



WEATHER WORDS

INTRODUCTION

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PRECIPITATION: How Long?, How Intense?, How Widespread?, etc.

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Introduction

Meteorologists preparing weather forecasts and warnings compress a lot of information into standardised, brief messages. Their predictions for electronic media and newspaper 'headline' forecasts must be particularly concise.

Working under frequent deadlines (most capital city forecasts for instance, are updated every three hours), forecasters summarise information using consistent terminology to minimise the risk of misunderstanding.

Because forecasts are written for a specific time span and area, they should not carry too much detail, as they must be valid over large areas, perhaps 10 000 square kilometres for a capital city.

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Forecasting Terms

The following definitions of some common forecasting terms will help you extract the maximum information from forecasts.

Fine: No rain or other precipitation (hail, snow, etc). The use of fine is generally avoided in excessively cloudy, windy, foggy or dusty conditions. In particular, note that *fine* means the absence of rain or other precipitation such as hail or snow--not 'good' or 'pleasant' weather.

Dry: Free from rain. Normally used when preceding weather has also been relatively dry, and dry weather is expected to continue for at least a day or so.

CLOUD COVER

- **Clear:** Free from cloud, fog, mist or dust haze.
- **Sunny:** Little chance of the sun being obscured by cloud. (*Note: High level cirrus clouds are often thin and wispy, allowing a considerable amount of sunlight to penetrate them, sufficient to produce shadows. In this case the day could be termed 'sunny' even though more than half the sky may be covered in cirrus cloud.*)
- **Cloudy:** Predominantly more cloud than clear sky For example, during the day the sun would be obscured by cloud for substantial periods of time.
- **Overcast:** Sky completely covered with cloud.
- Forecasts of cloud cover normally give an average, if no significant variations are expected. A *clear day*, for example, may at some times see a few cloud patches.
- Forecasters expecting significant variations in cloud amount may use such terms as *sunny periods, sunny breaks, cloudy periods, cloudy at times, mostly/mainly sunny, mostly/mainly cloudy.*
- If expecting a major change in cloud cover, they usually indicate a distinct trend, e.g. *becoming sunny* or *cloud increasing.*

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Description of Phenomena

Fog: Suspension of very small water droplets in the air, reducing visibility at ground level to less than a kilometre.

Smog: Smog (contraction for 'smoke fog') is a fog in which smoke or other forms of atmospheric pollutant have an important part in causing the fog to thicken, and have unpleasant and dangerous physiological effects.

Mist: Similar to fog, but visibility remains more than a kilometre.

Frost: Deposit of soft white ice crystals or frozen dew drops on objects near the ground; formed when surface temperature falls below freezing point.

Precipitation: Any or all of the forms of water particles, whether liquid (e.g. rain, drizzle) or solid (e.g. hail, snow), that fall from a cloud or group of clouds and reach the ground. (See Drizzle, Rain)

Drizzle: Fairly uniform precipitation composed exclusively of very small water droplets (less than 0.5 mm in diameter) very close to one another.

Rain: Precipitation of liquid water drops greater than 0.5 mm in diameter. In contrast to showers, it is steadier and normally falls from stratiform (layer) cloud.

Showers: Usually begin and end suddenly. Relatively short-lived, but may last half an hour. Often, but not always, separated by blue sky.

Thunderstorms: Thunderstorms are one or more convective clouds in which electrical discharge can be seen as lightning and heard as thunder by a person on the earth's surface.
A severe thunderstorm produces one or more of :-

- hail at the ground with diameter of 2 cm or more;
- wind gusts at the ground of 90 km/h or more;
- tornadoes; or
- very heavy rain likely to cause flash flooding.

Tornado: A tall, rapidly rotating column of air between 5 and 1000 metres in diameter which is attached to the base of a cumulonimbus or large cumulus cloud and which is capable of producing damage at the earth's surface.

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Precipitation

DURATION

Brief: Short duration.

Intermittent: Precipitation which ceases at times.

Occasional: Precipitation which while not frequent, is recurrent.

Frequent: Showers occurring regularly and often.

Continuous: Precipitation which does not cease, or ceases only briefly.

Periods of Rain: Rain is expected to fall most of the time, but there will be breaks.

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INTENSITY

Slight or Light:

Rain: Individual drops easily identified, puddles form slowly, small streams may flow in gutters.

Drizzle: Can be felt on the face but is not visible. Produces little run off from roads or roofs. Generally visibility is reduced, but not less than 1000 m.

Snow: Small sparse flakes. Visibility generally reduced but not less than 1000 m.

Hail: Sparse hailstones of small size, often mixed with rain.

Moderate:

Rain: Rapidly forming puddles, down pipes flowing freely, some spray visible over hard surfaces.

Drizzle: Window and road surfaces streaming with moisture. Visibility generally between 400 and 1000 m.

Snow: Large numerous flakes and visibility generally between 400-1000 m.

Hail: Particles numerous enough to whiten the ground.

Heavy:

Rain: Falls in sheets, misty spray over hard surfaces, may cause roaring noise on roof.

Drizzle: Visibility reduced to less than 400 m.

Snow: Numerous flakes of all sizes. Visibility generally reduced below 400 m.

Hail: A proportion of the hailstones exceed 6 mm diameter.

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DISTRIBUTION OF SHOWERS (OR OTHER WEATHER PHENOMENA)

Few: Indicating timing, not an area.

Isolated: Showers which are well separated in space during a given period.

Local: Restricted to relatively small areas.

Patchy: Occurring irregularly over an area.

Scattered: Irregularly distributed over an area. Showers which, while not widespread, can occur anywhere in an area. Implies a slightly greater incidence than isolated.

