


EASA	COMMENT RESPONSE DOCUMENT
	<p style="text-align: center;">EASA PAD No. 12-115 [Published on 30 August 2012 and officially closed for comments on 27 September 2012]</p>

Commenter 1: Lufthansa Technik AG – Markus Kleinhans – Fri 31/08/2012 08:35

Comment # 1

To whom it may concern

Proposed AD 12-115 provides details about required actions and compliance times. However, in item (2), further clarification is required regarding engines having a qualifying shop-visit when the AD becomes effective.

Does the sentence "... not later than during the first qualifying shop-visit after the effective date of this AD ..." mean that an engine which is having a qualified shop-visit at the time the AD becomes effective must be modified in accordance with SB 72-0564 or 72-0879 at that shop-visit? Or does it mean that only those engines which are inducted into the shop for a qualifying shop-visit after the effective date of the AD must be modified per SB 72-0564 or 72-0879?

EASA response:

Only those engines which are entering into the shop for a qualifying shop-visit after the effective date of the AD must be modified. Text of the AD clarified.

Commenter 2: TNT Airways S.A. – Pierre-Jean Arenas – Fri 31/08/2012 11:24

Comment # 2

Dear Miss, dear Sir,

Further a review of your proposed airworthiness directive PAD 12-115, I will propose a remark regarding text which can lead to confusion and misunderstanding with high costs effects :

(1) For CFM56-3 engines, not later than during the first qualifying engine shop-visit after 01 March 2013, replace the AGB with an AGB P/N 335- 300-112-0 in accordance with the instructions of CFM56-3 S/B 72-1129.

The text proposes to "replace" the AGB with an AGB P/N 335-300-112-0, or in accordance with CFM SB 72-1129, in fact you can also modify the P/N 335-300-110-0 in order to upgrade to P/N 335-300-112-0 as shown in §7 :

(7)

Re-identification of the Old AGB assembly 335-300-110-0 to the new Part Number 335-300-112-0 .

NOTE: This step concerns the rework of old AGB assembly 335-300-110-0 to the new AGB assembly 335-300-112-0 .

(a) Re-identify the old AGB assembly 335-300-110-0 to the new AGB assembly 335-300-112-0 . Refer to SPM, ATA 70-10-12, Vibro-Peen Marking as follows:

1 Score out the old Part Number of the old AGB assembly 335-300-110-0 on the AGB assembly identification plate. Refer to [figure figure 1461 sheet 1 sheet 1](#) , sheet 1 of 2.

2 Mark the new Part Number of the new AGB assembly 335-300-112-0 and the Service Bulletin Number on the AGB assembly Identification plate.

I would propose to modify PAD text by replace to "replace or upgrade the AGB [...]"

This misinterpretation of the text could possibly lead to high cost for an airline (ratio 25).

As TNT is not equipped with CFM56-7, I'm not in measure to make any comments.

EASA response:

Partially agreed. The mandated AGB part numbers can be bought as new AGBs or can be obtained by modifying old AGBs in compliance with the CFM Service Bulletins in reference.

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

Commenter 3: ST Aerospace Engines Pte Ltd – Chia Yoon Fee – Tue 11/09/2012 02:51

Comment # 3

Dear Sir/Mdm,

I would like to enquire for the EASA PAD no: 12-115, may i know when will be the estimated Final AD issue date for this AD?

We are currently liaising with CFMI on some issues regarding SB 72-1129, thus i would like to know the estimated Final AD issue date.

Thank you very much and hope to hear from you soon.

Thanks and Best Regards,

EASA response:

8 October 2012

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

Commenter 4: neos – Emiliano Ciani – Wed 19/09/2012 12:32**Comment # 4**

Dear all,

NEOS has reviewed the PAD and we have some comments on the AD.

1) This item has been heavily discussed during the last B737 Boeing/CFM WTT in Charleston in May 2012 when CFM informed they were discussing with authorities the possibility to issue an AD on this matter. The discussion was really hot cause a lot of the present operators didn't recognized the safety issue behind the modification to be mandate when actions taken on the maintenance best practices have already reduced the number of events. We had the impression that the CFM decision was more driven by business reasons (CFM56-7B SB 72-0564 has been introduced by less than 30% of operators and the other involved modifications (SB 72-0689 & 72- 0652) maybe with a less percentage). than by a real safety issue (just refer to SB 72-0879 that is a collection of the above mentioned SB with category 6). Larger operators like Ryanair, American Airlines, Continental, etc.. blessed a lot the CFM decision cause this action will cause the increase of the cost of ownership but is not proportionally increasing either the level of safety and NEOS concur with this evaluation. NEOS honestly believes that the formal maintenance best practice actions as per PAD required actions item 3) are enough to reduce/stop the number of events on this matter. The modifications mandated can be kept in the AD as Terminating Actions/AMOC to the best practice without an expiration (operator voluntary action). In this way is left to operators the decision on how to invest on this item or with a repetitive maintenance actions.

