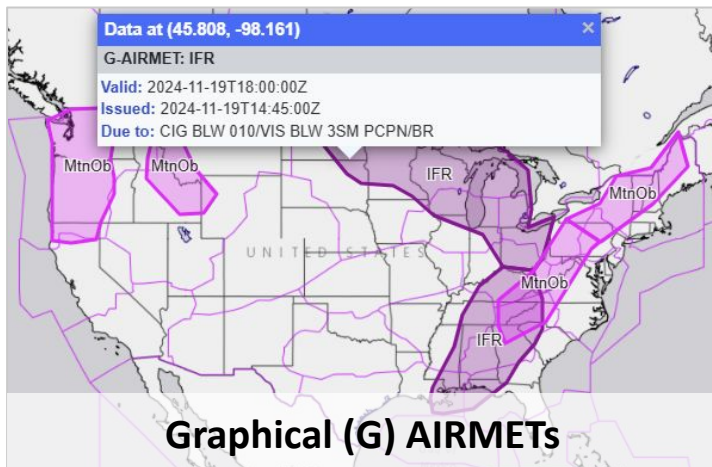
PRE-FLIGHT (MISSION PLANNING)

- ✈ Check the latest pilot reports along your route.
- ✈ Check ceiling/visibility forecasts along your route and for the hours leading up to your planned departure.
- ✈ Check for G-AIRMETs & SIGMETs along your route. G-AIRMETs show areas where IFR and mountain obscurations are expected. SIGMETs show areas where visibility is reduced due to sand/dust and/or volcanic ash.
- ✈ Consider adjusting departure/arrival times. IFR conditions are most prevalent in strong storm systems and at night/in the morning.

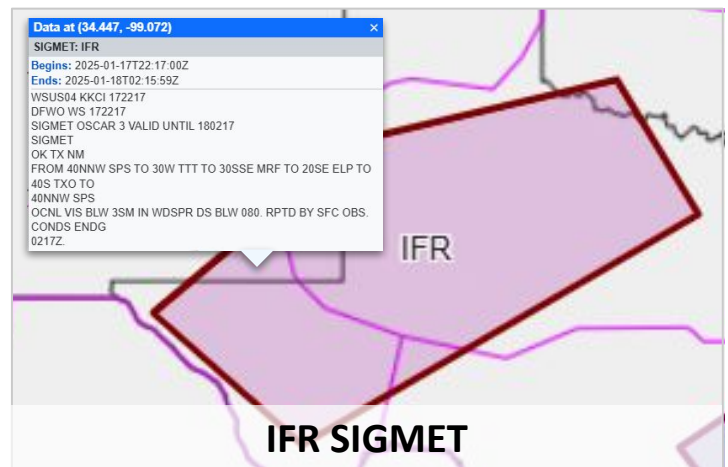
IN-FLIGHT (SITUATIONAL AWARENESS)

- ✈ MVFR-LIFR may **impair a pilot's ability to see the runway** and other potential hazards in flight.
- ✈ MVFR-LIFR may **lower *slant-range* visibility** (visibility from cockpit to ground and features ahead), which impacts a pilot's ability to see approach/identifier lights.
- ✈ Flying in MVFR-LIFR may lead to **pilot fatigue!**
- ✈ MVFR-LIFR may **obscure hazards** like mountains, hills, tall towers, or tall buildings.
- ✈ **Sand and volcanic ash may damage aircraft.** (engines, intake, frame, etc.)

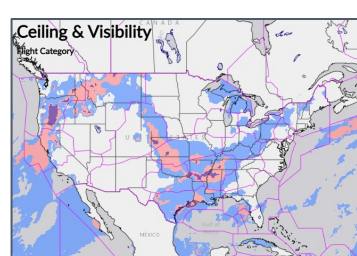
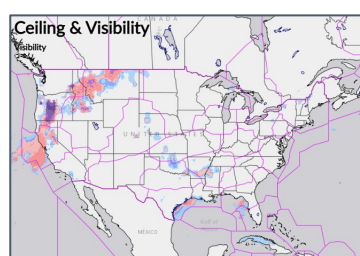
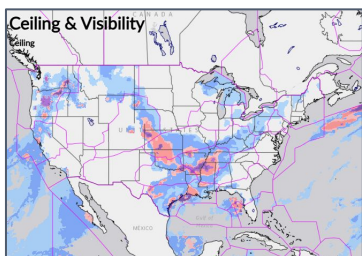
Aviation Weather Center (AWC) Ceiling and Visibility Forecast Products



IFR and Mountain Obscurations

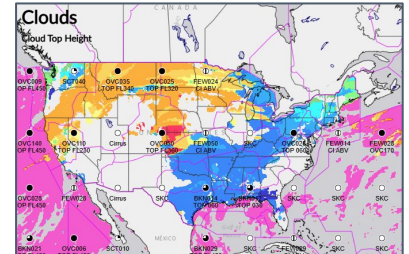
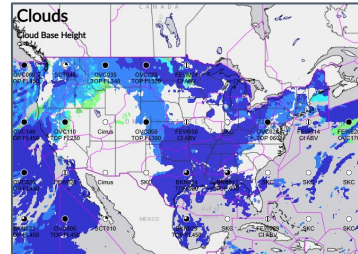
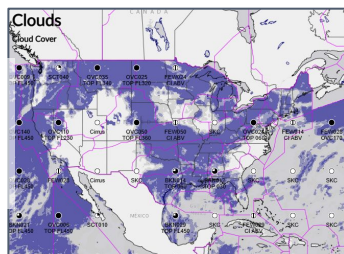


Blowing Dust, Volcanic Ash



Ceiling & Visibility Forecasts

Cloud Cover, Cloud Base, & Cloud Top Forecasts



Ceiling and visibility resources available at:
AviationWeather.gov