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CHAPTER 5 – ALTIMETER SETTING

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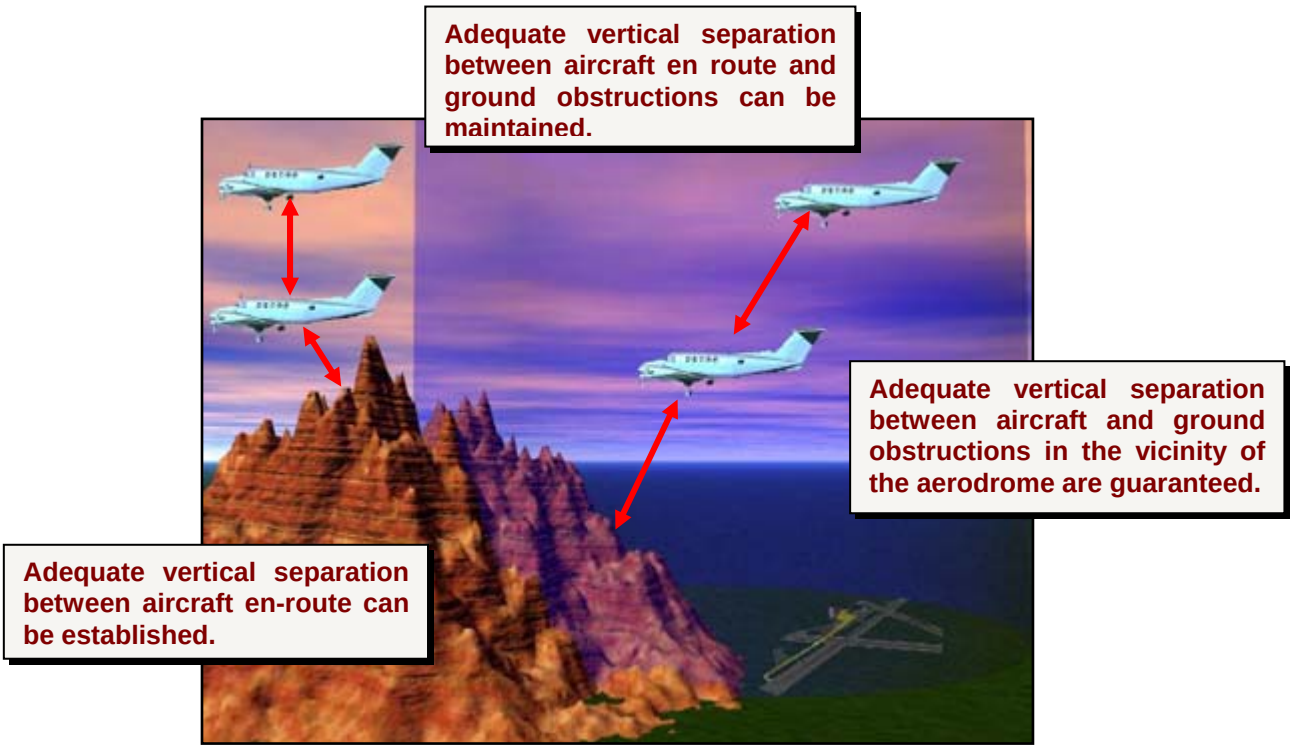
ALTIMETER SETTING PROCEDURES

5.1 Introduction

Altimeter settings are procedural tools used by the aviation industry for the management of air traffic. During the course of a flight, an aircraft may travel through areas of high pressure, or low pressure and because the altimeter is a pressure-based instrument, the vertical indications it provides may differ.

These varying vertical readouts are the reason that laid down procedures have been put into place, to ensure that:



5.2 Terms used in Altimeter Setting Procedures

Different altimeter settings provide different vertical readouts, and for this reason it is important to understand what these readouts are, and what they are called.

5.2.1 QFE

QFE is the actual pressure recorded at the aerodrome. When QFE is set in the subscale, the altimeter will read the vertical distance above the aerodrome.

If QFE is set before taxiing the altimeter will read zero. i.e. height above the aerodrome being zero.

When QFE is set in the altimeter, the vertical distance is referred to as 'Height'.

