


<b>EASA</b>	<b>COMMENT RESPONSE DOCUMENT</b>
	<b>EASA PAD No. 10-002</b> <b>[Published on 05 January 2010 and officially closed for comments on 02 February 2010]</b>

**Commenter 1 : MNG Airlines – Yavuz Selim Ates – 06/01/2010**

**Comment # 1**

We well received the PAD 10-002 thank you very much for your sharing with us for our comments.

Based on our experience on A300B4 operation since 1998 we did not have any defect on our neither A300B4 nor A300-600 fleet.

There are around 100 A300B4 still in service and more than 300 each A300-600 still in service and also there is no finding reported for both type of aircraft in over the world.

In addition to that findings reported for A310 type of aircraft and its design is different as stated in the reason section of PAD so no need to replace existing bushing for A300 and A300-600.

Since bearing replacement is not mandated by the manufacturer and also due to cost effectiveness of the bushing replacement, we as an operator kindly request to remove A300 and A300-600 type of aircraft from the applicability.

**EASA response:**

**Disagreement.**

**A300 and A300-600 aircraft models will remain part of the Airworthiness Directive applicability.**

**The PAD reason paragraph clearly states that ‘the [A300 / A300-600 and A300-600ST] differences in MLG rib 5 design compared to A310 aeroplanes does not allow the exclusion of the possibility of cracks’.**

**This statement means that, even if the rib 5 forward lug / MLG assembly design can be different between A300 / A310 / A300-600 aircraft models, the same corrosion / crack initiation condition(s) can occur.**

**This statement is the conclusion of the design review made by the aircraft manufacturer.**

**From that point, the unsafe situation/condition, observed on A310 aircraft, can develop on the rest of the fleet, and, then, needs to be addressed.**

**The design solution restoring the integrity of the rib 5 forward lug is therefore mandated for the whole fleet.**

**NB : Operator should balance the cost of this modification with the cost of the Rib 5 exchange, as, in this area, the repair solutions are extremely limited.**

**Commenter 2: ACT Airlines – Fatih Bayram – 11/01/2010****Comment # 2**

Since there is no defect found on A300B4 fleet so far and its design is different to A310s on which defect reported as stated in both your PAD and Airbus SBs, I'd like to emphasize that bushing replacement shall be optional on A300B4s. Under this circumstance, I kindly ask you to remove A300B4 type from the applicability.

**EASA response:**

**Disagreement. A300 aircraft model will remain part of the Airworthiness Directive applicability.**

**The PAD reason paragraph clearly states that 'the [A300 / A300-600 and A300-600ST] differences in MLG rib 5 design compared to A310 aeroplanes does not allow the exclusion of the possibility of cracks'.**

**This statement means that, even if the rib 5 forward lug / MLG assembly design can be different between A300 / A310 / A300-600 aircraft models, the same corrosion / crack initiation condition(s) can occur.**

**This statement is the conclusion of the design review made by the aircraft manufacturer.**

**From that point, the unsafe situation/condition, observed on A310 aircraft, can develop on the rest of the fleet, and, then, needs to be addressed. The design solution restoring the integrity of the rib 5 forward lug is therefore mandated for the whole fleet.**

**Commenter 3: Lufthansa Technik AG – Thomas Kehse – 01/02/2010****Comment # 3**

Lufthansa Technik would like to comment on the required actions and compliance times given in EASA PAD No. 10-002.

With regard to A300-600 aircraft, LHT would like to point out that cracking of the MLG rib 5 aft bearing forward lugs has not yet occurred. A special detailed inspection has not yet been published for these aircraft. LHT suggests enhancing the inspection program before introducing a mandatory modification without proven benefit.

On A310 aircraft, the ultrasonic inspection with a repeat interval of 825 FC has been found effective to detect corrosion at an early stage.

The cracking of the rib lugs is caused by corrosion and cyclic loading. Whilst cyclic loading of the MLG attachment is inevitable, corrosion can be detected and controlled. The proposed modification introduces no changes to the present design principle. Increased interference fit bushes will introduce higher pre-stresses which will affect the fatigue characteristics. The surface of the lug at the interface to the bush will most likely remain susceptible to corrosion.

LHT is not confident that the modification addresses the root cause of the MLG rib cracking. Modification of all aircraft regardless of age and accumulated flight cycles, as proposed in PAD 10-002, will leave the situation uncontrolled. In case of cracks after modification, the most likely repair option will be rib replacement. This repair would put a significant economic burden on operators.

The proposed compliance limit for the modification of 30 months after AD effective date will have a large impact on the scheduled maintenance of the world fleet. A shortage of special tooling is likely to occur. On most aircraft, the required MLG removal will be out of phase with scheduled MLG overhaul.

If EASA and Airbus consider a mandatory modification as the only option, LHT would highly appreciate a technically substantiated threshold. This is especially true as no dedicated inspections of the MLG aft bearing forward lug are required on A300/A300-600/A310 aircraft which have accumulated less than 12,000 FC.

A grace period should be introduced to allow operators to reach the next scheduled MLG removal in accordance with their approved maintenance program.

However, LHT suggests the development of a refined inspection program instead of a mandatory modification. An applicable and effective program should be based on repetitive special detailed inspections without MLG removal. At the opportunity of MLG removal, additional inspections with or without bush removal should be considered.

**EASA response:**

*The cracked and few others corroded lugs findings have indicated that the potential root cause could be moisture ingress due to bush rotation and subsequent sealant damage.*

*The investigation has revealed that the aircraft having embodied this 'interference bushing' solution, already existing as optional/recommended modification, did not suffer the equivalent situation and lug integrity has been preserved.*

*The 'high interference bushing' is a certified design, which therefore has been evaluated.*

*The compliance time proposed has been justified taking into account the potential impacted fleet, the current findings, and the criticality of the failure case.*

*No grace period will be established as compliance is given in calendar time.*

*The mandated inspection programme will be updated with the option to perform NDT inspections as an alternative to the current DVI technique. The NDT inspection will enable corrosion / damage to be detected earlier, increasing the prospect for lug repair. However it has been evaluated that a repetitive inspection program could not provide enough guarantees to avoid a crack development, hence modification is necessary as a terminating action.*

*NB : Operator should balance the cost of this modification with the cost of the Rib 5 exchange, as, in this area, the repair solutions are extremely limited.*

**Note:**

*When writing the EASA response, the responder should express first whether EASA agrees, partially agrees, or disagrees with the submitted comment /change proposal and should explain the grounds of the response.*

*[e.g. “we disagree. Vibration trend monitoring is successful in detecting cracked HPT seals, /... / and is the most practical way to prevent an unsafe condition due to cracked HPT seals. The AD remains unchanged.” or “we agree. We have added the aeroplane model to the applicability”]*