

## COMMENT RESPONSE DOCUMENT

EASA PAD No. 21-072

[Published on 17 May 2021 and officially closed for comments on 31 May 2021]

### Commenter 1: Air China - Sun Yuyang – 18/05/2021

#### Comment # 1

- A. If possible, pls give credit for engines which has already in shop or post shop visit, which has already had affected parts inspected in accordance with paragraph (1).
- B. Pls give definition of "piece-part" in AD, especially paragraph (1) is needed.
- C. Pls define more clearly "qualified shop visit", given PN of the definitions to avoid further occurrence of the same missed inspection.

#### EASA response:

- A. Comment not agreed. The AD already gives credit by stating “Required as indicated, unless accomplished previously”. This is only valid if the actions were as required, using the instructions specified in the AD.**
- B. Comment not agreed. As indicated in the Final AD, Rolls-Royce plans to publish appropriate documentation to ensure that the determination of when to accomplish any focused critical parts inspection is unambiguous and adequate to meet the intent of opportunistic inspections as relied upon in the service management plan for engine critical parts. As of today, no clear definition of “piece-part” has been agreed upon. In the meantime and when facing situations whereby this determination remains ambiguous, operators are expected to contact Rolls-Royce to request assistance and guidance about when parts are considered as being at “piece-part” level.**
- C. Comment not agreed. This action was taken to address mis-interpretation of Rolls-Royce instructions, which have now been clarified. As EASA expects maintenance to be done using the latest instructions of the design approval holder, that should be sufficient to prevent further errors.**

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

**Commenter 2: Singapore Airlines – Muzafar Rasheed – 18/05/2021****Comment # 2**

"For Group 1 engines: During the next qualified shop visit (as defined in this AD) after the effective date of this AD". We have Group 1 engines which have been removed and currently in the shop (shop visit prior to AD effectivity). Please include, Inspection that was accomplished during a shop visit prior to AD effective date can be taken as credit for the requirements in this AD.

**EASA response:**

**Comment not agreed. See EASA answer to Comment #1, Point A above.**

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

**Commenter 3: Gulf Air – Mohamed Ahmed Elkady – 18/05/2021****Comment # 3**

Gulf Air have 5 engines affected by this missed HPTD inspection during hospital shop visit, and according communications with EASA , FAA, Boeing and RR , Bahrain Civil Aviation Authority (BCAA) issued exemption letter to accept the operation of these engines till next shop visit.

Based on the above, Gulf Air requests to add this statement under RELATED ADs:

(5) For Group 1 engines, issuance of this AD constitutes a one-time acceptance to keep the engines in service till the next Qualified shop visit, with respect to the missed focused inspections on the Affected parts deemed mandatory under EASA AD 2020-0241, AD 2020-0242, AD 2020-0243 or AD 2020-0244, as applicable.

**EASA response:**

**Comment not agreed. The AD requires the action(s) as indicated, with the specified compliance time. As for every AD, that clearly implies that, within that period, the engine can be operated.**

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



**Commenter 4: Virgin Atlantic Airways – Greg Mitchell – 19/05/2021**

**Comment # 4**

Under “definitions”, certain revisions of the TLM are stated; **The applicable TLM task**: Rolls-Royce Trent 1000 Time Limits Manual (TLM) **T-Trent-10RRB Revision 23**, or TLM **T-Trent-10RRC Revision 20**, sub-task 05-20-01-890-012; Trent 1000 TLM **T-Trent-10RRT Revision 16**, sub-task 05-20-01-890-010; or Trent 7000 TLM T-T7000-1RR Revision 7, sub-task 05-20- 01-890-002; as applicable.

This is then referenced in required actions under (1);

Inspection: (1) For Group 1 engines: During the next qualified shop visit (as defined in this AD) after the effective date of this AD, disassemble the affected part to ‘piece-part’ level condition and, before reassembly, inspect the affected part in accordance with the instructions of **the applicable TLM task**.

Under “ref. Publications” the latest TLM references are listed, which are different to those above;

Ref. Publications: Rolls-Royce Trent 1000 TLM **T-Trent-10RRB Revision 25**, dated 01 February 2021. Rolls-Royce Trent 1000 TLM **T-Trent-10RRC Revision 21**, dated 01 November 2020. Rolls-Royce Trent 1000 TLM **T-Trent-10RRT Revision 18**, dated 01 February 2021. Rolls-Royce Trent 7000 TLM **T-T7000-1RR Revision 8**, dated 10 March 2021. The use of later approved revisions of the above-mentioned documents is acceptable for compliance with the requirements of this AD.

Would it not be more prudent to include the latest revisions of the TLM to the “applicable TLM task” definition to ensure the most up to date (as possible) references are being used (as they are in the “Ref Publications”)? I understand later approved revisions are acceptable, however it would be good to have the definition starting at the latest point and being consistent.