5.2.2 QNH

QNH is the pressure at Mean Sea Level (MSL), this is the pressure we set in the altimeter subscale whenever we fly at or below 10,000 feet in Australia. When QNH is set the altimeter will read **altitude** above Mean Sea Level (MSL).

5.2.3 Local QNH

When flying in the vicinity of an aerodrome, pilots set the local aerodrome QNH.

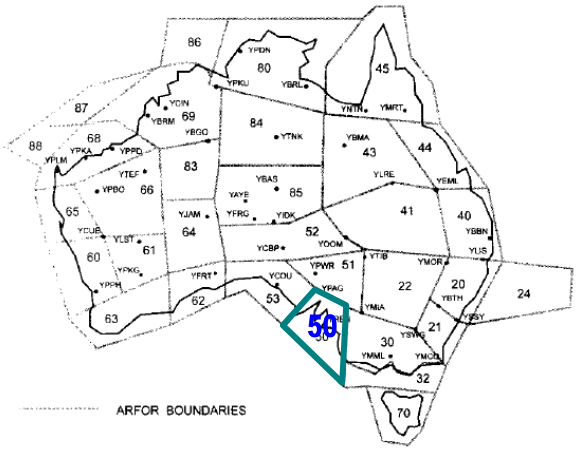
The aerodrome (local) QNH may be obtained from the ATIS or from ATC.

When the local QNH is set, the altimeter shows the approximate elevation of the aerodrome above mean sea level. The reading will not be exact unless ISA conditions are present at the time.

If taking off from a non-towered aerodrome where no ATIS is available, the altimeter can be adjusted to read the aerodrome elevation. The subscale will then indicate the approximate local QNH, as shown in the picture below.

5.2.4 Area QNH

When flying away from the aerodrome, i.e. on a navigation or a cross-country flight, pilots set the QNH of the area over which they are flying. This is referred to as Area QNH.

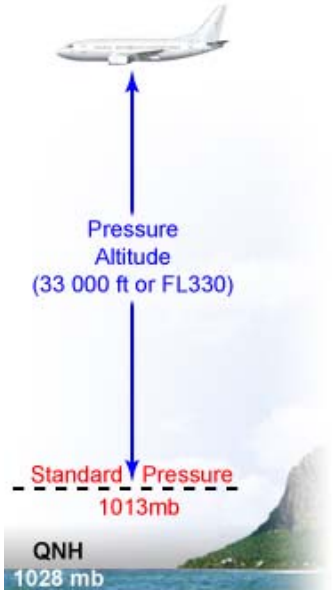


Australia is divided into areas, each with its own Area forecast. Parafield is in area 50.

When Area QNH is set, the altimeter indicates the height of the aircraft AMSL.

This is referred to as **altitude**.

5.2.5 QNE – Standard Pressure



This airliner is cruising at 33,000 feet or Flight Level 330.

When the altimeter is set to QNE, which is always 1013.25hPa, the altimeter provides a readout (pressure altitude), which is not related to pressure.

QNE is a standard setting, which cannot be related to either pressure or a vertical distance above a reference point.

