

SUBJECT: Increase of LNAV/VNAV operational minima associated with RNP APCH and RNP AR APCH approach procedures

1. Introduction

The safety investigation conducted by the BEA following the serious incident of 23 May 2022 involving an Airbus A320 aircraft (registration 9H-EMU), which occurred during the execution of an LNAV/VNAV RNP APCH approach to runway 27R at Paris Charles de Gaulle aerodrome, highlighted a specific safety risk associated with approaches using barometric vertical guidance.

A study carried out by the Air Navigation Services Directorate (DSNA) demonstrated that the rate of discrepancy between the QNH displayed on board aircraft and the QNH recorded by air traffic control systems is significant. This rate is estimated at approximately:

- 1 per 1,000 for differences greater than or equal to 2 hPa (corresponding to a vertical error of 56 ft / 17 m);
- 1 per 10,000 for differences of 10 hPa or more (corresponding to a vertical error of 280 ft / 85 m).

Such discrepancies may result in a degradation of the achieved level of safety compared with the level of safety assumed for the conduct of LNAV/VNAV approaches.

In this context, and taking into account the procedures governing the approval and publication of operational minima in France, the French Civil Aviation Safety Directorate (DSAC) considered that, as long as additional risk mitigation measures aimed at reducing the probability of QNH-setting errors have not been implemented and their effectiveness has not been demonstrated, increasing LNAV/VNAV operational minima constitutes the most appropriate risk mitigation measure.

This decision was supported by the observation of a significant difference between LNAV and LNAV/VNAV obstacle clearance heights (OCHs), with LNAV OCHs generally being significantly higher than LNAV/VNAV OCHs in France. Although both types of approach provide identical lateral navigation performance and rely on the same barometric reference system, this difference highlights a specific vulnerability of LNAV/VNAV approaches.

Consequently, the DSAC issued an order pursuant to Article R. 6312-11 of the French Transport Code: the Order of 11 December 2025 increasing aerodrome operating minima associated with instrument approach procedures using barometric vertical guidance.

<https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000053043825>

2. Applicable Provisions

In accordance with this order:

a) RNP APCH – LNAV/VNAV procedures

LNAV/VNAV decision heights (DH) are increased by 100 ft, without exceeding the value of the LNAV minimum descent height (MDH) associated with the same procedure.

The applicable rule is therefore as follows:

New DA/H (LNAV/VNAV) = min [Current DA/H (LNAV/VNAV) + 100 ft ; MDA/H (LNAV)]

b) RNP AR APCH procedures

The minimum decision height (DH) associated with RNP AR APCH procedures is increased to 350 ft.

c) Runway Visual Range (RVR)

The runway visual range (RVR) values associated with the affected approaches are recalculated on the basis of the new decision height values, in accordance with Part VII of the document entitled “recueil des critères pour la conception des procédures de vol aux instruments et des règles de détermination des minimums opérationnels associé” (collection of criteria for the design of instrument flight procedures and rules for determining associated operational minima), without prejudice to the application by air operators of the provisions of Regulation (EU) No 965/2012 (AIR OPS).

3. Entry into Force and Publication

The increase in operational minima shall enter into force no later than 1 April 2026.

This information will be promulgated to users:

- through the amendment of Instrument Approach Charts (IAC) revised prior to this date;
- through the publication of NOTAMs for aerodromes whose Instrument Approach Charts cannot be revised before this date.