

COMMENT RESPONSE DOCUMENT

EASA PAD No. 23-120

[Published on 25 October 2023 and officially closed for comments on 22 November 2023]

Commenter 1: Cathay Pacific Airways Limited – Jonathan Chiu – 17/11/2023

Comment # 1

A) Regarding to the part - NSV evaluation in PAD No.: 23-120, the method to monitor the NSV is per CFM SB 72-0504 Step 5.A. or Step 5.B.. As this is a unique way to monitor, what is the anticipated documentations to show compliance from EASA's point of view?

B) Also, according to CFM LEAP-1A Customer Connection Call on 25th Oct 2023, a Customer Notification Report (CNR) will be triggered as per SB 72-0504 alerting threshold, i.e. 3 or more NSV fleeting reports, more than or equal to 1.1 Gs in magnitude, and at minimum one of those fleeting reports is more than or equal to 2.0 Gs in magnitude in the past 125 cycles. Will EASA consider including this CNR Monitoring as an option for NSV Evaluation in the AD?

NSV Fleet Monitoring SBs & CNR



Document /SB Number	Addressing	Field Recommendation	XAE-GATD	XAE Non-GATD	Non-XAE
72-0352 (Cat 2B)	• Cancelled	• Changed to Category 9 & "CFM No longer Recommends this SB"	N/A	N/A	N/A
72-0504 (Cat 2B)	• NSV Signal Monitoring Recommendations • List all XAE SN's on SB – ESN as reference (per production) • FAA/EASA AD expected	If XAE-GATD or XAE NON-GATD installed: • NSV monitoring every 125 cycles, 65/125+ data coverage recommendation • Alerting → 3+ fleeting reports > 1.1 G's from TCF within past 150 cycles, with at least 1 FR > 2.0 G's... 150 cycle engine removal & inspect HPT per module/part ESM & no LLP scrap • "Estimated NSV" as backup option using ACMS input with different limits	✓	✓	N/A
72-0509 (Cat 2B)	• NSV Signal Monitoring Recommendations • Effectivity: Engines not affected by SB 72-0504	• Rest of fleet; same data coverage & alerting levels as 72-0504 • 150 cycle engine removal & inspect HPT per module/part ESM & no LLP scrap • "Estimated NSV" as backup option using ACMS input with different limits	N/A	N/A	✓
CNR Monitoring	• NSV Signal Monitoring Recommendations	• Same alerting levels as SB 72-0504/72-0509 • Recommendation to refer to SB's; CEOD download as optional step	✓	✓	✓

EASA response:



1A) Comment noted. EASA is not responsible for AD enforcement. Any documentation can be used, provided it is acceptable to the Competent Authority.

1B) Comment not agreed. EASA acknowledges that a CNR will be issued to the operator if certain conditions are met. Anyway, according to the instructions of the SB, operators are still required to determine the NSV. Relying only on the CNR is not deemed adequate to accomplish the requirements of the AD. A Note has been added in the AD for clarification.

Commenter 2: easyJet Plc – Joshua Duckworth – 21/11/2023

Comment # 2

- A. PAD Para (1) instructs to "evaluate the NSV in accordance with the instructions in the SB". It is not clear what section of the SB 72-00-0504 ISS 002 is being mandated. It is interpreted that all alternative procedures defined in the SB are available to demonstrate compliance with PAD para (1) (NSV evaluation) - can EASA confirm that this interpretation is correct and review whether the wording is clear?
- B. The requirement to evaluate NSV data as per PAD para (1) will prove very difficult to demonstrate compliance with. SB 72-00-0504 para 5.A.(3) provides instructions to monitor NSV data with trends utilising CFM diagnostics. The current monitoring adopted is through CNR issuance from CFM diagnostics as described in the following note in para 5.A.(3) - "NOTE: CFM Diagnostics uses alert technology on a flight-by-flight basis dependent on EEC post flight summary and fleeting reports snapshot data given to CFM. If the conditions are present to generate an alert based on the guidance specified in this Service Bulletin, the data will be evaluated and a customer notification report (CNR) will be issued to the operator". This is a note, not an instruction; the paragraph then provides instructions to manually carry out a trend review which is already done by diagnostic algorithms of course being contingent on the operator feeding the diagnostic database with sufficient fleet reports as required in "The SB". Can EASA clarify prior to AD issuance whether the CFM diagnostics process described in the note will be sufficient to demonstrate compliance with para (1) of the PAD?
- C. PAD para (2) mandates removal of the engine within 125 FC if "The SB" NSV data availability for an affected engine is not restored to above 65 FC within 50 FC. The reality is that there will be scenarios where an engines data is recovered, but above the 50 FC threshold. In this scenario, operators would typically contact the OEM for recommendations or dispensation but as the PAD and "the SB" is written, operators will be required to remove the engine irrespective of the bespoke NSV data availability scenarios that can be experienced. Can this condition be reviewed and taken into account prior to AD issuance? The AD as written will force operators to remove engines when it may not be necessary from a technical standpoint.

EASA response:

2A) Comment noted. All methods provided in the SB are acceptable for compliance with the AD. A Note has been added in the AD for clarification.

2B) See EASA answer to comment 1B



2C) Comment not agreed. EASA does not agree to keep an affected engine in service when its status is unknown. Considering that the SB has been published in June 2023, then revised in October 2023, and that the PAD has been published in November 2023, it is expected that data is now available for the majority of affected engines. According to the Art. 71 of the Regulation (EU) 2018/1139, Temporary exemptions to an AD requirement may be granted by the Member States in the event of urgent unforeseeable circumstances ... or urgent operational needs.

Commenter 3: TAP Air Portugal – José de Almeida – 22/11/2023

Comment # 3

Concerning PAD 23-120, I would like to point that we operate EASA.A.110 LEAP-1A engines as fitted to Type EASA.A.064 AIRBUS A318-A319-A320-A321 A/C.

EASA.A.064 MRB follows a reliability centred approach, e.g. we are obliged to conduct Engine Condition Monitoring (ECM) and to that end Engine Performance Reports (both and take-off and cruise) are sent to the Engine Type Certificate Holder, precisely to assess the engine degradation, vibrations included.

We note that the SB LEAP-1A-72-00-0504-01A-930A-D Issue 002 requires each operator to either

- a) consult CFM Engine Trend data monitoring site or b
- b) get the data from A/C ACMS reports to evaluate NSV.

We ask the PAD to be revised as to set to the Engine Design Approval Holder's responsibility the usage of the data made available to conduct ECM to also evaluate NSV and then to request the pertinent operator to take required actions, in the scope of the ECM .

It makes no sense to transfer the engine trend data to the Engine Design Approval Holder and not having the Engine Design Approval Holder to act upon the data and remit to the operator the calculation. Operators should only be responsible for calculating per SB b) method if not submitting at least 64/125 data points.

EASA response:

Comment not agreed: Regulation (EU) 1321/2014 identifies who is eventually responsible for the continued airworthiness of an aeroplane; an AD cannot allocate responsibilities in a way which is not consistent with that regulation. Operators may have agreements with other entities (e.g., under a commercial contract) but that does not reallocate its responsibilities identified above.

Besides, as noted, the AD allows using CFM support to monitor the NSV, but does not require that action; alternative procedures, which can be fully accomplished by the operator, are available and acceptable for compliance with the AD requirements.

