

COMMENT RESPONSE DOCUMENT

EASA PAD No. 18-098

[Published on 18 July 2018 and officially closed for comments on 15 August 2018]

Commenter 1: Air France Industries – Benoit Richet – 01/08/2018

Comment # 1

I am writing you for technical question concerning the PAD 18-098 content

- A. Part Installation. I would like to know if we install an TR, coming from Shop, inspect by RA34078-75 and applicable to VSB RA34078-103: Does we have to inspect it by RA34078-103 before installation on an A/C even if it has not reached the VSB RA34078-103 tap test deadline?

Part(s) Installation:

(4) For Group 1 and Group 2 aeroplanes: From the effective date of this AD, installation on any aeroplane of an affected TR is allowed, provided that, prior to installation, the part has passed (no discrepancies found) a tap test inspection in accordance with the instructions of the SB; or that, following installation, the affected TR is tap tested and, depending on findings, corrected as required by this AD.

Example:

1/ TR SN 123456, POST VSB RA34078-75 (nil defect found), has to be inspect by VSB RA34078-103 between 15.000 FC and 16.900 FC. If the TR is installed at its 14.000 FC, does it have to be inspect by RA34078-103 before its installation OR can we expect its 15.000FC (1st Tap Test Inspection minimum Limit)?

2/ TR SN 456789, POST VSB RA34078-75 (nil defect found), has to be inspect by VSB RA34078-103 between 15.000 FC and 16.900 FC. If the TR is installed at its 16.000 FC, does it have to be inspect by RA34078-103 before its installation OR can we expect its 16.900FC (1st Tap Test Inspection maximum Limit)?

- B. Chart of VSB RA34078-103 – NOTES. On VSB RA34078-103, page 3/15, the **NOTE 3** are not clear and difficult to understand. Is it possible to clarify it? I would like to highlight that some NOTE are very difficult to industrialize (especially the **NOTE 3 & 4**), what is the deadline to replace the TR aft latch fitting? Before next flight [or] within XXX FC? Same question for **NOTE 3**.

- C. Could you please explain the term “full service life” on **NOTE 3, 4 & 5**: does it mean 20.000 FC (IAW EASA 2016-0236) or the new Life Limitation introduce by RA34078-103? Could you please explain the term “successful additional tap test” on **NOTE 3**, does it mean a tap test IAW VSB RA34078-103 or by VSB RA34078-75?

Note 1: No tap test necessary prior to 11000 FCs. OFS panels tap tested before 11000 FCs will be required to be tap inspected again after “Min” FC listed, but before “Max” FC listed.

Note 2: When TR FCs accumulated is above the max “SB RA34078-103 Tap Test Inspection Limit (FC)”, TR will have to be replaced before next flight (contact UTAS nacellerepairs@utas.utc.com)

Note 3: When SB RA34078-75 has been implemented between 8000 and 10799 FCs, successful additional tap test inspections are necessary to restore full service life to the TR. **OR** the first OFS inspection per SB RA34078-103 is successful (no disbond found) **AND** the TR aft latch is replaced (per CMM 78-30-01)

Note 4: When SB RA34078-75 has been implemented between 10800 and 11599 FCs and the first OFS inspection per SB RA34078-103 is successful (no disbond found), the TR aft latch fitting replacement (per CMM 78-30-01) is **MANDATORY** to restore full service life to the TR.

Note 5: When SB RA34078-75 has been implemented between 11600 and 12799 FCs, TR aft latch fitting replacement was **MANDATORY** per SB RA34078-86. The first successful OFS inspection per SB RA34078-103 (no disbond found) will restore full service life to the TR (12 O'clock Beam).

Note 6: T/R Aft Latch and 12 O'clock Beam life limit after tap test are given in case of OFS inspections per SB RA34078-103 are successful (no disbond found)

If there is any disbond found or if T/R FC is unknown (Current FC or at SB RA34078-75 application), contact your local UTAS representative or submit a request via the UTAS Customer Web Portal (www.customers.goodrich.com), or nacellerepairs@utas.utc.com for UTAS analysis and disposition instructions.

