

ENR 1.7 ALTIMETER SETTING PROCEDURES**1.7.1 Introduction**

The altimeter setting procedures in use conform to those contained in ICAO PANS-OPS Doc. 8168 - Volume III and are given in full below.

Transition altitudes are given in Sub-section 1.7.2 below and [AD-2.17](#) for each aerodrome. In addition, transition altitudes are given on instrument approach charts.

QNH reports and temperature information for use in determining adequate terrain clearance is provided in MET broadcasts and is available on request from air traffic service units. QNH values are given in whole hectopascals.

1.7.2 Basic altimeter setting procedures**1. General**

1.1A transition altitude is specified for each aerodrome.

1.2 Vertical positioning of aircraft when at or below the transition altitude is expressed in terms of altitudes where as such positioning at or above the transition level is expressed in terms of flight levels. While passing through the transition layer, vertical positioning is expressed in terms of altitude when descending, and in terms of flight level when ascending.

1.3 Flight level zero is located at the atmospheric pressure level of 1013.2 HPA (29.92 inHg). Consecutive flight levels are separated by a pressure interval corresponding to 500 feet (152.4 metres) in the Standard Atmosphere.

1.4 Lisboa FIR - Table of transition altitudes and levels

Location	Transition Altitude (FT)	QNH							
		<942.2	942.2 to 959.4	959.5 to 977.1	977.2 to 995.0	995.1 to 1013.2	1013.3 to 1031.6	1031.7 to 1050.3	>1050.3
		Transition Level							
Cascais AD Faro AD Lisboa AD Porto AD Beja AD Évora AD	4000	75	70	65	60	55	50	45	40
Madeira AD Porto Santo AD	5000	85	80	75	70	65	60	55	50
Vila Real AD Bragança AD	8000	115	110	105	100	95	90	85	80

1.5 Santa Maria FIR - Table of transition altitudes and levels

Location	Transition Altitude (FT)	QNH							
		<942.2	942.2 to 959.4	959.5 to 977.1	977.2 to 995.0	995.1 to 1013.2	1013.3 to 1031.6	1031.7 to 1050.3	>1050.3
		Transition Level							
Santa Maria AD	4000	75	70	65	60	55	50	45	40

Location	Transition Altitude (FT)	QNH							
		<942.2	942.2 to 959.4	959.5 to 977.1	977.2 to 995.0	995.1 to 1013.2	1013.3 to 1031.6	1031.7 to 1050.3	>1050.3
		Transition Level							
Flores AD Horta AD Lajes AD Pico AD Graciosa AD S. Jorge AD Corvo AD	5000	85	80	75	70	65	60	55	50
Ponta Delgada AD	6000	95	90	85	80	75	70	65	60

2. Take-off and climb

QNH altimeter setting is made available to aircraft prior to take-off.

QFE altimeter setting shall be passed to aircraft on request.

Vertical positioning of aircraft during climb is expressed in terms of altitudes until reaching the transition altitude above which vertical positioning is expressed in terms of flight levels.

3. Vertical separation en-route

Vertical separation during en-route flight shall be expressed in terms of flight levels at all times.

4. Approach and landing

A QNH altimeter setting is made available in approach clearances and in clearances to enter the traffic circuit.

A QFE altimeter setting shall be passed to aircraft on request.

The transition level is made available in approach clearances.

Vertical positioning of aircraft during approach is controlled by reference to flight levels until reaching the transition level below which vertical positioning is controlled by reference altitudes.

5. Missed approach

The relevant portions of paragraphs 1.2, 2 and 4 and shall be applied to the case of a missed approach.

1.7.3 Altimeter setting region(s)

NIL

1.7.4 Procedures applicable to operators (including pilots)

Flight planning

The levels at which a flight is to be conducted shall be specified in a Flight Plan:

- a. in terms of flight level if the flight is to be conducted at or above the transition level, and
- b. in terms of altitudes if the flight is to be conducted in the vicinity of an aerodrome and at or below the transition altitude.

1.7.5 Table of cruising levels

NOTE: Examples of the relationship between flight levels and altimeter indications are given in the following table, the metric equivalents being approximate:

MAGNETIC TRACK											
From 090 degrees to 269 degrees (ODD's)						From 270 degrees TO 089 degrees (EVEN's)					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
FL	ALTITUDE		FL	ALTITUDE		FL	ALTITUDE		FL	ALTITUDE	
	Metres	Feet		Metres	Feet		Metres	Feet		Metres	Feet
10	300	1000	-	-	-	20	600	2000	-	-	-
30	900	3000	35	1050	3500	40	1200	4000	45	1350	4500
50	1500	5000	55	1700	5500	60	1850	6000	65	2000	6500
70	2150	7000	75	2300	7500	80	2450	8000	85	2600	8500
90	2750	9000	95	2900	9500	100	3050	10000	105	3200	10500
110	3350	11000	115	3500	11500	120	3650	12000	125	3800	12500
130	3950	13000	135	4100	13500	140	4250	14000	145	4400	14500
150	4550	15000	155	4700	15500	160	4900	16000	165	5050	16500
170	5200	17000	175	5350	17500	180	5500	18000	185	5650	18500
190	5800	19000	195	5950	19500	200	6100	20000			
210	6400	21000				220	6700	22000			
230	7000	23000				240	7300	24000			
250	7600	25000				260	7900	26000			
270	8250	27000				280	8550	28000			
290	8850	29000				300	9150	30000			
310	9450	31000				320	9750	32000			
330	10050	33000				340	10350	34000			
350	10650	35000				360	10950	36000			
370	11300	37000				380	11600	38000			
390	11900	39000				400	12200	40000			
410	12500	41000				430	13100	43000			
450	13700	45000				470	14350	47000			
490	14950	49000				510	15550	51000			
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