

TA vs. TL

Sometimes there is confusion around controllers around two well known terms.

- Transition Altitude
- Transition Level.

Despite what some people think, these two are not two names for the same thing, however they are both relevant to you.

You probably have an idea about what it is though. It is that altitude where you change your altimeter from showing QNH to show a FL at standard 1013. This is also correct. However how the two are measured is different.

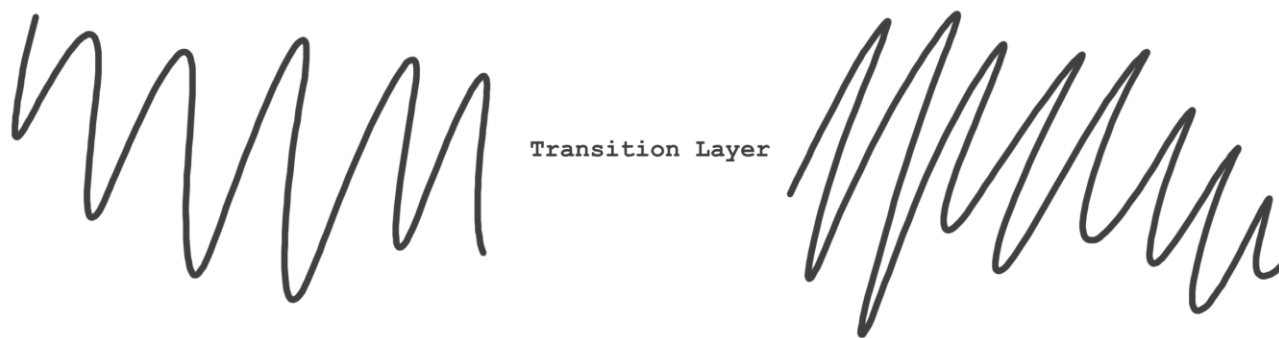
- Transition ALTITUDE
 - This is a FIXED altitude. It is 5000' in Copenhagen area, and 3000' in the rest of Denmark.
 - It is defined as the **"Highest usable altitude on QNH"**. Above this altitude A FL should be cleared. That's for example why initial climb in Copenhagen is "FL70" on 04/22, but 4000' on runway 12/30. Because the transition altitude is 5000'
- Transition LEVEL
 - This is a VARIABLE altitude. It depends on the QNH for the given day, and is automatically calculated by the ATIS.
 - It is defined as **"Lowest usable Flight level"** Below this level, altitudes with reference to QNH should be given.

The reason it is like this is because you must understand that these two may not overlap. In this hypothetical scenario we say Transition Level is FL60, so all clearance below FL60 must be in altitude. However! Today is a day of very low pressure, more precisely 973Hpa

Now he will descend down to ALTITUDE 5000' he descends and selects QNH on his altimeter. Look what happens. He is actually already below 5000' because the difference in QNH and Standard was so big.

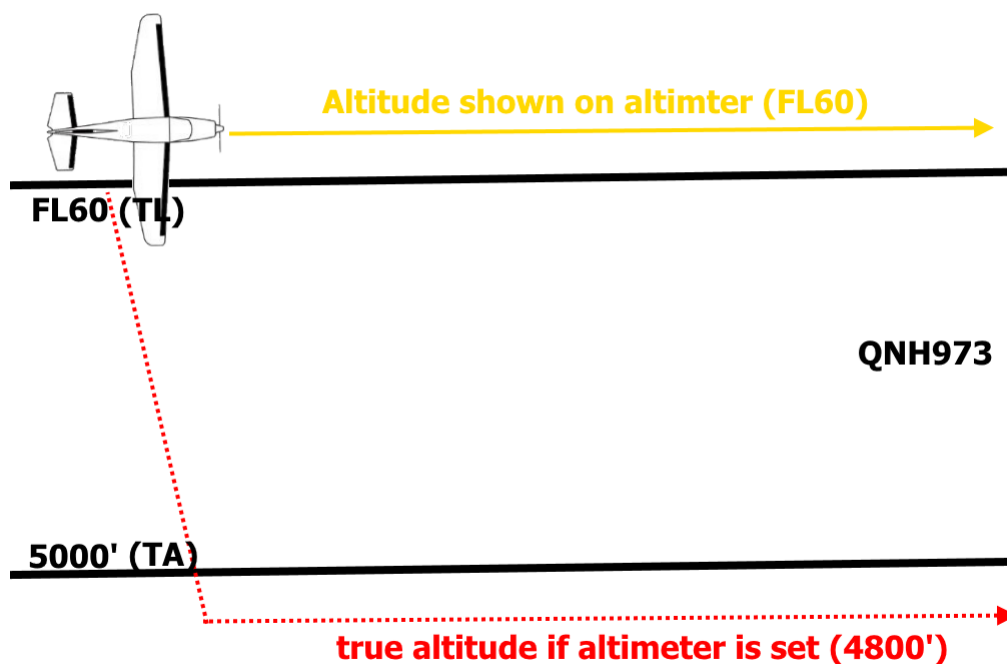
Because of this there is the term transition layer. This is the layer which creates margin so when you reset the altimeter to QNH from standard it does not deviate more than the difference between TL and TA

