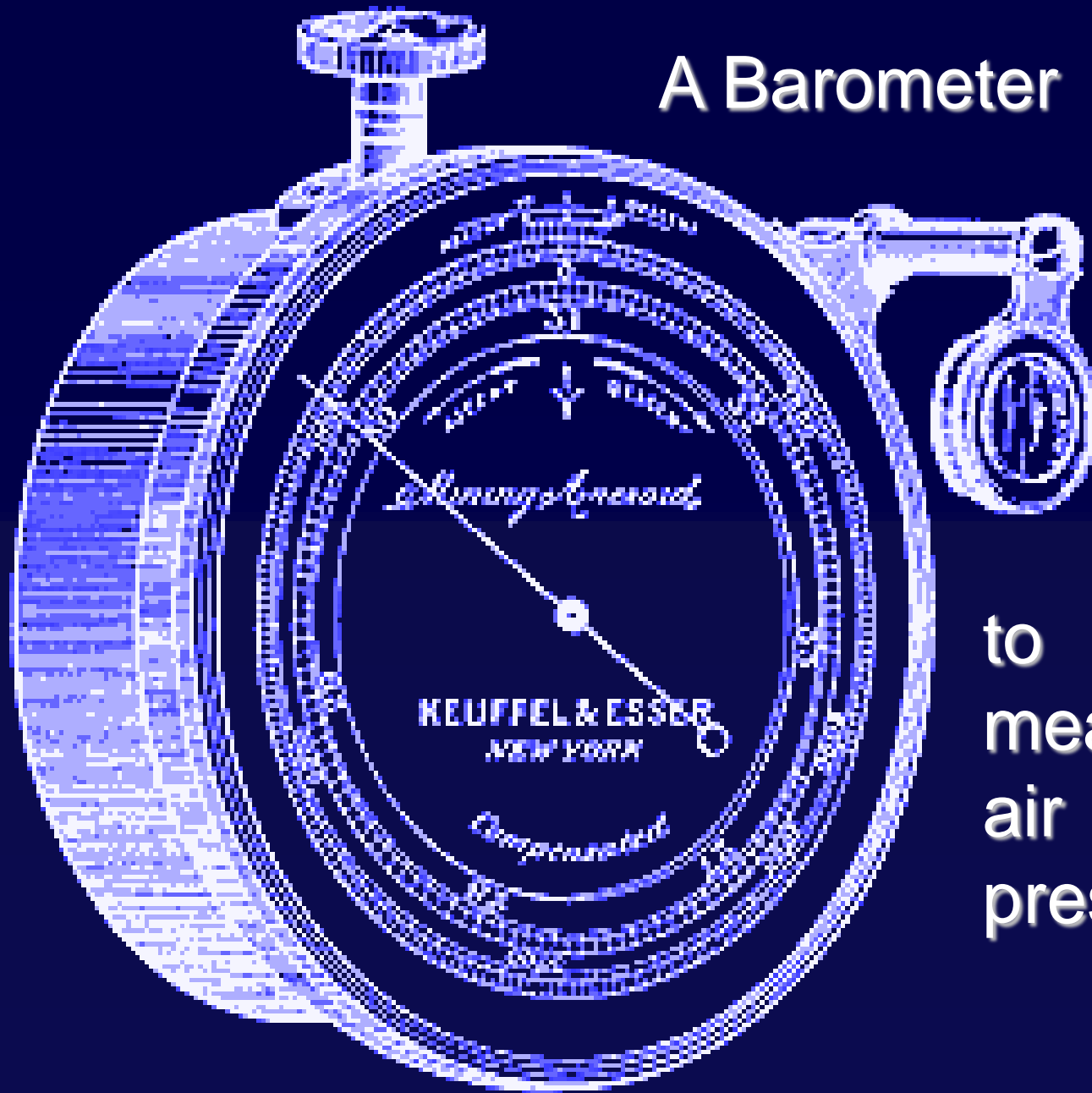


Barometer

A Barometer



is
used

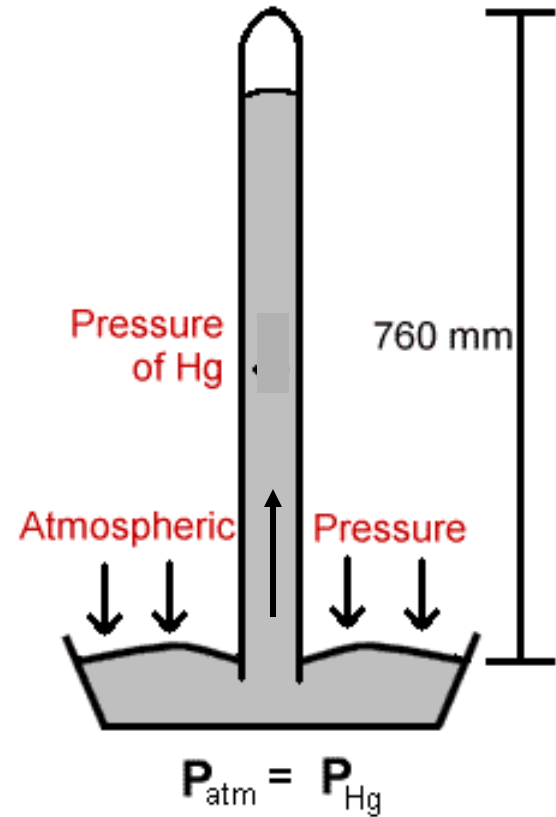
to
measure
air
pressure.



In 1643, Evangelista Torricelli
invented the barometer

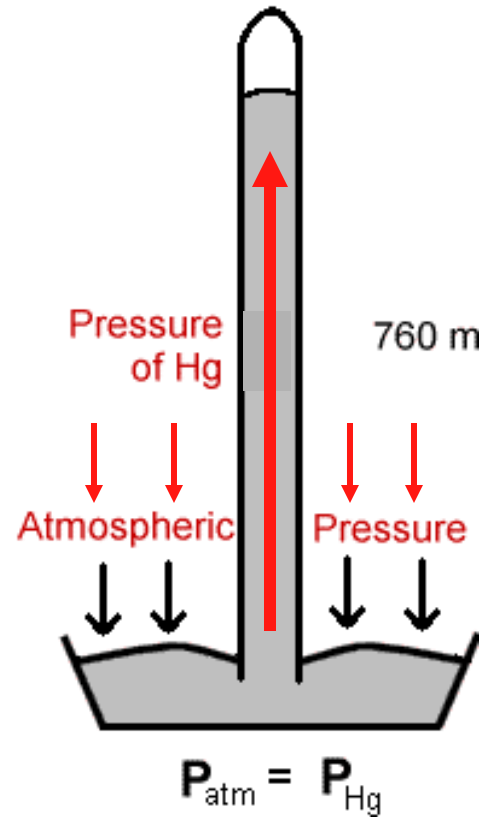
Torricelli's barometer used a glass column suspended in a bowl of mercury. The pressure of the air molecules pushed the mercury up into the glass tube.

The weight of the mercury in the tube was equal to the weight of the air pressing down on the mercury in the dish.



As
atmospheric
pressure
increases...

The mercury in
the tube rises.



