



## COMMENT RESPONSE DOCUMENT

EASA PAD No. 18-099

[Published on 19 July 2018 and officially closed for comments on 16 August 2018]

**Commenter 1: Lufthansa Technik AG – Peter Brudler – 09/08/2018**

### Comment # 1

Please find hereafter DLH/LHT comments for PAD 18-099:

- A. General statement: on various occasion the PAD mentions the sealing ring which is the affected part and provides information in which HP/IP structure this P/N is built in. On different locations “engine” is mentioned. In order to make the PAD more clear and precise, the PAD should refer only to the HP/IP Structure P/N as this P/N is the leading one for mandating Actions to be taken or not (e.g. part installation) and the one that is life time controlled by the operator.
- B. Please incorporate an information in the AD that SB 72-AJ868 does not supersede or change the requirements of the lifing of the end adapters of the HP/IP Support as currently defined in TLM section 05-20-01 and 05-30-01, as applicable.
- C. Groups: if engines get 72-J395 embodied in service (as stated for group 3) the engine is no longer affected, therefore the engine would automatically go from group 1 or 2 to group 3. Please clearly state this in the AD, and crosscheck all references to groups in the AD accordingly if this logic is covered or adjust description of group 3. Please also add here SB 72-J589.
- D. Please correct the statement below due to planned modification: “Since that AD was issued, RR published the NMSB, to provide instructions to replace the affected sealing rings on all pre-mod/SB 72-J395 engines having an affected part installed.”
- E. Requirement (1): under worst case scenario an engine replacement is mandated within 100FC. As current spare situation is very limited, can EASA and RR ensure spare availability for the world fleet or do we have to take into account to ground A/C following the mandated replacement of an engine?
- F. Please correct (2) to the statement below, as otherwise module and/or part changes between engines in pre and post mod standard would be prohibited: For Group 1 and Group 2 engines: Modification of an engines HP/IP Support Structure in accordance with the instructions of RR SB RB.211-72-J395 or 72-J589 constitutes terminating action for the life limitation as required by this AD for that engine. This automatically transfers the engine in group 3.
- G. Requirement (4) replace the statement by:



"If ever an HP/IP Support Assembly received modification 72-J395 or 72-J589 (terminating action) it is not allowed to install an affected P/N on that HP/IP Support Structure.

It is allowed to install an HP/IP structure having the affected part installed on a Group 3 engine as long as the requirements for group 1 and 2 are fulfilled. In this case the engine will be handled as a Group 1 engine unless otherwise stated in the Appendix of the NMSB"

- H. Please consider a statement in (2) and for "groups" to cover also planned modification SB 72-J589 (rework of existing structures to 72-J395's design), because otherwise the AD had to be revised again in future to incorporate latest final fix. RR stated that this SB will be provided in September 2018!
- I. Please correct (5) to include also engines having terminating action embodied: From the effective date of this AD, except as required by paragraph (4) of this AD, it is allowed to install a Group 1 or Group 2 engine on any aeroplane, provided the affected part installed on that engine is a serviceable part as defined in this AD or the engine is a group 3 engine.
- J. A statement is missing for parts transfer between Group 1 and Group 2 engines: how can the remaining life of the seal rings be calculated?
- K. Please insert an information that NMSB 72-J934 can be used for initiating of life time control, if no other information can be obtained from shop documentation.

From our point of view it could be worth releasing a 2nd PAD due to amount of comments provided.

**EASA response:**

- A. Comment understood, but not agreed. The new introduced life limit is on the sealing ring, not on the HP/IP support structure, which already has one of its own.**
- B. Comment not agreed. This should be obvious, as the AD does not refer to any change to the life limit of that component. Typically, an AD specifies what is required, not what is NOT required (or changed). See also EASA answer to point A. above.**
- C. Comment partially agreed. The determination whether an engine is Group 1, 2 or 3 must be made not later than the effective date of the AD. Modification of that engine afterwards determines which requirements remain. However, paragraph (2) of the Final AD has been amended to clarify the change from Group 1 or 2 into Group 3 and the consequence regarding paragraph (5) – which no longer applies to a post-mod (Group 3) engine. Adding reference to SB 72-J589 is deemed inappropriate, as that mod/SB is not yet approved at the time of AD issuance.**
- D. Comment not agreed. All pre-mod/SB 72-J395 engines (see Definition) have an affected part installed.**
- E. Comment not agreed. Note the compliance time specifies 'whichever occurs later'. Rolls-Royce confirms that very few engines will be anywhere close to the limits specified in Table 1 (see also Note 1) of the AD, while the 100 FC after AD effective date is in addition to that limit.**
- F. Comment partially agreed. See EASA answer to point C. above.**
- G. Comment not agreed. The AD applies to engines, not to HP/IP structures. The "affected parts" as defined in the AD are sealing rings (P/N FW64487) fitted to pre-mod 72-J395 structures; once post-mod (i.e. Group 3 engine), P/N KH68296 sealing rings are installed.**



*For the record, legally, an EASA AD cannot require (or prohibit) actions on components, separate from the product on which the part is (to be) installed. The AD – see paragraph (4) – therefore prohibits installation of an affected part on an engine, as soon as that engine is in post-mod status. De-modification of a Group 3 engine – by installing a pre-mod HP/IP support structure (with sealing rings P/N FW64487 installed), as the commenter suggests – into a Group 1 or Group 2 engine is an integral part of that prohibition. See also EASA answer to point C. above.*

- H. Comment noted. See EASA answer to point C. above. Once SB 72-J589 is approved and available, revising the AD will be considered, but may not be necessary, provided the SB is also approved as an AMOC to the AD. The EASA AMOC approval would then contain the conditions and post-mod prohibitions.*
- I. Comment not agreed. This paragraph specifies conditions that allow installation of group 1 and group 2 engines. Consequently, by default, this paragraph is not relevant for Group 3 engines. See also EASA answer to point C. above.*
- J. Comment understood, but not agreed. Moving a structure (with its sealing rings) from a Group 1 engine to a Group 2 engine would effectively allow more time on wing for those sealing rings, since the allowed life of that part on a Group 2 engine (see Table 1 of the AD) is higher. For example, a structure that completed 1,400 cycles on a Group 1 engine (50% of its life on that engine) could be moved to a Group 2 engine and remain in service for another 2,200 cycles on that engine. Conversely, if a structure (with its sealing rings) had completed 2,800 cycles on a Group 2 engine, it could not be moved to a Group 1 engine, unless its sealing rings were removed and new ones fitted. No ‘calculation’ is necessary, only a determination of the remaining life.*

*For the record: The accumulated life (since new, i.e. first installation on an engine) of each affected part – currently installed – should first be determined (on or before the effective date of the AD), using the information specified in Note 1 of the AD, leading to removal from service as required by the AD, i.e installation of a new affected part on the engine. The AD requirements imply that each subsequent (new) part must be tracked – which would allow part transfer from one engine to another – to determine the time of removal from service.*

- K. Comment not agreed. The NMSB already contains reference to SB RB.211-72-J934. Consequently, there is no need to include that reference into the AD.*

*No changes have been made to the Final AD in response to points A, B, D, E, G, H, I, J and K of this comment.*