**EASA response:**

**Comment partially agreed. The definition of “The applicable TLM task” is correct, as it refers to the ‘required’ documents to be used by the existing ‘ALS’ ADs.**

**However, for ‘credit’ purposes, the Final AD has been amended to include some earlier TLM revisions in the Section ‘Ref. Publications’.**



**Commenter 5: British Airways – Olly Townley – 20/05/2021****Comment # 5**

Under the section Definitions, The AD does not refer directly to EASA AD 2020-0241, AD 2020-0242, AD 2020-0243 or AD 2020-0244.

A number of engines / HPT disks were certified from the shop after the publication date of these ADs. Therefore, these HPT Disks are currently non-compliant against the requirements of the applicable TLM task AND the applicable AD, and this is the wording of the current local regulator exemption under which these equipments are in operation.

We would expect confirmation that for the period of operation between the date of issue of this PAD and the next qualified shop visit where the TLM task will be actioned this new AD Supersedes the requirements of the existing ADs 2020-0241, 2020-0242, 2020-0243 and 2020-0244, for the equipments listed in Appendix 1.

When our local airworthiness exemption expires, engines which are non-compliant with these ADs may no longer be suitable for operation without this clear stipulation in the balloted AD. The following wording in the balloted AD further confuses this:

“Compliance with this AD does not change, or affect in any other way, compliance of an engine with the requirements of EASA AD 2020-0241, AD 2020-0242, AD 2020-0243 or AD 2020-0244, as applicable.”

**EASA response:**

***Comment partially agreed. The ‘non-compliant’ status of the affected engines is open to interpretation, due to the fact that there was mis-interpretation of Rolls-Royce instructions. See EASA answer to Comment #1, Point C. above.***

***The quoted sentence in the AD, apparently causing confusion to the commenter, is intended to clarify that the required one-time inspection of an engine does not affect the compliance with the applicable ‘TLM’ AD for that engine. Having complied with paragraph (1) of the AD does not prevent compliance with the applicable ‘TLM AD’, nor does it suffice on its own to comply with that same ‘TLM AD’. Because of the latter, this new AD does not supersede any existing ‘TLM AD’, because those ADs also include additional mandatory instructions that are not restricted to critical parts inspections and that are not mandated by this new AD.***

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



**Commenter 6: Delta Air Lines – Cecilia Teeuwen – 27/05/2021****Comment # 6****Reference:**

(A) EASA Proposed Airworthiness Directive: PAD No. 21-072, dated 17 May 2021

(B) Rolls-Royce Trent 7000 TLM T-T7000-1RR Revision 8, dated 10 March 2021

(C) Rolls-Royce Trent 7000 CIR CIR-T7000-1RR Revision 27, dated 26 May 2021

**SUMMARY:**

Occurrences have been reported wherein, during engine shop visits, the High Pressure Turbine (HPT) Disc Assembly was not sufficiently disassembled to the piece-part condition. As such, the HPT Disc Assembly was not inspected per associated the Trent 7000 Time Limits Manual (Ref (B)) Chapter 05-20 Mandatory Inspections prior to return to service. This condition, if not corrected, could lead to HPT disc failure, possibly resulting in high energy debris release and damage to the aircraft.

This PAD requires inspection of the affected parts per the appropriate TLM Chapter 05-20 inspection task during the next qualified shop visit.

**DELTA'S COMMENTS**

Upon review of the Required Action(s) and Compliance Time(s) section of Ref (A), DAL noted the Corrective Action(s) includes the phrase "If, during the inspection as required by paragraph (1) of this AD, any discrepancy is detected, before release to service of the engine, replace the affected part with a serviceable part." Paragraph (1) instructs inspection of the HPT Disc Assembly per the applicable TLM task. The Trent 7000 TLM (Ref (B)) Chapter 05-20 requires inspection of the HPT Disc Assembly per the Trent 7000 CIR (Ref (C)) TASK 72-41-51-200-801 which accepts some damage to the HPT Disc Assembly. As such, DAL requests the noted phrase to be changed to "If, during the inspection as required by paragraph (1) of this AD, any affected part is rejected based on the applicable manual criteria, before release to service of the engine, replace the affected part with a serviceable part." Additionally, DAL requests definition of a "serviceable part" within the AD.

Similarly, upon review of the Parts Installation paragraph, DAL requests the phrase "... (no defects found) ..." be removed from the PAD language. Certain defects are permitted per Trent 7000 CIR (Ref (C)) TASK 72-41-51-200-801.

***EASA response:***

***Comment agreed. The Final AD has been amended to refer to the 'accept/reject' criteria as specified (or referenced) in the applicable TLM.***



**Commenter 7: SAESL – Abdul Malek – 28/05/2021****Comment # 7**

Can the AD include a “credit” paragraph to allow crediting of inspection on the HPT disc that was carried out prior to the effective date of the AD?  
This is to allow inspections on affected engines (currently in shop) to be carried out when the engine is in a qualified shopvisit.

