

Safety Information Bulletin

Operations – ATM/ANS

SIB No.: 2023-03

Issued: 09 March 2023

Subject: Incorrect Barometric Altimeter Setting

Ref. Publications:

None.

Applicability:

Aircraft operators and Air Navigation Service Providers.

Description:

Recent serious incidents have highlighted a concern on the effects of incorrect barometric altimeter settings when operating below the transition level. Operating with an incorrect altimeter setting could result in insufficient clearance with terrain and obstacles, or a loss of separation with other traffic, which may potentially lead to CFIT (refer to the acronyms list in Appendix 1 of this SIB) or mid-air collision.

Procedures relying on the use of barometric altimetry have been used for many years and have considerably improved safety by offering vertical guidance to runways, which were previously served with 2D instrument approach procedures or even visual approach procedures.

Incorrect barometric altimeter setting, however, could severely affect the safety margins protecting a variety of approach procedures that are based on the use of barometric altimetry for vertical navigation (e.g. RNP APCH to LNAV/VNAV minima, RNP AR APCH), or that are flown using the CDFA technique that rely on a BARO-VNAV equipment onboard to compute the vertical profile and to provide vertical guidance along the descent (e.g., NDB, VOR, LOC). In addition, it is highlighted that when using barometric altimetry for vertical navigation, altitude/distance cross checks in the Standard Operating Procedures do not detect an incorrect barometric altimeter setting.

Vertical guidance provided by ILS, SBAS (RNP APCH to LPV minima) or GBAS is not vulnerable to an incorrect barometric setting.

Setting the correct barometric values involves several steps that may be subject to errors, including the following: the determination of the local barometric pressure by the meteorological service provider, the broadcasting of the local QNH (or QFE) through ATIS (where available), the radio transmission of the local QNH (or QFE) by Air Traffic Services to the flight crew, and, finally, the altimeter setting by the flight crew from 1013.2 hPa / 29.92 inHg to QNH (or QFE).

This is information only. Recommendations are not mandatory.



At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Safety Directive (SD) action under Commission Regulation (EU) [965/2012](#), Annex II, ARO.GEN.135(c), nor under Commission Regulation (EU) [2017/373](#), Annex II, ATM/ANS.AR.A.030.

Recommendations:

Aircraft operators and ANSPs are reminded of the importance of ensuring that the correct barometric altimeter setting is provided and entered in the aircraft's systems.

To prevent the risk of incorrect barometric setting and mitigate its potential consequences, the following practices are recommended:

To ANSPs:

- Consider introducing procedures to provide aircraft with the QNH (or QFE) when clearing an aircraft for the approach or at first contact with the tower.
- Consider the use of the barometric pressure settings that Mode S EHS equipped aircraft downlink to enable timely identification of aircraft operating with incorrect barometric altimeter setting.

To aircraft operators:

- Develop procedures to support pilots in checking the consistency of the QNH (or QFE) with previous settings and other available sources (e.g. ATIS).
- Ensure that the latest available software version and the latest terrain and obstacle database are loaded in the Terrain Awareness and Warning System (TAWS).
- Investigate methods to identify incorrect altimeter setting with the FDM Programme.

In addition, ANSPs and aircraft operators are reminded of the obligations on the use of standard phraseology [ref. Commission Implementing Regulation (EU) No. [923/2012](#)] and on reporting of occurrences [ref. Regulation (EU) No. [376/2014](#)].

Contact(s):

For further information contact the EASA Safety Information Section, Certification Directorate.
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Appendix 1 – Acronyms list

2D instrument approach	Two-dimensional instrument approach operation means an instrument approach operation using lateral navigation guidance only
ANSP	Air Navigation Service Providers
ATIS	Automatic Terminal Information Service
BARO-VNAV	Barometric Vertical Navigation
CDFA	Continuous Descent Final Approach
CFIT	Controlled Flight Into Terrain
FDM	Flight Data Monitoring
GBAS	Ground Based Augmentation System
ILS	Instrument Landing System
LNAV	Lateral Navigation
LOC	Localiser
LPV	Localiser Performance with Vertical Guidance
Mode S EHS	Mode S Enhanced Surveillance
NDB	Non-Directional Beacon
QFE	Pressure at airfield elevation
QNH	Pressure reduced to mean sea level
RNP APCH	Required Navigation Performance Approach
RNP AR APCH	Required Navigation Performance "Authorization Required" Approach
SBAS	Satellite Based Augmentation System
TAWS	Terrain Awareness Warning System
VNAV	Vertical Navigation
VOR	VHF Omnidirectional Radio Range

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