The Mercury Barometer

Good:

- Simple to construct
- Highly accurate

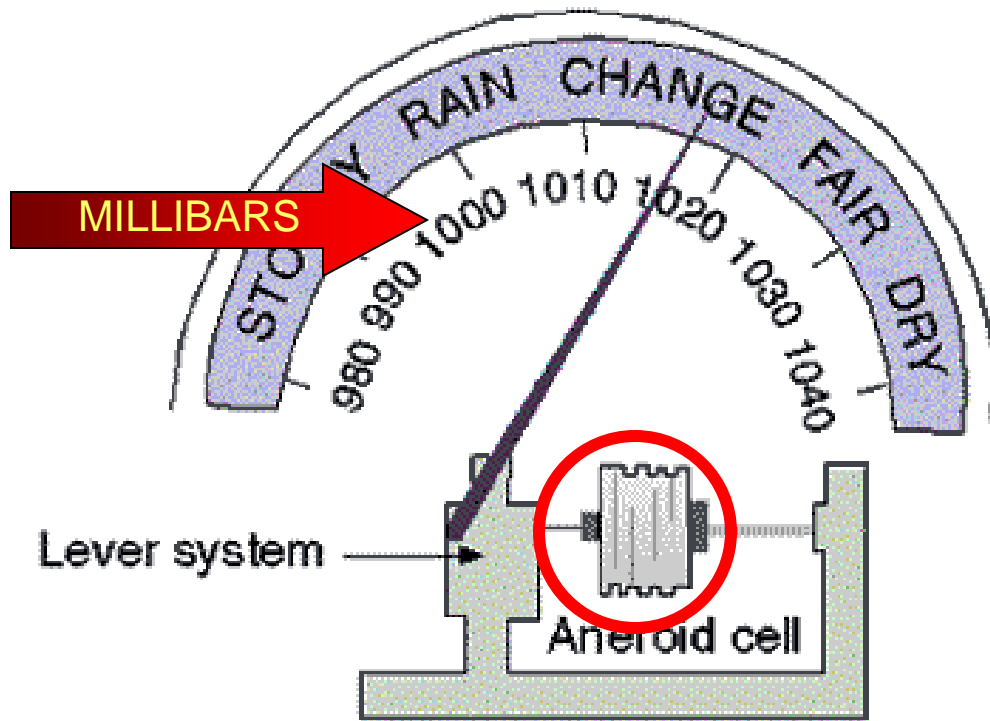
Bad:

- Glass tube is fragile
- Mercury is *very toxic!*

The *Aneroid* Barometer



- No fragile tubes!
- No toxic chemicals!
- No batteries!
- Never needs winding!