EASA response:

- A. *Comment understood. To clarify, the mentioned SB RA34078-75 is not an inspection SB but a modification SB. That said, it is confirmed that a part that has not yet reached the applicable compliance time for the initial inspection can be installed on an aeroplane and then be later inspected when reaching the threshold.*
- B. *Note 3 Clarifications: For these 2 configurations (RA34078-75 implementation between 8000-9999FC (case 1) or between 10000-10799 FC (case2), a successful 1st tap test is not sufficient to demonstrate 20.000FC life (TRU life limitations at TRU aft latch fitting = 18600FC for case 1, 17940 for case 2). Then, there are 2 options for this TR to stay in service: Either additional tap tests (1 additional tap test for case 1; 3 additional tap tests for case 2) are done with no findings, OR the TR aft latch fitting is replaced. If TR aft latch fitting replacement is chosen, this replacement shall be done before TRU life limitation defined in the array (18600FC for case 1, 17940 FC for case 2). If none of these 2 actions are applied, the dedicated TRU has to be removed from the aeroplane before 18600FC in case1, before 17940 FC in case 2.*



SB RA34078-103 1 st Tap Test Inspection Requirements					Additional Requirements to Reach DSG (if necessary)			
Thrust Reverser FC since new at application of SB RA34078-75 or SB RA34078-93	Thrust Reverser FC Life Limitation Pre SB RA34078-103	SB RA 34078-103 1 st Tap Test Inspection Limit (FC) (See Note 1)		Thrust Reverser FC Life Limitation After 1st Tap Test Inspection (See Note 2)	Additional Actions Required To Reach DSG	Additional Tap Test Inspection Limitations Required To Reach DSG		Thrust Reverser FC Life Limitation After Inspection and Any Required Corrective Action (see Note 4)
		Min	Max (See Note 2)			Min	Max (See Note 2)	
0 - 1999	14700	11000	14700	20000 = DSG	None	N/A	N/A	20000 = DSG
2000 - 3999	16400	14500	16400	20000 = DSG	None	N/A	N/A	20000 = DSG
4000 - 6499	16900	15000	16900	20000 = DSG	None	N/A	N/A	20000 = DSG
6500 - 7999	16900	16500	16900	20000 = DSG	None	N/A	N/A	20000 = DSG
8000 - 9999 (See Note 2)	16950	16760	16950	18600 < DSG	1. Additional Tap Test Inspection or Replace T/R Aft Latch	18 430	18 620	20000 = DSG
10000-10799 (See Note 2)	16950	16760	16950	17940 < DSG	3 Additional Tap Test Inspections or Replace T/R Aft Latch	1st) 17750 2nd) 18580 3rd) 19290	1st) 17940 2nd) 18780 3rd) 19490	18780 < DSG 19490 < DSG 20000 = DSG
10800-11599 (See Note 4)	16950	16760	16950	16950 < DSG	Replace T/R Aft Latch	N/A	N/A	20000 = DSG
11600-12799 (See Note 2)	19900	17950	19900	20000 = DSG	None	N/A	N/A	20000 = DSG

NOTE 4 clarification: For this configuration, (RA34078-75 implementation between 10800-11599 FC), a successful 1st tap test is not sufficient to demonstrate 20.000FC life (TRU life limitation at TRU aft latch fitting = 16950 FC). Only 1 solution is available for this TR to stay in service: TR aft latch fitting replacement, which shall be done before TRU life limitation defined in the array (16950 FC). If this action is not applied, the dedicated TRU has to be removed from the aeroplane before exceeding 16 950 FC.²



