

## ENR 1.7 ALTIMETER SETTING PROCEDURES

**1 GENERAL**

Altimeter setting procedures in use, generally conform to those contained in ICAO Doc 8168-OPS/611.

**1.1 Transition altitude/transition level**

- a. The transition altitude is 3000 ft for IFR flights and 3500 ft for VFR flights in the entire Amsterdam FIR<sup>1)</sup>.
- b. The transition level for the entire Amsterdam FIR is positioned at or above 4000 ft AMSL and is determined hourly.

<sup>1)</sup> Including the North Sea area V up to and including FL 055.

**1.2 Altimeter setting regions (ASR)**

For en route flights at or below the transition altitude a regional QNH will be made available for the following altimeter setting regions in the Amsterdam FIR, including the North Sea area V:

**Note:** The lateral limits of the ASRs are depicted in chart ENR 6-3.1.

Name Lateral limits	Location of regional QNH measurement
<p><b>ASR North Sea North</b>            53°00'00.00"N 003°08'26.32"E;            53°18'03.23"N 003°03'19.03"E;            53°28'09.25"N 003°00'55.01"E;            53°35'03.26"N 002°59'12.99"E;            53°40'03.27"N 002°57'18.98"E;            53°57'45.30"N 002°51'54.93"E;            54°22'45.34"N 002°45'42.87"E;            54°37'15.38"N 002°53'48.85"E;            55°45'51.53"N 003°22'07.74"E;            55°19'57.52"N 004°19'54.89"E;            55°00'00.00"N 005°00'00.00"E;            along parallel to            55°00'00.00"N 006°30'00.00"E;            53°40'00.00"N 006°30'00.00"E;            53°30'00.00"N 005°34'00.00"E;            53°26'24.00"N 005°10'00.00"E;            53°22'29.07"N 004°52'20.47"E;            along anti-clockwise arc (radius 8 NM, centre            53°15'00.00"N 004°57'00.00"E) to            53°15'00.00"N 004°43'40.92"E;            along parallel to            53°15'00.00"N 004°37'01.38"E;            along anti-clockwise arc (radius 12 NM, centre            53°15'00.00"N 004°57'00.00"E) to            53°11'06.00"N 004°38'07.51"E;            53°09'17.00"N 004°40'28.00"E;            53°06'10.00"N 004°30'56.00"E;            53°05'00.00"N 004°21'00.00"E;            53°00'00.00"N 004°21'00.00"E;            along parallel to point of origin.</p>	<p>Offshore platform J6-A (see ENR 2.2)</p>
<p><b>ASR North Sea South</b>            53°00'00.00"N 003°08'26.32"E;            along parallel to            53°00'00.00"N 004°21'00.00"E;            52°48'19.15"N 004°21'00.00"E;            52°45'25.00"N 004°28'03.00"E;            52°43'30.00"N 004°33'40.00"E;            52°43'49.91"N 004°36'45.15"E;            52°31'28.84"N 004°33'57.79"E;            52°25'22.30"N 004°31'28.45"E;            52°16'49.35"N 004°25'35.00"E;            52°12'17.73"N 004°21'31.43"E;            52°08'56.80"N 004°17'31.07"E;            51°59'40.04"N 004°04'25.04"E;            52°00'26.39"N 004°00'34.71"E;            51°49'19.04"N 003°49'57.08"E;            51°44'23.05"N 003°40'35.57"E;            51°35'50.00"N 003°28'43.68"E;            along parallel to            51°35'50.00"N 003°13'49.65"E;            51°23'55.58"N 003°06'00.49"E;            51°30'00.00"N 002°00'00.00"E;            52°55'51.61"N 003°09'36.17"E;            to point of origin.</p>	<p>Offshore light platform GOEREE (see ENR 2.2)</p>