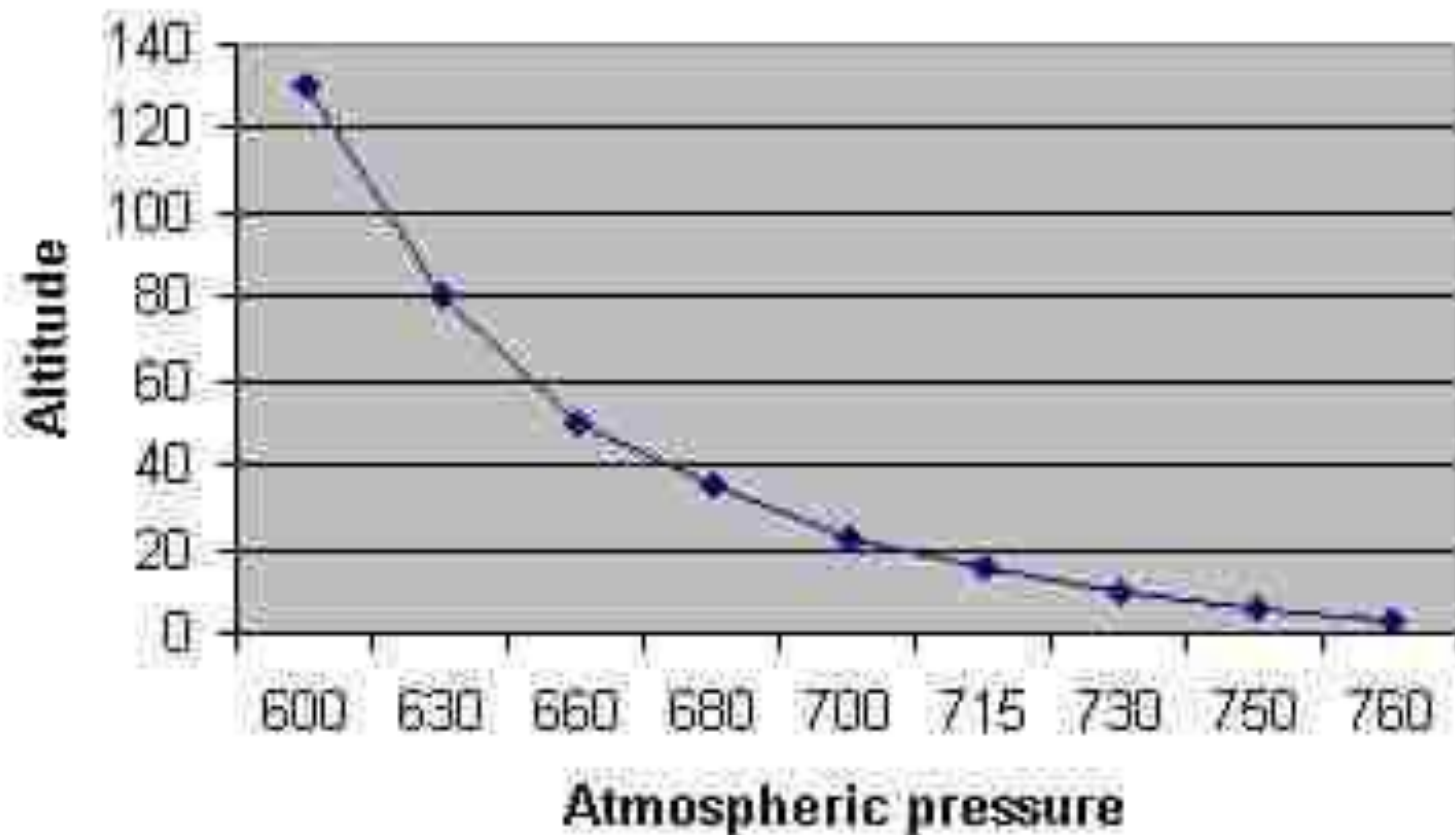
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An aneroid barometer uses a cell which has had most of the air removed.

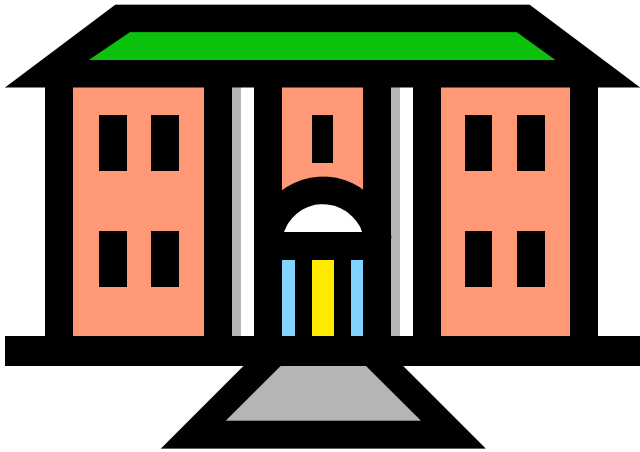
As the air pressure around the cell increases, it presses on the cell, which causes the needle to move.

Television weather forecasters usually give barometric pressure in inches of mercury. However, meteorologists measure atmospheric pressure in *millibars*.

Atmospheric pressure decreases with increasing altitude



Two types of barometric pressure measurements:



Sea level pressure is referenced to sea level, so it has the same altitude anywhere in the world.

Station pressure is the actual pressure at the recording location. It is affected by the local altitude.

Station pressure on a mountain top will be lower than station pressure in a valley. Scientists need a fixed point of reference in order to compare barometer readings in different locations. That is why barometer readings are sometimes adjusted for elevation above sea level at the station location.



Most aneroid barometers have a needle which can be set to remember the previous reading.