2) As per required actions, affected AGBs modification is required " not later than during the first qualifying engine shop visit" and there are 2 different referencing/triggering date for compliance for -3 (1st march 2013) and -7B (AD effectivity date - not known yet) models, why have been given two different compliance time for the 2 engine models?! It is more simple to manage the compliance with a unique triggering date?!

3) Considering the effectivity date of the AD as triggering date(-7B), if at such date the operator has engine undergoing a qualifying shop visit and this shop visit is at an advanced stage (re-assembly), as far as per our understanding of the wording "during the first qualifying shop visit" we have to introduce this AD at such shop visit and the deferral at the subsequent one is not possible. This mandating action can cause a delay into redelivery of the engine increasing of the cost of the undergoing shop visit where the de-assembly of the AGB was not required/done. We need to have the wording " not later than during the first qualifying engine shop visit" be clarified in the meaning possibly modifying it into " not later than the first qualifying shop visit" that immediately highlights the NEXT shop visit.

I'll be available for any additional discussion of the comments you'd like to have.

EASA response:

- 1) In service experience has shown that despite “best practice” actions the risk of the problem re-occurring still remains because the design is not tolerant to a human error.**
- 2) Compliance dates have been established by considering the risk and the availability of the necessary hardware for the modification.**
- 3) Only those engines which are entering into the shop for a qualifying shop-visit after the effective date of the AD must be modified. Text of the AD clarified.**

Commenter 5: The Boeing Company – Hicks, Pamela J for D. A. Biggs – Fri 21/09/2012 17:09

Comment # 5

Boeing has reviewed the subject NPRM and provides the enclosed comments. Enclosure to B-H210-12-00736

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The PAD includes a reference to CFM International Service Bulletin

What does the

CFM56-7B SIB 72-0564 Revision 00. This revision was not approved
commenter request? for 14 CFR Part 25 and is not valid for incorporation. The PAD should
identify CFM International Service Bulletin CFM56-7B 72-0564

Revision 01

CFM International Service Bulletin CFM56-7B 72-0564 Revision 00

justified? was not approved for 14 CFR Part 25.

Ref. Publications section of the PAD

EASA response:**Agreed. Text of the AD amended.****Commenter 6: JAL Engineering Co., Ltd. – SATOSHI KOTAKI – Thu 27/09/2012 05:03****Comment # 6**

I am Satoshi Kotaki, powerplant engineer in JAL Engineering Co., Ltd., subsidiary of Japan Airlines (JAL). Recently, JAL received EASA PAD No. 12-115, dated 30 August 2012, CFM56-3 and -7B Engine Accessory Gearbox (AGB) Hand-Cranking Pad Modification.

Regarding the modification opportunity which the PAD mandates, JAL would like to ask EASA's opinion whether JAL's understanding is correct.

So could EASA kindly review JAL's question below and advise?

[Condition]

In the "Required Action(s) and Compliance Time(s)" section of the PAD No. 12-115, CFM56-3 and -7B engines shall be modified per CFM56-3 SB 72-1129 or CFM56-7B SB 72-0564 or 72-0879 respectively, not later than during the first qualifying engine shop visit after 01 March 2013 (for CFM56-3) or after the effective date of the AD (for CFM56-7B).

In the section, it is stated that a qualifying engine shop visit is a visit which involves the removal of at least one of the engine major modules: fan, core engine, or low pressure turbine.

Above definition refers to major modules but does not refer to the removal of the accessory gearbox (AGB) module. Since the AGB module can be removed from an assembled engine, so it is possible to remove and install the AGB module without removing the engine major modules.

Also, 737 Aircraft Maintenance Manual (AMM) provides procedures to remove/install the AGB module on-wing.

[Questions to EASA]

Q1) Even after 01 March 2013 (for CFM56-3) or after the effective date of the AD (for CFM56-7B), when an engine with a pre-SB configuration AGB module comes to shop in order to do a maintenance of the AGB module, and the AGB module is removed/installed without removing at least one of the three major modules, from the AD definition JAL understands that it is "not" considered as a qualifying engine shop visit so that it is not mandatory to incorporate the CFM56-3 SB 72-1129, CFM56-7B SB 72-0564 or 72-0879, respectively. Please review and advise if JAL's understanding is correct.

Q2) Even after 01 March 2013 (for CFM56-3) or after the effective date of the AD (for CFM56-7B), when an AGB module is removed/installed on-wing in accordance with applicable AMM, it is not mandatory to install an AD-compliant AGB unless the engine has previously been modified per the CFM56-3 SB 72-1129, CFM56-7B SB

72-0564 or 72-0879, respectively.
Please review and advise if JAL's understanding is correct.

EASA's advice to JAL is highly appreciated.

EASA response:

Q1) JAL understanding is correct. A qualifying engine shop visit is only a visit which involves the removal of at least one of the engine major modules: fan, core engine, or low pressure turbine.

Q2) JAL understanding is correct. Engines which comply with the AD must be kept compliant.

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

Commenter 7: American Airlines – McNally, LeAnn for John Beavers – September 5, 2012

Comment # 7

To Whom It May Concern:

American Airlines has reviewed the Proposed Airworthiness Directive which would require the implementation of CFM56-7B Service Bulletin 72-0564 or Service Bulletin 72-0879 regarding the modification of the Accessory Gearbox (AGB) hand-cranking pad. This modification would prevent engine oil loss and an engine failure which could lead to an emergency landing.

