European Union Aviation Safety Agency

COMMENT RESPONSE DOCUMENT

EASA PAD No. 20-159

[Published on 08 October 2020 and officially closed for comments on 05 November 2020]

Commenter 1: Delta Air Lines – James Thompson – 02/11/2020

Comment # 1

References:

(1) Safran Service Bulletin (SB) BK70CR78-007 Rev 01, dated 25Mar2020

(2) Airbus Service Bulletin (SB) A330-78-3028 Rev Original, dated 14May2020

(3) EASA Proposed Airworthiness Directive: PAD No. 20-159, dated 08Oct2020

SUMMARY: On A330-900 aircraft equipped with Rolls-Royce Trent 7000 engines, it was identified from multiple in-service events that the Thrust Reverser (TR) translating cowl pressure seals were found to be missing or disbonded. After an investigation, it was determined that the issue was due to the bonding process not being properly performed during surface preparation at seal installation.

To correct and detect this, Safran issued Ref (1) which accomplishes an inspection of the TR translating cowls pressure seals for disbonding or missing parts. If damage is found, the seals are replaced, and an improved version of the bonding process is performed. For instances without damage or missing parts, Ref (1) requires installation of the existing seal followed by accomplishment of the improved bonding process. Following issuance of Ref (1), Airbus published Ref (2), a cover service bulletin, at the aircraft level identifying the applicable aircraft MSNs to accomplish Ref (1) on. Ref (3) was then issued mandating the one-time inspection.

This condition if not detected and corrected in the case where all seven seal segments are missing, could lead to loss of thrust at Maximum Continuous Thrust (MCT) or at Takeoff/Go Around (TOGA).

DELTA'S COMMENTS: While reviewing Ref (3), DAL has compiled the following to be incorporated into the impending AD.

A. Upon reviewing and comparing the applicability statements of Ref (1) with Ref (3), it was noted that Ref (1) identifies effective units at the thrust reverser serial number level, while Ref (3) identifies it at the aircraft manufacturing serial numbers level. Although both are effectivities of Ref (1) and (3) are key components in identifying the affected units and would assist operators; DAL believes that since thrust reversers are considered Removable Structural Components (RSC), that stating Rolls-Royce Trent 7000 thrust reverses within the affected parts definition in conjunction with providing the applicable thrust reverser serial numbers would be of benefit in identifying applicable units that require inspection. Therefore, DAL

requests that the affected part definition be amended to include the thrust reverser manufacturer, and the addition of an “affected thruster reverser serial numbers” list similar to Table 1 below would assist operators, and provide a better scope of applicability.

Thrust Reverser Left	
Part Number	Serial Number
All	ACL00012 to ACL00034, ACL00036 to ACL00037, ACL00039 to ACL00063, ACL00065 to ACL00068, ACL00073 to ACL00080, ACL00084, ACL00087

Thrust Reverser Right	
Part Number	Serial Number
All	ACL00012 to ACL00035, ACL00037, ACL00039 to ACL00063, ACL00065 to ACL00069, ACL00073 to ACL00076, ACL00078 to ACL00080, ACL00084, ACL00087

Table 1.

B. While examining the required actions and compliance times of Ref (3), it was noted that within (2) that if damage is found that installation of a new translating cowl pressure seal and rework is required. Since there are seven translating cowl front seals and the two sliderblock seals for each thrust reverser side that requires inspection, only the seals that are found damaged or missing require replacement followed by accomplishment of seal bonding rework; while if no damage if found the existing seals require only the seal bonding rework. To better clarify the actions required by para (2), DAL believes adding verbiage clarify that the type of rework that is required – specifically “seal bonding rework”, and including verbiage similar to “replacement of each seal” in lieu of “installation of new” would clarify the remaining actions required after inspection if damage if found. Therefore, DAL requests revision of para (2) to state: “If, during the inspection as required by paragraph (1) of this AD, damage is found on an affected part, as described in the SB, before next flight, **replace each** translating cowl pressure seal accordance with the instructions of the SB, and accomplish the **seal bonding** rework in accordance with the instructions of the cover SB”.

C. While examining the required actions and compliance times of Ref (3), it was noted that within para (3) that if no damage is found to accomplish the rework. As previously stated, there are seven translating cowl front seals and the two sliderblock seals for each thrust reverser side, each existing seal without damage only requires the seal bonding rework. Based on the inspection findings, there could be different combinations of inspection results (damaged vs. undamaged) on each thrust reverser side, therefore, using verbiage such as “each undamaged (and/or existing) seal” in

reference to undamaged parts would assist in differentiating the actions of paras (2) and (3), as well as stating the type of rework required is “seal bonding rework”. Therefore, DAL requests para (3) verbiage be revised to state “If, during the inspection as required by paragraph (1) of this AD, no damage is found of any affected part, before next flight accomplish the **seal bonding** rework on **each undamaged/existing** seal in accordance with the instructions of the cover SB”.
EASA response: ***A. Comment agreed. PAD 20-159R1 is now applicable to all aeroplanes on which the affected parts are eligible for installation.*** ***B. Comment agreed.*** ***C. Comment agreed.*** ***EASA PAD 20-159R1 has been issued in respose to this comment.***