Sporadic: Scattered or dispersed in respect of locality or local distribution. Characterised by occasional or isolated occurrence.

Widespread: Occurring extensively throughout an area.

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Wind Terms

The wind is a continuous succession of gusts and lulls associated with equally rapid changes of direction over a range which may exceed 30°. The mean wind speed over a period of time is therefore the mean of many gusts and lulls. Usually only the mean wind is forecast, unless the gusts are expected to be a significant feature. For instance, *Fresh, gusty southwest winds* indicates that the mean wind speed will be between 17 and 21 knots and the mean wind direction will be from the southwest, but that there will also be gusts to speeds significantly higher than the mean.

Gust: A gust is any sudden increase of wind of short duration, usually a few seconds.

Squall: A squall comprises a rather sudden increase of the mean wind speed which lasts for several minutes at least before the mean wind returns to near its previous value. A squall may include many gusts.

Wind descriptions (derived from the Beaufort Wind Scale) Wind speeds are given as the equivalent speed at a standard height of 10 metres above open flat ground

| | Units in km/h | Units in knots | Description on Land | Description at Sea |
|------|---------------|----------------|------------------------|--------------------|
| CALM | 0 | 0 | Smoke rises vertically | Sea like a mirror. |

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|----------------|-----------------|------------------|---|--|--|
| LIGHT WINDS | 19 km/h or less | 10 knots or less | Wind felt on face; leaves rustle; ordinary vanes moved by wind. | Small waveless, ripples formed but do not break: A glassy appearance maintained. | |
| MODERATE WINDS | 20 - 29 km/h | 11-16 knots | Raises dust and loose paper; small branches are moved. | Small waves - becoming longer; fairly frequent white horses. | |
| FRESH WINDS | 30 - 39 km/h | 17-21 knots | Small trees in leaf begin to sway; crested waveless form on inland water | Moderate waves, taking a more pronounced long form; many white horses are formed - a chance of some spray | |
| STRONG WINDS | 40 - 50 km/h | 22-27 knots | Large branches in motion; whistling heard in telephone wires; umbrellas used with difficulty. | Large waves begin to form; the white foam crests are more extensive with probably some spray | |
| | | 51 - 62 km/h | 28-33 knots | Whole trees in motion; inconvenience felt when walking against wind. | Sea heaps up and white foam from breaking waves begins to be blown in streaks along direction of wind. |
| GALE | 63 - 75 km/h | 34-40 knots | Twigs break off trees; progress generally impeded. | Moderately high waves of greater length; edges of crests begin to break into spin drift; foam is blown in well marked streaks along the direction of the wind. | |
| | | 76 - 87 km/h | 41-47 knots | Slight structural damage occurs -roofing dislodged; larger branches break off. | High waves; dense streaks |

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| | | | | | of foam; crests of waves begin to topple, tumble and roll over; spray may affect visibility. |
| STORM | 88 - 102 km/h | 48-55 knots | Seldom experienced inland; trees uprooted; considerable structural damage. | Very high waves with long overhanging crests; the resulting foam in great patches is blown in dense white streaks; the surface of the sea takes on a white appearance; the tumbling of the sea becomes heavy with visibility affected. | |
| | | 103 km/h or more | 56 knots plus | Very rarely experienced - widespread damage | Exceptionally high waves; small and medium sized ships occasionally lost from view behind waves; the sea is completely covered with long white patches of foam; the edges of wave crests are blown into froth. |

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Sea and Swell

Sea Waves: Waves generated by the wind blowing at the time, and in the recent past, in the area of observation.

Swell Waves: Waves which have travelled into the area of observation after having been generated by previous winds in other areas. These waves may travel thousands of kilometres from their origin before dying away. There may be swell present even if the wind is calm and there are no 'sea' waves.

Wave Period: The average time interval between passages of successive crests (or troughs) of waves.

Wave Height: Generally taken as the height difference between the wave crest and the preceding trough.

Wave Length: The mean horizontal distance between successive crests (or troughs) of a wave pattern.

| SEA [in open sea] | | |
|-------------------|-----------------|---|
| Description | Height (metres) | Effect |
| Calm (glassy) | 0 | No waves breaking on beach |
| Calm (rippled) | 0 - 0.1 | No waves breaking on beach |
| Smooth | 0.1 - 0.5 | Slight waves breaking on beach |
| Slight | 0.5 - 1.25 | Waves rock buoys and small craft |
| Moderate | 1.25 - 2.5 | Sea becoming furrowed |
| Rough | 2.5 - 4 | Sea deeply furrowed |
| Very rough | 4-6 | Sea much disturbed with rollers having steep fronts |

| | | |
|------------|---------|---|
| High | 6-9 | Sea much disturbed with rollers having steep fronts (damage to foreshore) |
| Very high | 9-14 | Towering seas |
| Phenomenal | over 14 | Precipitous seas (experienced only in cyclones) |

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| SWELL | | | |
|--------------------------------------|-------------|--------------------------------------|-------------|
| Description | Wave Length | Period | Wave Height |
| Low swell of short or average length | 0 - 200 m | Less than 11 sec | 0-2 m |
| Long, low swell | over 200 m | Greater than 11 sec | 0-2 m |
| Short swell of moderate height | 0-100 m | Less than 8 sec | 2-4 m |
| Average swell of moderate height | 100-200 m | Greater than 8 sec, less than 11 sec | 2-4 m |
| Long swell of moderate height | over 200 m | Greater than 11 sec | 2-4 m |
| Short heavy swell | 0-100 m | Less than 8 sec | over 4 m |
| Average length heavy swell | 100-200 m | Greater than 8 sec, less than 11 sec | over 4 m |
| Long heavy swell | over 200 m | Greater than 11 sec | over 4 m |

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