**EASA response:**

**Comment not agreed. See EASA answer to Comment #1, Point A above.**

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

**Commenter 8: All Nippon Airways – Kenichiro Mezawa – 31/05/2021****Comment # 8**

- A. Regarding the following sentence in the "Reason" paragraph, this PAD is an inspection instruction for engines that have not been inspected, but I would appreciate it if you could explain what actions were taken to prevent similar cases in the future.  
Reason paragraph: "Whereas the maintenance activities as described above may not have been in direct violation of the instructions published in the applicable Rolls-Royce EMM, they did conflict with the intent of accomplishing focused inspections of critical parts when those parts are in such a condition that these inspections can be done without further substantial disassembly."
- B. Regarding the "Required Action(s) and Compliance Time(s)" paragraph, please consider add the Terminate Action item to the paragraph and specify the implementation of One Time Inspection as Terminate Action of this AD.
- C. Regarding the Inspection task in "Required Action(s) and Compliance Time(s)" paragraph (1), please clarify that disassembly and assembly task is not an AD instruction by changing the word as below.  
"For Group 1 engines: During the next qualified shop visit (as defined in this AD) after the effective date of this AD, inspect the affected part in accordance with the instructions of the applicable TLM task by 'piece-part' level condition."  
"Required Action(s) and Compliance Time(s)" paragraph Inspection:



(1) For Group 1 engines: During the next qualified shop visit (as defined in this AD) after the effective date of this AD, disassemble the affected part to 'piece-part' level condition and, before reassembly, inspect the affected part in accordance with the instructions of the applicable TLM task.

- D. Regarding the corrective action(s) task in "Required Action(s) and Compliance Time(s)" paragraph (2), please clarify the definition of "any discrepancy" by changing the word as below.

"If, during the inspection as required by paragraph (1) of this AD, any discrepancy that exceeds the CIR inspection limitations is detected, before release to service of the engine, replace the affected part with a serviceable part."

"Required Action(s) and Compliance Time(s)" paragraph Corrective Action(s):

(2) If, during the inspection as required by paragraph (1) of this AD, any discrepancy is detected, before release to service of the engine, replace the affected part with a serviceable part.

- E. Regarding the parts installation task in "Required Action(s) and Compliance Time(s)" paragraph (3), as with the 4th question [D], I would appreciate it if you could clarify the definition of "no defects found" by changing the word as below.

"From the effective date of this AD, it is allowed to install on any engine an affected part, provided that, before installation, the part has passed (no defects that exceed the CIR inspection limitations found) the inspection as required by paragraph (1) of this AD."

- F. Please consider to clarify the definition of the allowable condition for the engine is without a shop visit or carried out a shop visit that does not under the Qualified Shop Visits by adding the word as below.

"From the effective date of this AD, it is allowed to install on any aircraft an engine is had an affected part without the inspection as required by paragraph (1) of this AD, if the engine is without a shop visit or carried out a shop visit that does not under the Qualified Shop Visits."

"Required Action(s) and Compliance Time(s)" paragraph Parts Installation:

(3) For Group 1 and Group 2 engines: From the effective date of this AD, it is allowed to install on any engine an affected part, provided that, before installation, the part has passed (no defects found) the inspection as required by paragraph (1) of this AD.

- G. Regarding the related ADs task in "Required Action(s) and Compliance Time(s)" paragraph (4), is this sentence correct with the intention that it will allow engines that have override because they cannot comply with the stated AD, but will not allow further override?

"Required Action(s) and Compliance Time(s)" paragraph Related ADs:

(4) Compliance with this AD does not change, or affect in any other way, compliance of an engine with the requirements of EASA AD 2020-0241, AD 2020-0242, AD 2020-0243 or AD 2020-0244, as applicable.

#### **EASA response:**

**A. Comment not agreed. See EASA answer to Comment #1, Point A above.**



- B. Comment not agreed. The wording ‘Terminating Action’ is only used in an EASA AD when repetitive inspections are required (by that AD) and the terminating action would likely be a modification that would make those inspection no longer necessary. That is not the case with this AD.**
- C. Comment not agreed. Disassembly of the part is required to perform the inspection. It is therefore considered as being part of the required AD instructions.**
- D. Comment agreed. See also EASA answer to Comment #6 above.**
- E. Comment agreed. The Final AD has been amended accordingly.**
- F. Comment not agreed. The AD requires action ONLY on those engines that have an affected part installed and ONLY during a ‘qualified shop visit’. Other engines do not need to be corrected and installation of an affected part is allowed on any engine, but only under the conditions specified in the AD. For installation of a part, it is irrelevant during what kind of shop visit that is done.**
- Installation of an engine on an aeroplane is not regulated by this AD.**
- G. Comment noted. See EASA answer to Comment #5 above.**
- No changes have been made to the Final AD in response to Points B, F and G of this comment.**

