ENR 1.7 ALTIMETER SETTING PROCEDURES

1. Introduction

1.1 The following altimeter setting procedures describe the method for providing adequate vertical separation between aircraft and adequate terrain clearance during all phases of flight.

1.2 QNH and QFE values are given in whole hectopascal or inch of mercury, but they will be provided in tenths on request for landing.

2. Basic altimeter setting procedures

2.1 General

2.1.1 The transition altitude for Bangkok FIR is 11000 ft.

2.1.2 The transition level for Bangkok FIR is flight level 130 (FL130).

2.1.3 The transition layer is located between the transition altitude and the transition level.

2.1.4 The vertical position of aircraft operating at or below the transition altitude shall be expressed in terms of altitudes, which are determined from an altimeter set to sea level pressure (QNH).

Note: *This does not preclude a pilot using a QFE setting for terrain clearance purposes during the final approach to the runway.*

2.1.5 The vertical position at or above the transition level shall be expressed in terms of flight levels, which are surfaces of constant atmospheric pressure based on an altimeter setting of 1013.2 hPa or 29.92 inHg

2.1.6 While passing through the transition layer, vertical position shall be expressed in terms of:

2.1.6.1 flight levels when climbing; and

2.1.6.2 altitudes when descending.

2.1.7 Cruising within the transition layer is not permitted unless specifically cleared by the ATS unit providing control services for that portion of airspace.

2.1.8 While operating in the transition layer, vertical position shall be expressed in terms of flight levels or altitudes as advised by ATC.

2.1.9 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 ft (152.4 m) in the International Standard Atmosphere.

2.1.10 For all flights operating at or below the transition altitude, altimeter shall be set to the appropriate QNH derived from an available source.

2.2 QNH for aircraft operating at or below the transition altitude

2.2.1 Pilot who operating an aircraft at or below the transition altitude shall set an altimeter to the currently reported QNH of the nearest station along the route of flight, except as provide in **2.2.2** and **2.2.3**.

2.2.2 Pilot who operating an aircraft operating in a terminal control area or a terminal control zone shall set an altimeter to the currently reported QNH of the major aerodrome of that airspace, which will be given by ATC.

2.2.3 When there is no appropriate available station, pilot shall set an altimeter to the elevation of the departure aerodrome until the appropriate QNH can be obtained.

Note: *Pressure-altitude-derived level information displayed to the controller and level received from a pilot by radiotelephony might be vary due to different pressure setting.ATC shall comply with criteria as stated in ICAO doc 4444 paragraph 8.5.5 Level information based on the use of pressure-altitude information.*

2.3 Take-off and climb

2.3.1 Altimeter setting is made available to aircraft in the routine takeoff and climb instructions.

2.3.2 Vertical displacement of aircraft during climb is controlled by reference to altitude until passing the transition altitude above which vertical displacement is controlled by reference to flight level.

Note: *The word "controlled" is used in a composite sense in that a pilot will wish to fly his aircraft on predetermined flight levels or altitudes and ATS will wish to advise a pilot the availability of flight levels or altitudes: both are concerned with vertical position of aircraft.*

2.4 Vertical Separation - en-route

2.4.1 Aircraft en-route in the Bangkok FIR (irrespective of whether IFR or VFR) shall be flown at flight levels or altitudes where appropriate.

2.4.2 When complying with the table of cruising levels in Civil Aviation Board (CAB) Regulation on Rules of the air, or for VFR flight above 900 metres (3 000 feet), aircraft shall be flown at levels corresponding to the tracks shown in the following table:

TRACK											
From 000 degrees to 179 degrees						From 180 degrees to 359 degrees					
IFR Flights			VFR Flights			IFR Flights			VFR Flights		
Level			Level			Level			Level		
FL	Feet	Meters	FL	Feet	Meters	FL	Feet	Meters	FL	Feet	Meters
	1000	300	-	-	-		2000	600	-	-	-
	3000	900		3500	1050		4000	1200		4500	1350
	5000	1500		5500	1700		6000	1850		6500	2000
	7000	2150		7500	2300		8000	2450		8500	2600
	9000	2750		9500	2900		10000	3050		10500	3200
110	11000	3350	115	11500	3500	120	12000	3650	125	12500	3800
130	13000	3950	135	13500	4100	140	14000	4250	145	14500	4400
150	15000	4550	155	15500	4700	160	16000	4900	165	16500	5050
170	17000	5200	175	17500	5350	180	18000	5500	185	18500	5650
190	19000	5800	195	19500	5950	200	20000	6100	205	20500	6250
210	21000	6400	215	21500	6550	220	22000	6700	225	22500	6850
230	23000	7000	235	23500	7150	240	24000	7300	245	24500	7450
250	25000	7600	255	25500	7750	260	26000	7900	265	26500	8100
270	27000	8250	275	27500	8400	280	28000	8550	285	28500	8700
290	29000	8850				300	30000	9150			
310	31000	9450				320	32000	9750			
330	33000	10050				340	34000	10350			
350	35000	10650				360	36000	10950			
370	37000	11300				380	38000	11600			
390	39000	11900				400	40000	12200			
410	41000	12500				430	43000	13100			
450	45000	13700				470	47000	14350			
490	49000	14950				510	51000	15550			
etc.	etc.					etc.	etc.	etc.			

2.5 Approach and landing

2.5.1 A QNH altimeter setting is made available in the routine approach and landing instructions.

2.5.2 A QFE altimeter setting is made available on request in approach and landing clearance but reports to ATC are to be made in altitude.

2.5.3 Vertical displacement of aircraft during approach is effected by reference to flight level until passing the transition level below which vertical displacement is controlled by reference to altitude, except as provided in **2.5.4**.

2.5.4 After approach clearance has been issued and the descent to land is commenced, the vertical position of an aircraft above the

transition level may be by reference to altitude (QNH) provided that level flight above the transition altitude is not indicated or anticipated.

2.6 Missed Approach

2.6.1 The relevant portions of paragraph **2.3**, **2.4** and **2.5** shall be applied in case of a missed approach.

3. Procedure applicable to operators and pilots

3.1 Flight Planning

3.1.1 The levels at which a flight is to be conducted shall be specified in a flight plan:

3.1.1.1 in terms of flight levels, if the flight is to be conducted at or above the transition level; and

3.1.1.2 in terms of altitudes, if the flight is to be conducted in the vicinity of an aerodrome and at or below the transition altitude.

Note 1: *Short flight in the vicinity of an aerodrome may often be conducted only at altitudes below the transition altitude.*

Note 2: *Flight levels are specified in the flight plan by number, and not in terms of feet in the case of altitudes.*

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