

TURBULENCE

There is an irregular motion of air resulting from "EDDIES" and vertical currents. Can cause light bumps or loss of control.

TYPES/CAUSES OF TURBULENCE

Mechanical Turbulence (EDDIES):

Friction between the air and the ground especially from irregular terrain and man made obstacles, causes "EDDIES"

Thermal Turbulence:

Happens on hot sunny days when the sun heats the earth's surface unevenly. Isolated convection currents are set in motion and this results in turbulence.

Frontal Turbulence:

The lifting of the warm air by the sloping frontal surface and friction between the two opposing air masses produce turbulence in the frontal zone.

Wind Shear:

Marked changes in wind direction and speed either vertical or horizontal. If the change in wind is great you can expect severe turbulence.

CLASSIFICATION OF TURBULENCE

Light

Momentary slight changes in altitude and/or attitude or a slight bumpiness. Occupants may feel a slight strain against their seat belts.

Moderate

Occupants will feel a definite strain against their seat belts and unsecured objects will be dislodged.

Severe

Large and abrupt changes in altitude and/or attitude and usually, large variations in indicated air speed. The airplane may momentarily be out of control.

Extreme

Airplane is tossed about violently and is impossible to control. May cause structural damage.

Weather Signs

Look For Unsettled Weather When:

- barometer is falling
- temperature at night is higher than usual
- clouds move in different directions at different levels
- cirrus clouds increase. A large ring appears around the sun or moon and stays there until the overcast clouds thicken and obscure the sun or moon
- summer afternoon clouds darken.

Look For Steady Precipitation When:

- there have been signs of unsettled weather
- the wind is southeast to northeast and the pressure is falling. Rain or snow within a day if the pressure is falling slowly. If falling rapidly, rain or snow soon, with strengthening winds.

Look For Showers When:

- cumulus clouds develop in a westerly wind
- cumulus clouds develop rapidly in spring or summer early afternoon

Look For Clearing Weather When:

- the barometer rises
- wind shifts into west or northwest
- the temperature falls

Look For Continued Bright Weather When:

- sun sets like a ball of fire
- barometer is steady or slowly rising
- afternoon cloudiness decreases after 3PM to 4PM
- morning fog breaks within two hours after sunrise
- light breeze from west or northwest
- there is a red sunset

