COMMENT RESPONSE DOCUMENT

EASA PAD No. 17-054

[Published on 26 April 2017 and officially closed for comments on 24 May 2017]

Commenter 1: ASL Airlines Belgium – Pierre-Jean Arenas – 04/05/2017

Comment # 1

Our Fleet: 20ea Boeing B737-400 operating with CFM56-3 under a Low Utilisation (below 150FH per months).

A) CFM56-3 SB 72-1169:

Para 1.A. Effectivity:

Applicable for aircraft operating under "a list of country in tropical area" AND operating at a low utilization rate.

Comments: the wording AND can be confusing. By strictly understanding this wording we are not affected as we are not flying under tropical areas (but operating below 150FH/MO).

Please check also with CFM international comment on FAA NPRM 2017-04523 comment:

"CFM would like to propose that this AD apply to operators conducting flight in tropical regions of the world rather than adopt fleet-wide applicability. CFM's position is that carriers most susceptible to corrosion are those operating in wet or tropical regions at a low to moderate utilization. CFM notes successful experience with regional applicable service bulletins which recommend action based on environmental influences."

B) CFM56-3 SB 72-1169 and PAD 17-054

Para 1.A. Effectivity // Applicability:

- EASA PAD does not follow effectivity as described into SB 72-1169 as per description of the regional area and utilization and therefore EASA PAD may lead to the interpretation that all engines are effectives while CFM SB 72-1169 specifies only certain type of operation (ref point 1/).

- EASA PAD precises the affected P/N of the compressor front stator case, SB CFM 72-1169 not.

- PAD make an exception to the applicability for engine that have been repaired iaw ESM 72-031-01 repair 031, but without any revision number of the ESM and/or repair 031. There, this item will conduct a lot of confusion for operators. This repair 031 has been developed recently, so it is not expected to have engines not effective with this PAD.

Comments: we would appreciate from CFMI airworthiness team to review with EASA the content of SB 72-1169 and PAD 17-054 to have a better clarity on action and effectivity.

C) CFM56-3 SB 72-1169

Para 3.B. Acc. instruc. VSV travel force check:

The check asked does not give any other alternate procedure and is difficult to develop by our engineering company.

There is a high risk to fail the test or to be just in limits and compliance time as described in PAD could trigger a high risk of removal, especially for engines that have a high TSLSV.

Comments: we request CFM/EASA to review interval time or to review the conditions of inspection.

If the comment is not accepted we request CFMI to review warranty case or to propose alternative solutions that are acceptable for airline operations.

FAA NPRM estimates at 460 engines under the FAA registry, it can be considered as a big engine fleet but which only has one dual engine loss of thrust control. We estimate that CFMI has to review the impact of those inspections and the risk of higher engine removal and shop visit

EASA response:

1A) Comment noted. Not at AD level. See also EASA answer to Comment 1B
1B) Comment not agreed. EASA confirm that the area of operation and utilization rate are not driving factors in defining the applicability of the AD: operators may experience high moisture environments outside of the specified tropical zone that is described in CFM SB CFM56-3 S/B 72-1169; corrosion could occur in other climate zones, and would be a function of hours as well as utilization. Operators that are outside of the specified tropical zone have experienced restricted VSV movement events.
To be noted that, in case of inconsistencies between the SB and the AD, the AD prevail.
EASA also confirm that repair 031 is terminating action for the repetitive inspection, whichever the ESM revision.
1C) Comment noted. For the time being, no alternative procedures are available, and data does not support an extension of inspection interval.

No changes have been made to the Final AD in response to this comment

Commenter 2: MTU Maintenance Canada Ltd. – Milan V. Pavlovic – 05/05/2017

Comment # 2

After internal MTU discussion we would like to bring to your attention the following issues which should be discussed with EASA office before the EASA AD is released (ref. EASA PAD No.: 17-054). We brought the same issues to the FAA office also.

A) Proposed Applicability:

Should state also that this is not applicable to Titanium stator cases configuration (pre CFM56-3 SB 72-366 and 72-383) as they are not applicable to ESM 72-32-01 Repair 031 so therefore would not be marked with RP031.

