COMMENT RESPONSE DOCUMENT

EASA PAD No. 18-040

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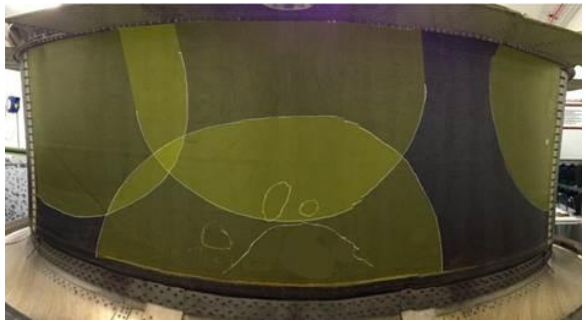
Commenter 1: Air France Industries – Benoit Richet – 10/04/2018

Comment # 1

A. From VSB Cat.4 classified as not safety from future AD: UTAS has released the VSB CF6-80E1-NAC-71-048 (Cat.4) on JUL 14 to inspect an eventual inlet cowl lower inner barrel panel disband, and the VSB CF6-80E1-NAC-71-052 (Cat.8) on FEB 16 to install new drained inlet cowl lower inner barrel panel. Airbus has just released the SB A330-71-3035 (classified Mandatory) on 14 FEB 18. This inspection due to EASA AD is expected on Q1 2018 (IAW RIL G71M17011908), IAW SB A330-71-3035 all Inlet Cowl has to be inspect within 24 months after the SB release date (before 14 FEB 20). IAW UTAS presentation (here after): "Alone, disbonded panel does not pose an operational risk to the aircraft, Only a disbonded panel combined with an engine surge event will cause potential panel buckling. (The probability of such an event is extremely low (~8 x 10-8))". Also IAW this presentation "Safety Boards at Airbus, GE and UTAS have classified this as not a safety issue". AFR would like to know how we can have a VSB Cat.4 on an event with a probability of 8x10-8 in JUL 14 plus a not safety issue classification by Airbus, GE and UTAS following to the release of a Mandatory SB on FEB 18 + EASA AD in Q1 2018 ?

B. Area accessible: The VSB UTAS CF6-80E1-NAC-71-048 requests to inspect the panel that can be interpreted as "inspect all the panel". As per test made by AFR engineering, not all the panel area can be inspected with OW access preconize by the VSB CF6-80E1-NAC-71-048. Here after you will find a panel inspected OW with all area that can be inspect in yellow. As you can see, there are areas which are not accessible OW. AFR request that EASA AD and the VSB indicate the inspection that has to be done on all "accessible area with OW access".



C. Gap between OW inspection and Shop Inspection on the same Inlet Cowl: AFR has made the inspection with OW access, and the same inspection on the same inlet cowl with Shop access (outer barrel remove). On the picture below you have the delaminated area found OW in red and the delaminated area found in Shop in white. As you can see, we have a gap between this twos inspections. With OW access: 119.9 in² delaminated // With Shop access: 70.89 in² delaminated. So a difference of 40% with two different access.

It means that it is possible to remove Inlet Cowl after an OW inspection out of tolerance (> 50 in²), but after the shop inspection, the Inlet Cowl would have been in the tolerances and we would have been able to re-inspect within 24 months.

D. Inspection subjective: The geometrical forms are not easy to calculate and so, combined with the environmental condition (ambient noise with A/C in check, mechanics sense of hearing..), the result is very subjective. For AFR, it's not normal to have an AD with potential operational consequences with a subjective inspection.

EASA response:

A. As the commenter indicates, the combination of an air inlet panel large disbond and an engine surge can potentially lead to an outer barrel collapse. This can have the consequence of a Part Departing Aircraft (PDA), which is considered as an unsafe condition. No changes have been made in response to this comment in EASA PAD 18-040R1, published for additional consultation.

B. EASA confirm that, before issuance of Goodrich SB CF6-80E1-NAC-71-048, Airbus and UTAS has performed tests to check the feasibility and accuracy of the tap test inspection of the air inlet lower panel: On wing, inspection was not tested, but the panel accessibility was checked and found adequate. We agree that full panel accessibility depends on the operator arm length, however, UTAS confirmed that the most critical area from a disbond point of view (at 6' o'clock position) is readily accessible on-wing, which is witnessed by operator's test and picture above. The probability to have a disbond out of the accessible area is negligible. In addition, 45% of the affected fleet was inspected with no communicated

issues. Finally, the on-wing inspections were primarily selected in an attempt to prevent Operational Disruptions but if concerns still remain, there is a possibility to inspect the panel off-wing, as specifically mentioned in VSB Paragraph 3, B.

Off wing, UTAS performed a comparison for disbonds using Tap Test, Hand-held scanner and ultra-sonic mapping. The results were very similar in sizing the relative disbonds.

As a conclusion, tap test as described in VSB CF6-80E1-NAC-71-048 is considered as an appropriate mean to detect the disbonds in this air inlet lower panel and the on-wing inspection is judged adequate to inspect areas where disbonds are expected to appear. In addition, VSB also provides ability for Operators to perform inspections off-wing if desired (Inlet Cowls could then be inspected in a controlled Shop environment with greater potential for access and noise control). EASA PAD 18-040 has been amended (R1) in response to this comment to restrict the on-wing inspection to the accessible area.

C. ***EASA agrees that there may be differences between on-wing and off wing inspection results. However, as explained above, the on-wing inspection is adequate to inspect the areas where disbonds are expected to appear and thus keep the aircraft airworthy. In addition, Goodrich SB CF6-80E1-NAC-71-048 offers two options:***

- on wing inspection, which is less accurate/more conservative but limit the on-ground time & cost.

- off wing inspection, which is more accurate, but requires removal/more on-ground time & cost but leads to refined results.

No changes have been made in response to this comment in EASA PAD 18-040R1.

D. ***EASA does not consider tap test as a subjective test. Indeed, off wing, UTAS performed a comparison for disbonds detected using Tap Test, and disbonds detected using Hand-held scanner and ultra-sonic mapping. The results were very similar in sizing the relative disbonds. Thus, tap test as described in Goodrich SB CF6-80E1-NAC-71-048 is considered as an appropriate method to detect the disbonds in this air inlet lower panel. On the other hand, EASA agrees that some external parameters on wing may have an impact on the test results. The Goodrich SB also provides ability to perform inspections off-wing if desired. Therefore, in order to limit surrounding noise and environmental impact, inlet cowls could then be inspected in a controlled shop environment with greater potential for access and noise control. EASA PAD 18-040 has been amended (R1) in response to this comment, introducing the in-shop inspection of an affected part as an alternative inspection method.***