EASA Safety Information Bulletin

SIB No.: **2014-04**
Issued: **07 February 2014**

Subject: **RNP-APCH (Required Navigation Performance Approach Procedures) with Barometric Vertical Navigation (APV/Baro-VNAV).**

Ref. Publications:

- EASA Acceptable Means of Compliance (AMC) 20-27.
- EASA Certification Memorandum CM – AS – 002, Issue 01 dated 06/08/2012.

  Note 1: Section 7.5 of CM-AS-002 Issue 01 that addresses RNP-APCH procedures with APV/Baro-VNAV will be removed with Issue 02.
- International Civil Aviation Organization (ICAO) Procedures for Air Navigation Services - Operations (PANS OPS), ICAO Doc 8186, Amendment 4, Volume I & II; ICAO Performance Based Navigation (PBN) Manual, ICAO Doc 9613, 4th edition, 2013.
- Federal Aviation Administration (FAA) Advisory Circular (AC) 20-138C dated 08/05/2012 (cancelling FAA AC 20-129 and FAA AC 20-138B).
- Final Report of the International Air Transport Association (IATA)/Association of European Airlines (AEA) Joint User Requirement Group (JURG) OPS Task Force (TF) on the use of APV/Baro-VNAV approaches at airports above 5.000 ft, dated 23/08/2013.

  Note 2: The final report of the IATA/AEA OPS TF is available for registered users from the AEA website: http://files.aea.be/jurg or can be made available by EASA upon request.

Applicability: Aeroplanes registered in EASA Member States operating RNP-APCH procedures with APV/Baro-VNAV.

Description: In December 2009, EASA published AMC 20-27 which contained, in section 6.3.2, new airworthiness criteria for Vertical Total System Error (TSEz) for APV/Baro-VNAV approach operations that were more stringent than those in effect before.

This is information only. Recommendations are not mandatory.

The rulemaking group that drafted the AMC decided to implement the new criteria after they found an inconsistency between the PANS-OPS Procedure design criteria and the airworthiness criteria published in the ICAO PBN Manual as well as in FAA AC 20-129, which had been the leading guidance document for airworthiness approval of APV/Baro-VNAV operations. The inconsistency could result in inadequate obstacle clearances, i.e. a potentially unsafe situation for operations to airfields located above 5.000 ft mean sea level (MSL).

Soon after, EASA implemented an airworthiness certification policy to consistently deal with applications where the applicant proposed to demonstrate compliance with all AMC 20-27 requirements, except the new TSEz requirements. The policy essentially limited APV/Baro-VNAV operations to airports with a field elevation not exceeding 5.000 ft MSL. This policy was later published in EASA Certification Memorandum CM-AS-002 Issue 01.

Referring to the EASA certification policy, some National Aviation Authorities (NAAs) began to apply these certification limitations in the operational domain, affecting commercial air transport operators under their oversight.

Concerned about the impact of the policy on the operations of their member airlines, IATA and AEA formed an OPS TF under the auspices of EASA, to perform an in depth study into this subject. The results indicate that there is room to relax the operational limitations, as applied by some NAAs, e.g. increase airport elevation from 5.000 ft to 6.000 ft.

EASA endorses the results and the recommendations provided in the IATA/AEA OPS TF Final Report and provides new recommended criteria for operational approval of APV/Baro-VNAV approach operations not certified to AMC 20-27 below.

Recommendation(s): Based on the results and the recommendations provided in the IATA/AEA OPS TF Final Report, EASA recommends operators based in EASA Member States and their NAAs to consider the following for APV/Baro-VNAV approach operations:

Aircraft with AMC 20-27 approval:

Airport Elevation	Limitations & Recommendations
At or below 10.000 ft MSL	No limitations
Above 10.000 ft MSL	No limitations. However, use of Autopilot or Flight Director (AP/FD) is recommended.

Aircraft with FAA AC 20-129 approval:

Airport Elevation	Limitations & Recommendations
At or below 6.000 ft MSL	No limitations (*)
Above 6.000 ft MSL	Mandatory use of AP/FD (*), Application of other mitigations such as: • Limiting the allowable air temperature range • Limiting the vertical deviation monitoring values

(*) Note 3: The considerations above are limited to vertical accuracy for APV/Baro-VNAV operations. Additional limitations, in particular those found in the Aircraft Flight Manual or Pilot's Operating Handbook, remain applicable.

NAAs responsible for operational approvals may impose additional limitations or require the use of specific operational procedures (e.g. if the aircraft does not adequately meet the AMC 20-27 functional criteria for APV/Baro-VNAV operations).

Aircraft with FAA AC 20-138C approval:

No limitations.

Further aspects to consider:

- The altitudes in the tables above refer to field elevation, i.e. the elevation of the airport above MSL.
- FAA AC 20-138C introduced new criteria for TSEz which are more stringent than those in AMC 20-27.
- The IATA/AEA OPS TF Final Report indicates that there are very few airfields at elevations above 6.000 ft MSL for which APV/Baro-VNAV approaches have been published and that are of (commercial) interest for operators based in EASA Member States.
- The foreseen Amendment 5 to ICAO Doc 8168 PANS-OPS will implement a Minimum Obstacle Clearance (MOC) increase of 30 m at 5.000 ft and 45 m at 10.000 ft, thus further increasing the safety margins in the longer term. This amendment will take effect on November 13, 2014.

Contact(s): For further information contact the Safety Information Section, Executive Directorate, EASA. E-mail: ADs@easa.europa.eu.