B) Proposed Inspection:

This Inspection do not specify where to be accomplished, so could be on the wing but also in the shop but must be within the 12 months after the effective date of proposed AD. So, when in the shop and the engine is disassembled to modular level the force check of the VSV system is performed iaw ESM 72-32-00 Assembly specifically subtask 72-32-42-053 item V (10) and subtask 72-32-00-420-058 item (17) or alternate procedure subtask 72-32-00-420-059 item V.A. (3) and subtask 72-32-00-420-062 item (10). The ESM 72-32-00 force limitation is noted as 100 lbs. If the check is performed per ESM 72-32-00 Assembly at the module level and the observed force is less than 75 lbs per stage is this considered an acceptable method of check to satisfy the AD requirements?

C) Proposed AD Terminating action:

Is to be in compliance with ESM 72-32-01 Repair 031. This statement is interpreted as incorporation of ESM 72-32-01 Repair 031 is the AD mandated action and therefore the only acceptable action to satisfy the AD compliance requirements. Would replacement of the stator case assembly with a serviceable stator case assembly that has not had ESM 72-32-01 repair 031 performed be considered an acceptable alternate action providing the force check is performed on the replacement stator case assembly and is found to be less than 75 lbs in each stage? It is understood that use of stator cases that have not been repaired per ESM 72-32-01 Repair 031 would still be subject to the repetitive checks which have not been specified?

If use of replacement stator cases that are not marked RP031 is deemed an acceptable action?

EASA response:

2A) Comment not agreed. Even if the inspections are actually required on some engines only (i.e., those equipped with steel compressor front stator cases as identified in the "Required Action(s) and Compliance Time(s)" section), the AD includes requirements applicable to all engines (e.g., condition for installation of an affected compressor front stator case on any engine). The AD has been modified to clarify this subject.

2B) Comment agreed. The AD has been modified accordingly.

2C) Comment noted: replacing a stator case assembly with a stator case assembly not repaired per ESM repair 031 is allowed, but does not constitute terminating action for the repetitive inspection required by the AD. If, during any VSV travel check, the load required to move any actuation ring exceeds 100 lbs, the Repair 031 must be accomplished. The AD has been modified to clarify this subject.

Commenter 3: Boeing Southern California Engineering Design Center – Sheila Montgomery – 12/05/2017

Comment # 3

A) Boeing agrees that the confined and limited regions and operational rates listed in CFM SB 73-1169 Rev 1 satisfies and mitigates the unsafe ondition. The EASA proposed corrective action to effect all engines unnecessarily burdens operators not flying in the noted climate zones adds no enhancement to the safety of the fleet. Boeing requires adoption of the language used in the CFM International Service Bulletin which address the safety risk posed by tropical rainforest climate zones of operation.

B) AD requires immediate HPC case repair prior to further flight for engines exhibiting pull check forces greater than 100 lbs. We recommend that a ferry flight be allowed if take-off rated thrust can be achieved during a ground run and the sister engine is within SB VSV force limits. Boeing requires adoption of the language used in the CFM International Service Bulletin which address the factor related to ferry flight.

EASA response:

3A) Comment not agreed. See EASA answer to comment 1B

3B) Comment not agreed. For ferry flights, EASA prefer a case-by-case management, by means of AMOC and/or permit to fly.
No changes have been made to the Final AD in response to this comment

Commenter 4: Atlantic Airlines Ltd – Dan Wood – 24/05/2017

Comment # 4

I am submitting a comment on the subject PAD on behalf of Atlantic Airlines Ltd, UK, a B737-300/400 operator in Europe.

Ref /A/ CFMI SB 72-1169 Revision 1 Paragraph 1.A “Effectivity”

Ref /B/ PAD No. 17-054 Page 1 paragraph “Applicability”

PAD 17-054 proposes to mandate inspections of the VSV system on the CFM56-3 engines. In accordance with Ref /A/ the affected engines are those that have operated more than 50% of their life in a list of countries that typically have a humid climate, and have low utilisation.

Ref /B/ does not contain a reference to these specific criteria. It only states “all serial numbers, except those that have been repaired… Repair 031”

The two statements are in conflict and could create confusion.

Is it the intention of EASA to supersede the applicability of the CFMI SB, thereby making all engine serial numbers effective regardless of history of operation? Please can the AD include revised wording to clarify the applicability given in Ref /B/ in relation to the more limited applicability given in Ref /A/. i.e. if the country specific / utilisation specific applicability given in Ref /A/ is not being adopted, please can this be clearly identified in the AD.
EASA response: ***Comment not agreed. See EASA answer to comment 1B*** ***No changes have been made to the Final AD in response to this comment***