SB RA34078-103 1 st Tap Test Inspection Requirements					Additional Requirements to Reach DSG (if necessary)			
Thrust Reverser FC since new at application of SB RA34078-75 or SB RA34078-93	Thrust Reverser FC Life Limitation Pre SB RA34078-103	SB RA 34078-103 1 st Tap Test Inspection Limit (FC) (See Note 1)		Thrust Reverser FC Life Limitation After 1st Tap Test Inspection (see Note 4)	Additional Actions Required To Reach DSG	Additional Tap Test Inspection Limitations Required To Reach DSG		Thrust Reverser FC Life Limitation After Inspection and Any Required Corrective Action (see Note 4)
		Min	Max (See Note 2)			Min	Max (See Note 2)	
0 - 1999	14700	11000	14700	20000 = DSG	None	N/A	N/A	20000 = DSG
2000 - 3999	16400	14500	16400	20000 = DSG	None	N/A	N/A	20000 = DSG
4000 - 6499	16900	15000	16900	20000 = DSG	None	N/A	N/A	20000 = DSG
6500 - 7999	16900	16500	16900	20000 = DSG	None	N/A	N/A	20000 = DSG
8000 – 9999 (See Note 3)	16950	16760	16950	18600 < DSG	1 Additional Tap Test Inspection or Replace T/R Aft Latch	18 430	18 620	20000 = DSG
10000-10799 (See Note 3)	16950	16760	16950	17940 < DSG	3 Additional Tap Test Inspections or Replace T/R Aft Latch	1st) 17750 2nd) 18580 3rd) 19290	1st) 17940 2nd) 18780 3rd) 19490	18780 < DSG 19490 < DSG 20000 = DSG
10800-11599 (See Note 4)	16950	16760	16950	16950 < DSG	Replace T/R Aft Latch	N/A	N/A	20000 = DSG
11600-12799 (see Note 5)	19900	17950	19900	20000 = DSG	None	N/A	N/A	20000 = DSG

C. Comment understood. After coordination with Airbus, the following clarifications on some Notes as specified in Airbus SB can be provided:

“Full service life” is meant for the thrust reverser unit, thus 20.000 FC also called DSG in this VSB.

“Successful additional tap test” means a tap test performed in accordance with VSB RA34078-103 with nil finding.

No changes have been made in the Final AD in response to these comments.



Commenter 2: Lufthansa Technik – Jann Rauschenberger – 14/08/2018
Comment # 2

- A. As stated in SB A340-78-4052 in the section of compliance table 1, config. 001 the records for the accomplishment of Service Bulletin CFM56-5C 78-0075 or SB CFM56-5C 78-0093 rev00 should be checked at a special defined Threshold (T/R which have accumulated more than 11000FC but not later than 14700FC). LHT discovered that some units of our customers have already accumulated far more than 14700FC. All those discovered TR units are post SBC -75 or -93 and therefore affected by SB 340-78-4052. In regards to the current SB threshold that means that all those units are already overdue at the point of SB/AD publication!? So there is no way for an operator to perform SB assessment within a feasible timeframe. And this condition will also result in an AOG situation instantly. LHT therefore kindly asks to provide a grace period (e.g. 12 Month) for affected Thrust Reversers that already have accumulated more than 14700FC?
- B. In the SB A340-78-4052 Repair instructions (Subtask 784052-960-001-001 till Subtask 784052-960-008-001) a UTAS representative have to be contacted and the removed TR cowl have to be send to UTAS for the repair and for further instructions. LHT and many other MRO have their own Workshop to do those repair jobs. LHT therefore understands that this is only a request by UTAS and not a requirement for AD compliance and a repair can be done by our own facility based upon available and approved repair Data delivered by UTAS or will it be AD relevant to send the TR unit to UTAS?

(c) Contact UTAS representative to send the retained LH T/R cowl for the repair and further instruction.

Further on a potential change of one TR unit or more in case of findings will only be possible if the spare market is ready to deliver up to 8, inspected and/or repaired, TR units (4LH and 4RH) per AC in a suitable time. An on wing (temporary) repair is not stated within the SB and a Shop repair will last up to one month per TR unit. This fact can lead to uncontrolled AOG situations and LHT would like to avoid this heavy impact for all customers.

- C. To fulfil AD para 1 it is required to inspect each affected TR unit for letter “P” at the TR nameplate (as per SB 78-4052). The Letter “P” which should be etched on the nameplate and should be inspected on-wing side (as per SB 78-4052) should indicate if a special OFS material kit was used. The historical instruction to add that letter after incorporation of SBC -75 or -93 is only mentioned in a small Note of those SBCs and only if an alternate material kit was used. From our point of view the inspection of the Letter “P” seems not to be a feasible method to clearly identify whether this material kit was used or not. Can EASA confirm that the identification of the correct material kit is also acceptable for AD compliance e.g. Form1 with stated used material kit or workshop repair documentation with used material kits?
- D. For Information: The PAD describes that a not corrected OFS Panel disbond can lead to the in-flight loss of the Common Nozzle Assembly, [...]. LHT agree that a loss of the OFS Panel can lead to damage to the aircraft and/or injury to persons on ground but the engine mixer is bolted to the engine