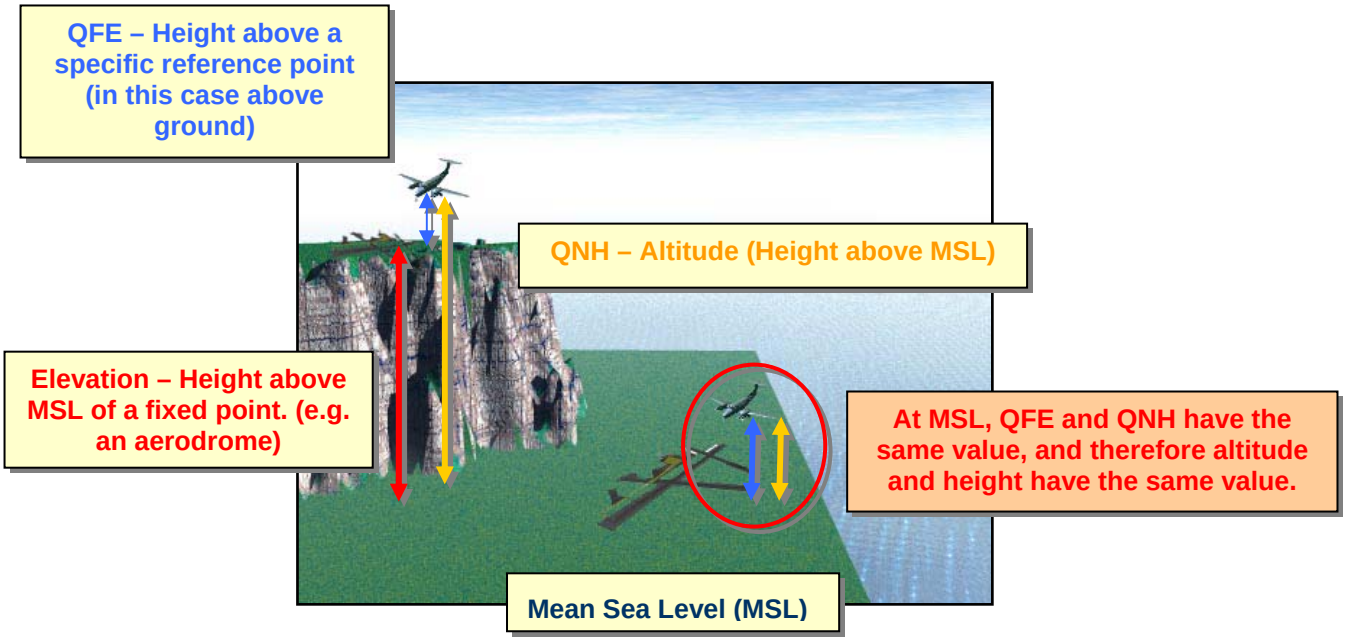
In Australia, standard pressure of 1013.2 hPa is set in the subscale when cruising above 10,000 feet.

When standard pressure is set we refer to our vertical distance as 'Flight Level' (FL).

5.2.6 Level

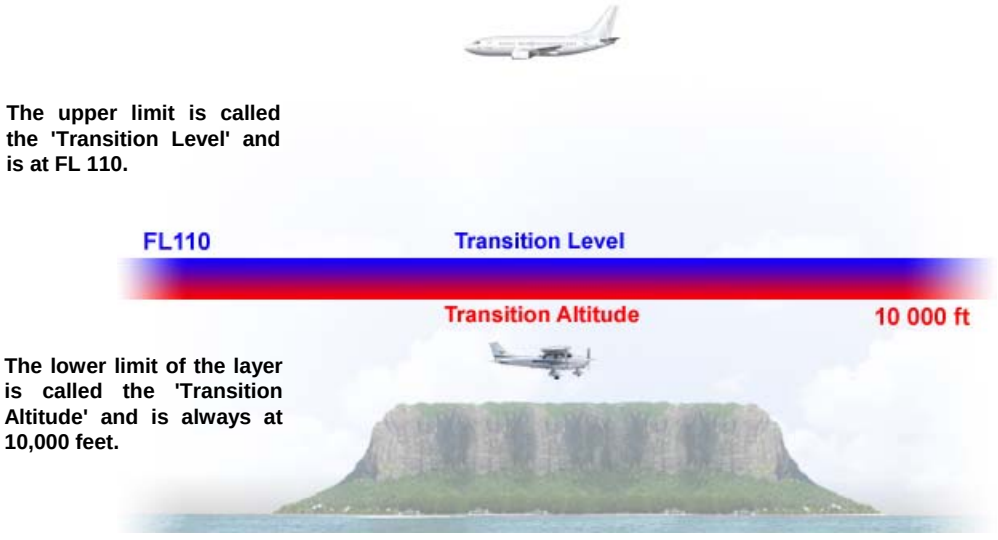
A generic term relating to the vertical position of an aircraft in flight and meaning variously Height, Altitude or Flight level (normally associated with a subscale setting of 1013.25 hpa).

5.2.7 Elevation, Altitude and Height



5.2.8 Transition Layer

To separate aircraft flying on QNH (up to 10,000 feet) and aircraft flying on standard pressure of 1013.2 hPa (above 10,000 feet) pilots make use of a transition layer.



The space between the transition altitude and transition level is called the 'Transition Layer'. Aircraft are not permitted to cruise in the transition layer

5.3 Application of the altimeter settings

The altimeter settings apply to aircraft both in controlled and uncontrolled airspace.