Name Lateral limits	Location of regional QNH measurement
<p><b>ASR Amsterdam</b>                      53°40'00.00"N 006°30'00.00"E;                      53°33'38.00"N 006°36'24.00"E;                      53°31'22.00"N 006°40'20.00"E;                      53°30'15.00"N 006°44'30.00"E;                      53°29'45.00"N 006°48'59.00"E;                      53°28'28.00"N 006°51'49.00"E;                      53°23'56.00"N 006°56'58.00"E;                      53°20'11.00"N 006°59'37.00"E;                      53°19'00.00"N 007°01'30.00"E;                      53°18'00.00"N 007°11'30.00"E;                      53°12'48.00"N 007°13'01.00"E;                      along Dutch-German border to                      51°15'05.00"N 006°05'30.00"E;                      51°15'30.00"N 005°33'15.00"E;                      along Dutch-Belgian border to                      51°22'22.76"N 003°21'46.71"E;                      51°23'55.58"N 003°06'00.49"E;                      51°35'50.00"N 003°13'49.65"E;                      along parallel to                      51°35'50.00"N 003°28'43.68"E;                      51°44'23.05"N 003°40'35.57"E;                      51°49'19.04"N 003°49'57.08"E;                      52°00'26.39"N 004°00'34.71"E;                      51°59'40.04"N 004°04'25.04"E;                      52°08'56.80"N 004°17'31.07"E;                      52°12'17.73"N 004°21'31.43"E;                      52°16'49.35"N 004°25'35.00"E;                      52°25'22.30"N 004°31'28.45"E;                      52°31'28.84"N 004°33'57.79"E;                      52°43'49.91"N 004°36'45.15"E;                      52°43'30.00"N 004°33'40.00"E;                      52°45'25.00"N 004°28'03.00"E;                      52°48'19.15"N 004°21'00.00"E;                      53°05'00.00"N 004°21'00.00"E;                      53°06'10.00"N 004°30'56.00"E;                      53°09'17.00"N 004°40'28.00"E;                      53°11'06.00"N 004°38'07.51"E;                      along clockwise arc (radius 12 NM, centre                      53°15'00.00"N 004°57'00.00"E) to                      53°15'00.00"N 004°37'01.38"E;                      along parallel to                      53°15'00.00"N 004°43'40.92"E;                      along clockwise arc (radius 8 NM, centre                      53°15'00.00"N 004°57'00.00"E) to                      53°22'29.07"N 004°52'20.47"E;                      53°26'24.00"N 005°10'00.00"E;                      53°30'00.00"N 005°34'00.00"E;                      to point of origin.</p>	<p>AMSTERDAM/Schiphol</p>
<p><b>ASR Maastricht</b>                      51°15'30.00"N 005°33'15.00"E;                      51°15'05.00"N 006°05'30.00"E;                      along Dutch-German border to                      50°45'15.44"N 006°01'15.63"E;                      along Dutch-Belgian border to point of origin.</p>	<p>MAASTRICHT/Maastricht Aachen</p>

## 2 PROCEDURES

### 2.1 Take-off and climb

- a. The aerodrome QNH is given to aircraft in start-up clearances prior to take-off.
- b. Vertical position of aircraft during climb shall be expressed in terms of altitude until reaching the transition altitude above which the vertical position shall be expressed in terms of flight level (1013.2 hPa).

### 2.2 Approach and landing

- a. The aerodrome QNH and the transition level are given in approach clearances and in clearances to enter the traffic circuit.
- b. The vertical position of aircraft during approach shall be expressed in terms of flight level until reaching the transition level below which the vertical position shall be expressed in terms of altitude.

### 2.3 Missed approach

The relevant parts of paragraph 2.1 and 2.2 shall be applied in case of a missed approach.

## 2.4 En route at or below the transition altitude

En route flights at or below the transition altitude shall use the latest appropriate regional QNH which will be given by ATC on initial contact, or by the appropriate ATS unit.

## 2.5 Barometric pressure setting check via Mode S Enhanced Surveillance

Amsterdam ACC, Schiphol APP and Rotterdam APP are equipped with functionality to verify the selected barometric pressure setting via Mode S Enhanced Surveillance.

## 3 CRUISING LEVELS

### 3.1 General

The cruising level at which a flight or a portion of a flight is to be conducted shall be in terms of:

- Flight level, for en route flights above the transition altitude.
- Altitude, for en route flights at or below the transition altitude.

**Note:** the highest obstacle in the Netherlands has an elevation of less than 1500 ft AMSL. Since the transition altitude is 3000 ft AMSL for all IFR flights (departing, arriving and en route) no terrain clearance considerations need to be taken into account when using the flight level system. For this reason no need exists for the determination of 'minimum usable flight levels' ('corresponding to, or immediately above, the established minimum flight altitude' - PANS-ATM, III-4).

### 3.2 VFR flights

VFR flights operated in level cruising flight above 3500 ft AMSL shall be conducted at a flight level appropriate to the track as specified in paragraph 3.4 (table of cruising levels), except when otherwise indicated in ATC clearances.