American Airlines agrees with the intent of the Proposed Airworthiness Directive, but not with the need for this Airworthiness Directive. The implementation of PAD No. 12-115, in accordance with SB 72-0564 or 72-0879, is more complex than necessary. EASA touched briefly upon the two primary factors for this issue. The first factor is the configuration of the hand-cranking pad and the second factor is the maintenance procedure associated with securing the hand-cranking pad. Existing EASA and FAA maintenance requirements, if properly followed, will address and eliminate the need for this additional regulation.

American Airlines suggests the following maintenance procedure and modification to address the occurrence of a loose or missing hand-cranking pad.

Hand-Cranking Modification

Replace the existing hand-cranking cover bolts AS3237-12, double hexagon extended washer head with bolts that have the drilled heads (J644P11B, double hexagon extended washer head, drilled). Discard the existing O-rings and replace with new. Torque the four (4) bolts. Secure the four (4) bolts by installing a lock wire / safety cable. Reference per SPM 70-70-12.

Maintenance Procedure

Implement procedures on related task cards to preclude identical errors being applied to multiple engine significant systems. Specifically, dual maintenance tasks accomplishment on the hand-cranking

pad is similar to tasks associated with servicing accessory gearbox driven components. Similar measures should be incorporated with any maintenance task requiring the removal of the hand-cranking pad. EASA and the FAA have both provided detailed guidance to avoid dual maintenance on significant systems by same personnel during a single maintenance visit.

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Using operational assessment data based upon in-service experience shows that the implementation of these two recommendations will eliminate failures and malfunctions which will successfully achieve a failure rate that is compatible with the specified safety target for both ETOPS and NON-ETOPS aircraft. American Airlines requests EASA consider the implementation of the Maintenance Procedure and HandCranking Modification as detailed above as a replacement for the Proposed Airworthiness Directive No. 12-115. This recommended action will address the potential unsafe condition associated with engine oil loss due to maintenance tasks linked to the removal of the AGB hand-cranking cover. American Airlines appreciate EASA providing the opportunity to comment on this proposed airworthiness directive.

EASA response:

Disagreed. EASA has verified that the engine modification designed by CFM and mandated by the proposed AD is addressing the potential unsafe condition. In accordance with EASA "Continuing airworthiness of type design (CAP)" procedure PR.CAP.00001-002, paragraph "2. EASA RESPONSIBILITIES": "It is recommended that every effort should be made to define actions that terminate repetitive inspections, tests or limitations." No changes have been made to the Final AD in response to this comment.

Commenter 8: Alaska Airlines – Kevin Collins – Fri 28/09/2012 06:43

Comment # 8

I am interested in responding and being on record for response to PAD 12-115.

I represent Alaska Airlines, a US Operator of 91 each 737-700/-800/-900/-900ER and 30 each 737-400 aircraft, based in Seattle, Washington. I would like to comment on EASA PAD No. 12-115 and CFMI Service Bulletin 72-0564 as this directly affects the world fleet and my fleet as well.

Over the years from entry into service of the 737NG aircraft there have been a number of incidents of oil loss from the HCP Cover following improper maintenance.

Installation of the new Hand Crank Pad Cover per SB 72-0564 will prevent oil loss from the engine following improper maintenance. Incidents involving operators not properly securing the HCP Cover have resulted in some situations of immediate oil loss from the engine, however most are found during required idle-power leak test.

Addition of the dynamic seal as part of the HCP will prevent immediate loss of oil from the engine. Knowing this, observance for fluid leaks during leak test will not confirm improperly installed HCP Covers, potentially masking this condition.

Also following close out of subject maintenance, left-hand Fan Cowl typically may not be opened again for more than a week of regular operation. Improperly secured HCP Cover or omission of the HCP Cover is not a certified nor tested configuration for operation as per CFMI. It is unknown how quickly a dynamic seal will become ineffective in retaining all engine oil. It is anticipated that operators improperly installing the HCP Cover may not learn of this for several days following dozens of flights in an uncertified configuration.

This new HCP will prevent the immediate oil loss during leak test and subsequent take-off and flight, but may simply cause the problem to occur on a later flight.

AS believes strict adherence to a robust maintenance program is the most optimum way to prevent occurrences. Dual sets of eyes checking proper installation of the current-style HCP Cover including a leak test is the best way to minimize risk of incident. AS is also concerned of the complexity of the extensive SB will introduce other potential issues into the system, as well as relaxed reliance on leak-test and secondary checks.

Let me know if any questions or clarification is required.

EASA response:

Partially agreed. Improperly secured or omission of the Hand Cranking Pad (HCP) cover is not a certified configuration for operation. Nevertheless, the presence of the dynamic seal should limit the oil leak (if any) and allow correction before causing an engine in flight shutdown. Aircraft Maintenance Manual tasks which include the removal and re-installation of the HCP cover should be completely performed. Compliance with the AD does not relax the requirement for a leak test after re-installation of the HCP cover.

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