

ENR 1.7 ALTIMETER SETTING PROCEDURES**1. INTRODUCTION**

The Altimeter Setting Procedures in use conform to those contained in ICAO DOC 8168-OPS/611 and are given in full below. TRANSITION ALTITUDES for all aerodromes at which Air Traffic Control Service is provided are detailed in Paragraph 3. In addition Transition Altitudes are given on Instrument Approach Charts.

Differences

DOC 8168 OPS/611 VOL 1 PART VI 2.5.4

2. BASIC ALTIMETER SETTING PROCEDURES**2.1 General**

The pressure type altimeter, calibrated in accordance with the Standard Atmosphere.

- a. when set to a QNH altimeter setting will indicate ALTITUDE;
- b. when set to a QFE altimeter setting will indicate HEIGHT above QFE reference datum;
- c. when set to a PRESSURE of 1013.2 hPA may be used to indicate FLIGHT LEVELS.

Altimeter settings provided to aircraft for approach, landing and take-off i.e. QNH, Aerodrome QFE and Runway Threshold QFE will be rounded down to the nearest whole hectopascal.

The reference datum for QFE is the aerodrome elevation except in the case specified here under.

The QFE supplied to aircraft for approach, landing and take-off in respect of instrument Runways (including Precision Approach Runways), where the landing threshold is seven feet or more below the aerodrome elevation, shall be the "RUNWAY THRESHOLD QFE". The reference datum in this case will be the threshold elevation of the particular Runway.

2.1.1 Regional QNH**QNH Area 1**

This area is the area south of a line 5339N01100W 5339N00720W excluding Dublin CTA and regional Airports within the area. The QNH to be used in this area will be the Shannon aerodrome QNH

This will be transmitted to aircraft as the Shannon QNH H24

NOTE: This is also the QNH that will be issued for operations over sea areas

QNH area 2

Between the hours of 0700-1900 UTC winter period and from 0600-1800 UTC summer period aircraft operating in the Shannon FIR Land areas north of a line 5339N01100W 5339N00720W excluding Dublin CTA and Regional Airports within the area shall be issued with the Ireland West Airport QNH which shall be called the Northern QNH. Outside of these hours, the Shannon QNH shall be used.

2.1.2 TRANSITION ALTITUDE

A transition altitude is specified for each aerodrome at which Air Traffic Control Service is provided.

Transition Altitudes at Aerodromes within the Shannon Flight Information Region are as follows: -

CONNAUGHT Airport	5000ft	KERRY Airport	5000ft
CORK Airport	5000ft	SHANNON Airport	5000ft
DONEGAL Airport	5000ft	SLIGO Airport	5000ft
DUBLIN Airport	5000ft	WATERFORD Airport	5000ft
GALWAY Airport	5000ft		

2.1.3 Vertical displacement of aircraft when AT or BELOW the Transition Altitude is expressed in terms of ALTITUDE whereas such displacement AT or ABOVE the Transition Level is expressed in terms of FLIGHT LEVELS. While passing through the Transition Layer, vertical displacement is expressed in terms of ALTITUDE (QNH) when DESCENDING and in terms of FLIGHT LEVELS (1013.2 HPA) when ASCENDING.

2.1.4 Flight level zero is located at the atmospheric pressure level of 1013.2 HPA Consecutive flight levels are separated by a pressure interval corresponding to at least 500 feet in the Standard Atmosphere.

Examples of the relationship between flight levels and altimeter indications are given in the following table:

FLIGHT LEVEL		ALTIMETER INDICATION
Number	Description on RTF	Feet
0	ZERO	0
5	ZERO FIFE	500
10	WUN ZERO	1,000
15	WUN FIFE	1,500
20	TOO ZERO	2,000
50	FIFE ZERO	5,000
100	WUN ZERO ZERO	10,000
150	WUN FIFE ZERO	15,000
200	TOO ZERO ZERO	20,000

2.2 Take-off and Climb

- 2.2.1 A QNH altimeter setting is made available to aircraft in the routine Take-Off and Departure instructions.
- 2.2.2 A QFE altimeter setting, based on the relevant datum, is available on request (see Para 2.1)
- 2.2.3 Prior to take-off one altimeter should be set to the latest QNH altimeter setting for the aerodrome.
- 2.2.4 The vertical position of the aircraft during climb is expressed in terms of Altitudes (QNH) until reaching the Transition Altitude.
- 2.2.5 On climbing through the Transition Altitude the reference for the vertical position of the aircraft should be changed from Altitude (QNH) to flight Levels (1013.2hPA) and there after vertical position should be expressed in terms of Flight Levels.
- 2.2.6 Cruising Levels
IFR flights operated in controlled airspace must be flown at flight levels in accordance with the IFR section of the table of cruising levels detailed on Table TRACK (MAGNETIC) here below.

