

## Altimeter Characteristics

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All aneroid altimeter/barometers, like those in the **SUN** line, share certain characteristics. It's important to understand that altimeters only *indirectly* measure altitude; what they directly measure is ambient air pressure (sometimes called barometric pressure). With an altimeter, this air pressure reading is then "translated" into an altitude reading on the face of the gauge.

Air pressure is a relatively reliable (but not a perfect) marker for elevation, because air pressure diminishes consistently as elevation increases (all the way to the outer limit of the atmosphere, where air pressure becomes zero). So what an altimeter does is measure air pressure and air pressure changes, and translates those changes to corresponding altitude readings on the altimeter dial.

However, it's important to note there are two things that affect ambient air pressure:

1. Altitude
2. Weather

Often a weather forecaster will remark that, for instance, a "low pressure front" or "high pressure front" is moving into a region. This means that the air pressure will drop or rise, due to changes in weather patterns, which are in constant motion. Worsening weather usually correlates to falling air pressure, and improving weather usually correlates to rising air pressure.

So, although your altimeter may remain at one location (and one altitude), weather changes will cause the altitude indicator-needle to move, clockwise or counterclockwise, depending upon how the weather (i.e., the air pressure or barometric pressure) is changing. With significant changes in weather, this change can result in changes in altitude readings of as much as  $\pm 500$  feet or more.

That is why it is important, every time the user is at a place of known altitude (e.g., roadside elevation signs, known locations like a peak or trail junction on a topographic map, etc.), to recalibrate the unit to the correct altitude reading (by turning the outer ring).

This begs the question: How do aneroid barometers like those in the **SUN** line compare to GPS altimeters, in terms of accuracy? According to *Wikipedia* (posting of May 2014), an aneroid altimeter "*is more reliable, and often more accurate, than a GPS receiver for measuring altitude; GPS altimeters may be unavailable, for example, when one is deep in a canyon, or may give wildly inaccurate altitudes when all available satellites are near the horizon.*"

So in spite of their limitations, aneroid altimeters would seem to be the better choice in most circumstances, and is certainly the more economical one.