via 96 bolts, the exhaust nozzle is fixed to the Mixer and will be hold in place via the V-Groove. Both [have] the [strength] to withstand the whole thrust that Engine can deliver. As the OFS Panel is made from Sandwich honeycomb, damage to the CNA might be occur but LHT has the opinion that even in a worst case scenario a partially or full loss of the OFS Panel will not lead to an in-flight loss of the CNA or the exhaust nozzle. Therefore LHT would be interested by getting more (technical) information why EASA is expecting a loss of the CNA?

EASA response:

A. Comment understood. It was realised that the compliance times expressed in PAD 18-098 were not clear. Indeed, what counts to determine the compliance time for accomplishing the tap test is actually the FC accumulated since new, at the time when Rohr SB RA34078-75 was embodied, or when a repair in accordance of the instructions of Rohr SB RA34078-93 was accomplished. Operators are expected to check the situation with the affected TR. In conclusion, it is not because a TR has accumulated more than 14 700 FC since new that the inspection must be done immediately. The Final AD is amended to clarify this point.

B. Comment agreed. It is confirmed that, sending the part to UTAS for repair is not a requirement for AD compliance, and a repair can be accomplished by an approved maintenance organisation, based upon available and approved repair Data delivered by UTAS.

C. Comment agreed. It is confirmed that a review of TR maintenance record is acceptable to determine that the part has a Hexcel PAA core OFS panels installed or not. The TR units having a Hexcel PAA core OFS panels installed are indeed not affected by this final AD.

D. Comment understood. The Common Nozzle Assembly (CNA) and Mixer interfaces are detailed in their two dedicated CMM.

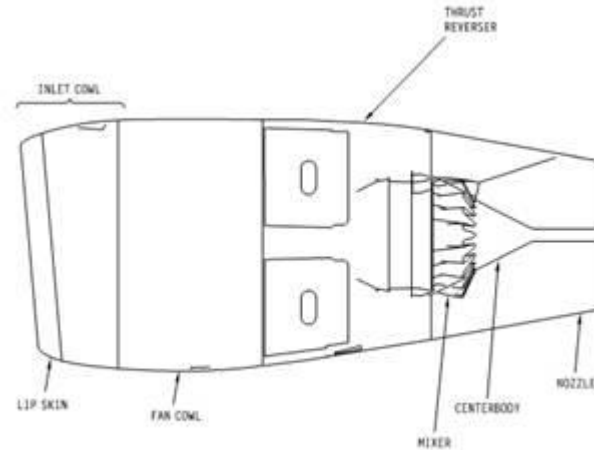
Extract from CMM 78-11-21 (mixer description and operation 1.A (1)): “A bracket assembly on top of the mixer holds the front of the exhaust nozzle assembly in place when the thrust reverser doors are open.”

Extract from CMM 78-11-11 (Nozzle assembly- description and operation page1):

(3) When the thrust reverser C-ducts are closed, the nozzle attaches to the thrust reverser V-blade via a V-groove on the nozzle.

(4) When the thrust reverser C-ducts are opened, the nozzle rests on the mixer support pins and a six o'clock strut between the nozzle and mixer.





The 2 CMM explain that Nozzle Assembly rest on the mixer only when the TRU is opened, i.e. only for ground loads. For in-flight conditions, the CNA is only attached to the TRU thru the V-blade (configuration used for actual fleet plan).

Please note that the PAD states: “This condition, if not corrected, can lead to the in-flight loss of the common nozzle assembly, possibly resulting in damage to the aeroplane and/or injury to persons on the ground.” This is detailed in related Rohr SB RA78-0103 §1.C.(3): “Cause = The Hexcel CAA OFS panels are susceptible to wet ageing deterioration leading to a fatigue life limitation of 14,700 FC for the 6 O’C latch fitting.” This potential fatigue latch failure, due to loads redistribution following OFS disbond, could lead to TRU aft V-blade opening, and then to CNA in-flight loss.

No changes have been made to the Final AD in response to this comment, except in response to point A.