2.3 Vertical Separation – En Route

- 2.3.1 Vertical separation for en route IFR flights, at or above Transition levels, is expressed in terms of Flight Levels. Vertical Separation Minima are
- 2.3.2 Between aircraft flying subsonic –
 - i. Up to FL290-1000ft
 - ii. Above FL290–2000ft
- 2.3.3 Between aircraft flying supersonic and aircraft flying subsonic–
 - i. Up to FL450 – 2000ft
 - ii. Above FL450 – 4000ft

2.4 Approach and Landing

- 2.4.1 A QNH altimeter setting and the Transition level are made available in the routine approach and landing instructions. Aircraft using the QNH altimeter setting will on request be provided with the appropriate Runway Threshold elevation.
- 2.4.2 A QFE altimeter setting, based on the relevant datum is available on request (See Para 2.1)
- 2.4.3 Vertical displacement of aircraft during approach is controlled by reference to Flight Levels (1013.2 HPA) until reaching the Transition Level below which vertical displacement is controlled by reference to Altitudes (QNH).
This does not preclude a pilot using a QFE setting for terrain clearance purposes during the final approach to the runway but references to the vertical position of the aircraft in messages to or from the ground will be expressed in altitudes.

2.5 Missed Approach

The Altimeter settings used while completing a Missed Approach Procedure will be dependent upon whether or not the procedure can be carried out below the Transition Altitude. In any event the Altimeter settings used should be consistent with the relevant portions of Para 2 and 3.

3. PROCEDURES OUTSIDE CONTROLLED AIRSPACE**3.1 Cruising Levels**

IFR flights operated OUTSIDE Controlled Airspace should be flown at Flight Levels in accordance with the IFR section of the Table of Cruising Levels.

3.2 Terrain Clearance

It is the responsibility of the pilot to ensure that the Flight Level or Flight Levels selected provide adequate terrain clearance at all points along the routes to be flown. The latest and most appropriate QNH altimeter setting report should be used for assessing terrain clearance.

3.3 Procedures for VFR flights

3.3.1 VFR flights operated in Controlled Airspace should be flown at Flight Levels in accordance with the VFR section of the Table of Cruising levels, unless otherwise required by the appropriate air traffic control unit.

3.3.2 VFR Flights operated OUTSIDE Controlled Airspace in level cruising flight ABOVE 3,000feet from ground or water should be flown at Flight Levels in accordance with the VFR Section of the Table of Cruising Levels.

Compliance with the procedures in Para's 3.3.1 and 3.3.2 must not be interpreted as allowing any deviation from the Visual Flight Rules.

3.4 Flight Planning

3.4.1 The levels at which a flight is conducted are to be specified in the flight plan;

- a. in terms of Flight Level in the flight is to be conducted at or above the Transition Level, and
- b. in terms of altitude if the flight is to be conducted at or below the transition altitude.

3.4.2 The flight level or levels selected for a flight:-

- a. should ensure adequate terrain clearance at all points along the route to be flown
- b. should satisfy air traffic control requirements, and
- c. should be compatible with the table of Cruising levels.

The information required to determine the lowest flight level which will ensure adequate terrain clearance may be obtained from the appropriate services unit (e.g. Aeronautical Information, Air Traffic or Meteorological).

TRACK (MAGNETIC)											
From 000 to 179						From 180 to 359					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Altitude			Altitude			Altitude			Altitude		
FL	Metres	Feet	FL	Metres	Feet	FL	Metres	Feet	FL	Metres	Feet
-90			----	----	----	0			----	----	----
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	3900	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	205	6250	20500
210	6400	21000	215	6550	21500	220	6700	22000	225	6850	22500
230	7000	23000	235	7150	23500	240	7300	24000	245	7450	24500
250	7600	25000	255	7750	25500	260	7900	26000	265	8100	26500
270	8250	27000	275	8400	27500	280	8550	28000	285	8700	28500
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

TRACK (MAGNETIC)											
From 000 to 179						From 180 to 359					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Altitude			Altitude			Altitude			Altitude		
FL	Metres	Feet	FL	Metres	Feet	FL	Metres	Feet	FL	Metres	Feet
410	12500	41000	420	12800	42000	430	13100	43000	440	13400	44000
450	13700	45000	460	14000	46000	470	14350	47000	480	14650	48000
490	14950	49000	500	15250	50000	510	15550	51000	520	15850	52000
Etc.	Etc	Etc.	Etc	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.