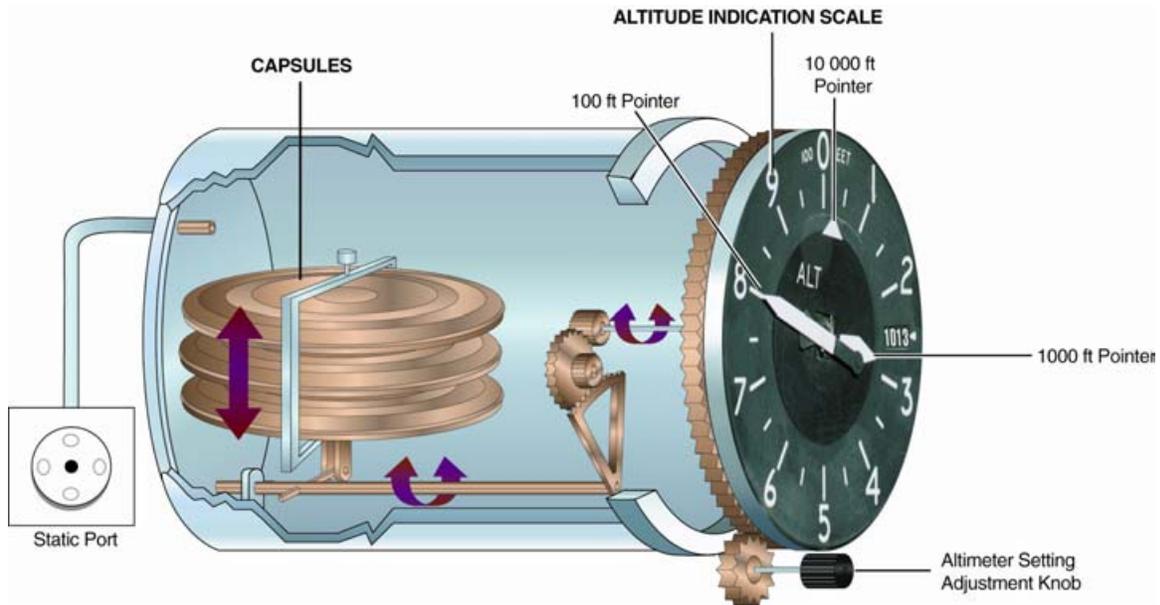


THE SENSITIVE ALTIMETER

The sensitive altimeter is essentially the same as the simple altimeter but employs a minimum of two aneroid capsules. This provides for a more accurate measurement of pressure and provides more power to drive the mechanical linkage.



The capsules are stacked together with one face fastened down, which permits movement due to pressure changes at the other end. The movement of the capsules in response to changes in altitude (pressure) is transmitted via a suitable mechanical linkage to three pointers that display (against a graduated instrument scale) the aeroplane altitude in tens, hundreds, and thousands of feet. The whole assembly is encased in a container, which is fed with static pressure, but is otherwise completely airtight. Within the mechanical linkage, a bi-metallic insert is fitted to compensate for temperature changes that could affect the movement. As the aeroplane climbs and air pressure falls, the capsules expand. Similarly, as the aeroplane descends, the static pressure increases and the capsules contract. Since it is necessary to allow for different values of mean sea level pressure and to allow use of the altimeter in indicating altitude above the aerodrome, the altimeter is similarly provided with a means of adjusting the level at which it indicates zero feet. This is done via a barometric subscale mechanism, which adjusts the mechanical linkage and operates a set of digital counters, or calibrated dial. This is displayed in a window in the face of the altimeter, and is the datum pressure setting above which the instrument is now displaying altitude. The desired setting is again made using the knurled knob at the bottom of the instrument.

ALTIMETER DISPLAYS

A number of different types of pressure altimeters are manufactured, though they differ in detail depending on the altitude band covered, the accuracy of the instrument, and the method by which the altitude is displayed. Types of display vary from multi-needle to needle plus digital counters, with accuracy varying from 100 ft at 0 ft to 1000 ft at 35 000 ft in early models, to 35 ft at 0 ft to 600 ft at 60 000 ft in later models.