Transition Level (variable)

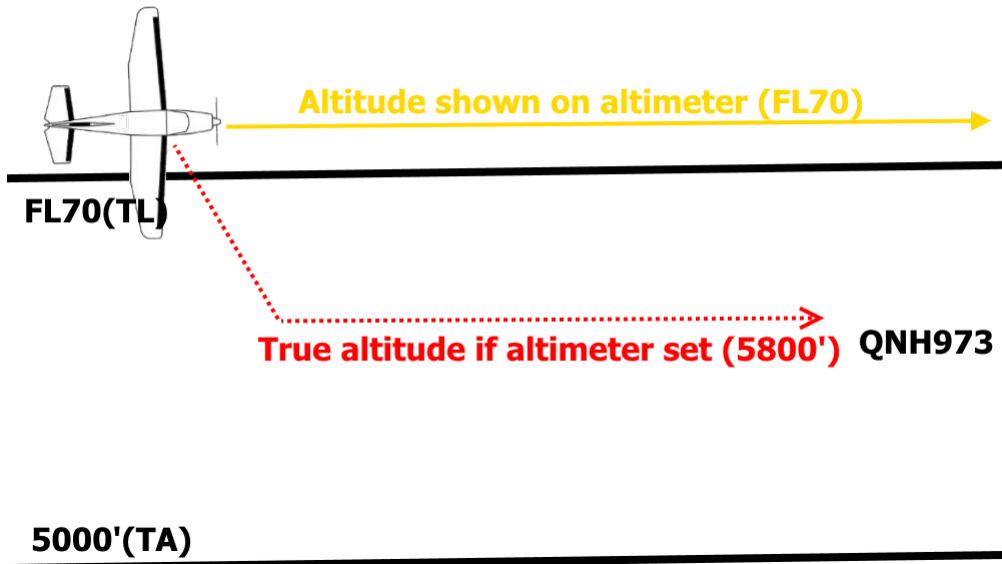


Transition Altitude (5000')

Lets look visually at the example where the QNH is 973, and Transition level FL60. Here you can see the aircrafts indicated altitude shown on his PFD vs. its real altitude where he is actually flying



This is not an option to have a scenario where the pilots true altitude is outside the transition layer. In a case such as this the ATIS will automatically **raise the Transition Level**, and by doing that increase the transition layer, so the true altitude of the aircraft will not go lower than the Transition altitude.



So in conclusion:

- **Transition altitude** is a fixed altitude, used for departing planes to know the lowest altitude they should fly on QNH reference
- **Transition Level** is a variable level, used for arriving planes to know the lowest level they can fly while having standard set.
- **Transition Layer** is the space between Transition Altitude and Transition level, where tow planes can be on both QNH and Standard depending on situation
- **ATIS** will automatically raise or lower Transition level, to allow enough separation of traffic.
- **The table of QNH vs. TL** can be found in the table here below.

Table for determining transition level^[citation needed]

QNH (in millibars)	Transition altitude (in feet)				
	3,000	4,000	5,000	6,000	18,000
1032–1050	FL25	FL35	FL45	FL55	FL175
1014–1031	FL30	FL40	FL50	FL60	FL180
996–1013	FL35	FL45	FL55	FL65	FL185
978–995	FL40	FL50	FL60	FL70	FL190
960–977	FL45	FL55	FL65	FL75	FL195
943–959	FL50	FL60	FL70	FL80	FL200