

Atmospheric Pressure

Atmospheric pressure is the pressure at any point on the surface of the Earth due to the weight of the column of air above that point.

Measurement and Units of Atmospheric Pressure

1. The mercury barometer is the standard instrument for measuring atmospheric pressure.
2. Pressure is expressed in centimeters or inches of mercury, a true measure of the height of the mercury column.
3. Standard sea level pressure is 76 cm or 29.92 inches on this scale.
4. Another pressure unit used by meteorologists in drawing weather charts is millibars (mb).
5. One bar is divided into 1000 millibars.
6. Millibars are now known as hectopascals.

Winds

1. Wind is the movement of air caused by the uneven heating of the Earth by the Sun.
2. Sometimes wind blows gently, refreshing us. At other times, it blows strongly creating storms that cause widespread damages.
3. We need measurements of two quantities : direction and speed, to give a description of the wind.

Trade Winds

1. They blow from the Sub-tropical High Pressure Belt to the Equatorial Low Pressure Belt in the tropics between 30°
2. North and 30° South latitudes.
3. They blow as the N.E. Trades in the Northern Hemisphere and as the S.E. Trades in the Southern Hemisphere.
4. The name "Trade" is derived from a nautical expression " to blow tread" meaning to blow along a regular path or "tread."

Westerlies

1. They blow from the Sub-tropical high Pressure Belt to the Sub-polar low Pressure Belt in the temperate latitudes between 30° and 60° , on either side of the Equator.
2. They are more constant and stronger in the Southern Hemisphere because there are no large landmasses to interrupt them.
3. In places they become so strong that these winds are known as the Roaring Forties or the Brave West Winds and the Furious Fifties.
4. The belts of the Westerlies move north and south following the Sun's movement. These are known as Westerlies because they blow out of the west.

Polar Winds

1. They blow from the Polar High Pressure Belt to the Sub-polar Low Pressure Belt between latitudes 60° and the poles on both sides of the Equator.
2. These winds blow from the east to form the Polar Easterlies.
3. They are more regular in the Southern Hemisphere.
4. Polar winds are extremely cold and dry.
5. Climatic Winds or Periodic Winds
6. These winds change their direction along with change in time or change in climate. Land and sea breezes and the Monsoon winds are typical examples of periodic winds.

Monsoon Winds

1. Monsoon winds are seasonal winds characterised by a complete reversal in their direction from one season to another.
2. They blow from the sea to the land in summer.
3. They blow from the land to the sea in winter.