Consultation Paper Equivalent Safety Finding UK.ESF.F.0003 Issue 1

Proposed: ☒ Final ☐
Deadline for comments: 25 December 2025

SUBJECT:	Indications Removal from Primary Flight Displays During Ground Phases
REQUIREMENTS incl. Amdt.:	CS-23 Initial Issue: 23.1303, 23.1311, 23.1321
ASSOCIATED IM/MoC:	Yes ☐ / No ☒
ADVISORY MATERIAL:	N/A

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Introductory Note

The following equivalent safety finding has been raised by the UK CAA in accordance with the provisions of point 21.B.80 of Part-21 (Annex I to UK Regulation (EU) No 748/2012).

In accordance with the UK CAA Design and Certification procedures, such Equivalent Safety Findings shall be assessed by the authority and be subject to a period of public consultation of not less than 2 weeks except if they have been previously agreed and published by the UK CAA.

All interested persons may submit their comments on this Equivalent Safety Finding Proposal online: Equivalent Safety Finding UK.ESF.F.0003 Consultation. The consultation period will close on 25 December 2025.

The final decision shall be published by the UK CAA.

Acronyms and Abbreviations

AMM	Airport Moving Map
AMC	Acceptable Means of Compliance
CAA	Civil Aviation Authority
CS	Certification Specification
ESF	Equivalent Safety Finding
IFR	Instrument Flight Rules
IM	Interpretive Material
MoC	Means of Compliance
PFD	Primary Flight Display
UK	United Kingdom of Great Britain and Northern Ireland
V_D/M_D	Design Diving Speed
V_{MO}/M_{MO}	Maximum Operating Limit Speed

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Identification of Issue

A request has submitted to UK CAA for an Equivalent Safety Finding (ESF) to CS-23 23.1303, 23.1311(a)(3) & 23.1321(d) for a Normal-Category Aeroplane. The design change includes a 3D Airport Moving Map (AMM) feature.

The intended function of the 3D AMM is to improve short term situational awareness on ground, at low speed, by providing a synthetic 3-dimensional vision of the airport environment on the Primary Flight Display (PFD) and is inhibited while the aircraft is airborne.

CS-23 Initial Issue requires:

CS 23.1303 Flight and navigation instruments

The following are the minimum required flight and navigational instruments:

(a) An airspeed indicator.

(b) An altimeter.

(c) A non-stabilised magnetic direction indicator.

(d) For reciprocating engine-powered aeroplanes of more than 2 722 kg (6 000 lb) maximum weight and turbine engine-powered aeroplanes, a free air temperature indicator or an air temperature indicator which provides indications that are convertible to free air.

(e) A speed warning device for –

(1) Turbine engine-powered aeroplanes; and

(2) Other aeroplanes for which V_{MO}/M_{MO} and V_D/M_D are established under CS 23.335 (b) (4) and 23.1505 (c) if V_{MO}/M_{MO} is greater than $0{\cdot}8\ V_D/M_D$.

The speed warning device must give effective aural warning (differing distinctively from aural warnings used for other purposes) to the pilots whenever the speed exceeds V_{MO} plus 11 km/h (6 knots) or M_{MO} + 0·01. The upper limit of the production tolerance for the warning device may not exceed the prescribed warning speed. The lower limit must be set to minimise nuisance warnings.

(f) When an attitude display is installed the instrument design must not provide any means, accessible to the flight crew, of adjusting the relative positions of the attitude reference symbol and the horizon line beyond that necessary for parallax correction.

(g) In addition, for commuter category aeroplanes:-

(1) If airspeed limitations vary with altitude, the airspeed indicator must have a maximum allowable airspeed indicator showing the variation of V_{MO} with altitude.

(2) The altimeter must be a sensitive type.

(3) Having a passenger seating configuration of 10 or more, excluding the pilot's seats and that are approved for IFR operations, a third attitude instrument must be provided that:

(i) Is powered from a source independent of the electrical generating system;

(ii) Continues reliable operation for a minimum of 30 minutes after total failure of the electrical generating system;

(iii) Operates independently of any other attitude indicating system;

(iv) Is operative without selection after total failure of the electrical generating system;

(v) Is located on the instrument panel in a position acceptable to the Authority that will make it plainly visible to and usable by any pilot at the pilot's station; and

(vi) Is appropriately lighted during all phases of operation.

CS 23.1311(a)(3) Electronic display instrument systems

(a) Electronic display indicators, including those with features that make isolation and independence between powerplant instrument systems impractical, must –

(3) Not inhibit the primary display of attitude, airspeed, altitude, or powerplant parameters needed by any pilot to set power within established limitations, in any normal mode of operation.

CS 23.1321(d) Arrangement and visibility

(d) For each aeroplane the flight instruments required by CS 23.1303 and, as applicable, by the Operating Rules must be grouped on the instrument panel and centred as nearly as practicable about the vertical plane of the pilot's forward vision. In addition –

(1) The instrument that most effectively indicates the attitude must be on the panel in the top centre position;

(2) The instrument that most effectively indicates airspeed must be adjacent to and directly to the left of the instrument in the top centre position;

(3) The instrument that most effectively indicates altitude must be adjacent to and directly to the right of the instrument in the top centre position;

With the introduction of the AMM third-person view ("exocentric" view) on the PFD, some of the indications required by CS 23.1303, complemented by 23.1311(a)(3) and 23.1321(d), will be removed, or/and rearranged, from the display when the exocentric view is active. As a result, UK CAA considers that literal compliance to the previously mentioned requirements will not be achievable.

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UK.ESF.F.0003 Equivalent Safety Finding: Indications Removal from Primary Flight Displays During Ground Phases

1. APPLICABILITY

This ESF is applicable to CS-23 Normal-Category Aeroplanes.

1.1 AFFECTED CS

CS-23 Initial Issue:

23.1303 Flight and navigation instruments

23.1311(a)(3) Electronic display instrument systems

CS 23.1321(d) Arrangement and visibility

2. COMPENSATING FACTORS

In lieu of direct compliance to the above-mentioned affected requirements and provided that the below compensating factors are complied with, some indications can be removed from primary flight displays during ground phases.

The Applicant is expected to demonstrate that the usability, functionality and safety is equivalent to a full-time display of those indications. For this purpose, the applicant must show that:

- Each crew member does not need to use the indication when it is removed on the ground or can rely on an alternate information that is more relevant for this specific case (e.g. ground speed in place of indicated air speed).
- The removed indication is automatically displayed in ground phases when it is required (e.g. from line up on the take-off runway).
- The display of the removed indication can be manually selected by the flight crew without interfering with the display of other required information.
- If the indication is failed while removed (e.g. failure of the bank and pitch information when not displayed), the corresponding alerting is as efficient as when the indication is available.
- Mitigations have been put in place to compensate for the reduced exposure of flight crew to failures that may not be detected by the systems (e.g. frozen heading and airspeed on both sides).
- If the removed indication fails to be displayed when required or is erroneously removed during other flight phases (e.g. in cruise), the failure effect and compounding effects meet all applicable certification specifications.
- Appropriate procedures when needed to ensure Continued Safe Flight and Landing and to recover the removed information are introduced in the Aeroplane Flight Manual.