### 3.3 IFR flights

#### 3.3.1 Within controlled airspace

The cruising level for IFR flights in controlled airspace shall be selected from the table of cruising levels specified in paragraph 3.4. The correlation of levels to track prescribed in paragraph 3.4 shall not apply along the ATS routes and helicopter routes listed in paragraph 3.4.1 or when otherwise indicated in ATC clearances.

#### 3.3.2 Outside controlled airspace

An IFR flight operating in level cruising flight outside controlled airspace shall be flown at a cruising level appropriate to its track as specified in paragraph 3.4 table of cruising levels.

The correlation of levels to track prescribed in paragraph 3.4 shall not apply along the helicopter routes listed in paragraph 3.4.1.

### 3.4 Table of cruising levels

Magnetic track					
From 000° to 179°			From 180° to 359°		
IFR		VFR <sup>1)</sup>	IFR		VFR <sup>1)</sup>
FL	Altitude	FL	FL	Altitude	FL
-	1000 ft	-	-	2000 ft	-
-	3000 ft	-	-	-	-
030	-	035	040	-	045
050	-	055	060	-	065
070	-	075	080	-	085
090	-	095	100	-	105
110	-	115	120	-	125
130	-	135	140	-	145
150	-	155	160	-	165
170	-	175	180	-	185
190	-	195	200	-	-
210	-	-	220	-	-
230	-	-	240	-	-
250	-	-	260	-	-
270	-	-	280	-	-
290	-	-	300	-	-
310	-	-	320	-	-
330	-	-	340	-	-
350	-	-	360	-	-
370	-	-	380	-	-
390	-	-	400	-	-
410	-	-	430	-	-
450	-	-	470	-	-

Magnetic track					
From 000° to 179°			From 180° to 359°		
IFR		VFR <sup>1)</sup>	IFR		VFR <sup>1)</sup>
FL	Altitude	FL	FL	Altitude	FL
etc.			etc.		

<sup>1)</sup> For VFR flights above 3500 ft AMSL.

**Note:** for flights above the transition altitude the lowest flight level to be selected is the first appropriate (IFR or VFR) flight level corresponding with, or immediately above, the common transition level for the Amsterdam FIR (see note paragraph 3.1).

**Note:** to IFR flights of a random character cruising at or below 3000 ft AMSL, ATC will normally assign a single IFR altitude for the entire flight. In flight planning the selection of a single semicircular altitude based on the 'altitude-to-track' correlation of the most significant portion of the route.

### 3.4.1 Exceptions

The following ATS routes and helicopter routes do not comply to the standard semicircular altitude-to-track correlation prescribed in paragraph 3.4.

- KY602 (AGASO-DIKAT)
- KY605
- KY606
- KY607
- KY608
- KY609
- KY610 (AGISI-AGASO)
- KY615 (BOGTI-BELAP)
- KY673 (INVIT-EPOXU)
- KY683
- N872 (WOODY-PAM)
- N873 (HELEN-SPY)
- Q21
- T604 (TENLI-BADEX)
- T606 (VAPEX-EKNON)
- Z310
- Z311

### 3.5 Gliders

Gliders are usually equipped with altimeters calibrated in metres.

The glider circuits in the Netherlands are based there-on and the terrain heights, given in metres, will be of great help when making a landing after a cross country flight.

Glider pilots will practically never fly horizontally, however, for safety reasons it is very important that above 3500 ft (1065 m) AMSL the procedure mentioned in paragraph 3.2 will be adhered to, such in connection with the determination of the height with respect to the lower limit of areas in which VFR flights are prohibited or for reporting by radio.

In order to avoid the areas in which VFR flights are prohibited, glider pilots are advised to use the table below to convert their altimeter reading from metres into flight level.

Above 1065 m (3500 ft) AMSL the altimeter subscale should be set on 1013.2 hPa. The relation between indicated reading in metres and flight level above this altitude is:

m	FL	m	FL	m	FL
760	025	2590	085	4420	145
915	030	2745	090	4570	150
1065	035	2895	095	4725	155
1220	040	3050	100	4875	160
1370	045	3200	105	5030	165
1525	050	3355	110	5180	170
1675	055	3505	115	5335	175
1830	060	3660	120	5485	180
1980	065	3810	125	5740	185
2135	070	3960	130	5790	190
2285	075	4115	135	5945	195
2440	080	4265	140		