European Union Aviation Safety Agency

COMMENT RESPONSE DOCUMENT

EASA PAD No. 21-186

[Published on 22 December 2021 and officially closed for comments on 07 January 2022]

Commenter 1: RBA Techical Services Powerplant – Abdul Malek – 23/12/2021

Comment # 1

EASA PAD with regards to HPT Stg 1 Blade & Stg1 Nozzles BSI has just come out for review and based on SB LEAP-1A-72-00-0461, our LEAP-1A26 engine model should not be affected by this implementation due to not being listed as MENA airlines.

I would like to double check where we stand at this moment by the AD requirements since we are not operating in MENA region as stipulated by definition "Critical Departure". I would appreciate if you could respond regarding the applicability to our LEAP1A fleet.

EASA response:

Comment noted: The AD is applicable to all engines models listed in the applicability, all serial numbers. Depending on engine configuration and in-service history (number of critical departures accumulated by affected parts installed on that engine), inspection are required or not. In any case, the number of critical departures accumulated by affected parts must be monitored. No changes have been made to the Final AD in response to this comment

Commenter 2: Atlantic Airways – Jákup Egil JENSEN – 25/12/21

Comment # 2

I have reviewed this PAD and I can see that we as operator (CAMO) must somehow do a periodic check of how many departures we have made with each applicable aircraft from the MENA region.

I have tried to find a list of airports (ICAO codes) that are within the MENA region, but without success.

How do you imagine that we (the CAMO) can control this coming AD as most Maintenance Information Systems (MIS) do only calculate out from Flight Hours, Flight Cycles and Calendar Time?

As I see it, we must do a periodic review of each departure flown and sum up how many departures each aircraft has performed out of a MENA region airport and then plan a BSI of the engines as required, but without a list of airport within this particular area. It will be an impossible task.

Does EASA have an official list of MENA region airports that we can use (refer to) or another idea of how we can control this coming AD?

EASA response:

Comment noted: A list of MENA region airports is not attached to the Final AD, since it could lead to several superseding ADs. While the list of States in the MENA region is identified in the SB, operators can contact CFM for additional information and a list of major airports in the MENA region. It is anyway operator's responsibility to determine if any other airport, from which the engine is operated, is in the MENA region. No changes have been made to the Final AD in response to this comment

Commenter 3: Lufthansa Technik AG – Binai Mathew – 27/12/21

Comment # 3

During review of the PAD 21-186, we have noticed that there is no reference to the AOT A72N017-21 which instructed the inspections before the SB 72-0461 was available. Credit for previous inspections according to AMM Tasks 72-52-00-290-803-A (HPT Stg 1 blades) and 72-00-00-290-814-A (HPT Nozzle) are given in Paragraph (8) of the PAD. Since several of the operators have used the AOT A72N017-21 as basic document to instruct the inspections according to the above mentioned AMM Tasks, we consider that it would be easier for operators to transfer the inspection tasks from existing Engineering Orders (based on AOT A72N017-21) to new Engineering Orders (based on SB 72-0461) if the AOT is mentioned along with the AMM Tasks in the credit Paragraph.

Perhaps the following change would be acceptable for EASA:

Credit:

(8) Accomplishment of a BSI of the affected parts of an engine in accordance with the instructions of Airbus AOT A72N017-21 or Airbus A320 AMM task 72-52-00-290-803-A and task 72-00-00-290-814-A is acceptable to comply with the applicable inspection requirements of paragraph (1) or (2) of this AD, as applicable, for that engine.

EASA response:

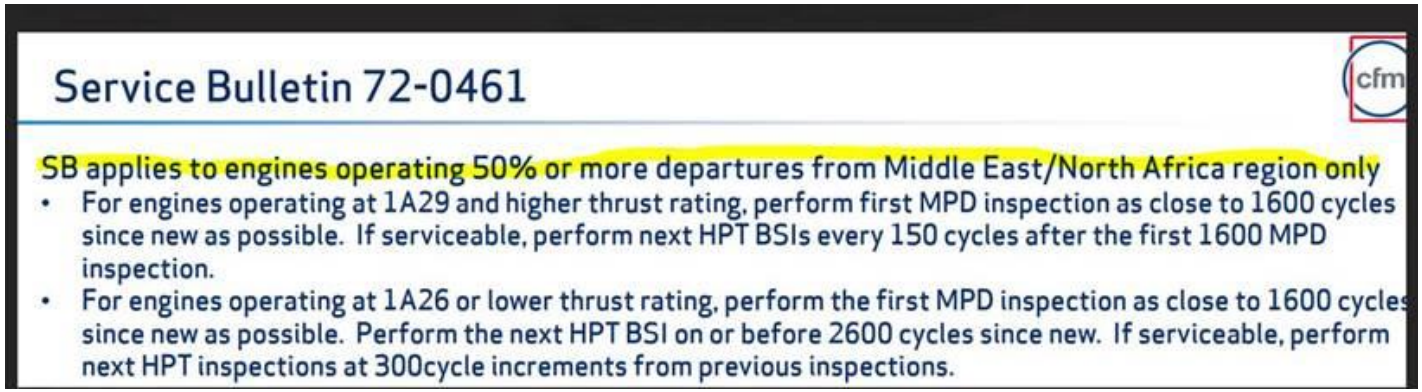
Comment not agreed. The original issue of the AOT A72N017-21 cannot be credited for compliance with the AD requirement, due to differences in the inspection requirements. The revision 1 of that AOT includes reference to CFM SB LEAP-1A-72-00-0461-01A-930A-D, which is actually the document required for compliance with the AD requirements. No changes have been made to the Final AD in response to this comment.

NOTE: Not related to this comment, following a review of in-service data, it has been determined that no credit can be given to AMM Tasks 72-52-00-290-803-A and 72-00-00-290-814-A, as stated in PAD paragraph (8).

Commenter 4: IBERIA L. A. E. – Tomás Ureña Santiago – 04/01/22

Comment # 4

IBE does not understand the proposed decision to declare affected engines subject for inspection those that have achieved 800 departures from MENA region airports. Initially CFM was considering affected operators those that perform 50% of their flights from MENA airports, however, the criteria was changed once SB 72-0461 was published.



Note: We would like for the criteria to be employed in the AD to be similar as the one employed with AD 2017-0065 for CFM56-5B were limitations were imposed based in a percentage of total flights with TS-1 fuel that can be acquired on Russian airports. Similar to what CFM criteria was going to be initially. By doing this, it is much more justifiable airworthiness-wise that IBE as an operator, who performs a scarce amount of flights on the MENA region, just needs to behave normally, not affected by reduced inspection interval.

For the operators it is very difficult to control how many T.Os have been performed from MENA region airports and to individualize those on an engine by engine basis in our airworthiness control system. Due to the following:

1. IBE engines are constantly rotating on either IBE or IBEXP aircraft and departures from that region are quite scarce and only on IBE fleet.
2. If we were to follow the instructions in the SB we would need to be performing reduced repetitive inspections after 800 take-offs from a MENA region even when the subsequent flights are not performed within that region.

Based on this, we have reviewed our historical data.

Our current departure profile taking into account the data from years 2019 and 2021 (Pre and post COVID lockdown) is the following:

2019:

TOTAL FLIGHTS: 6812

DEPARTURES FROM MENA REGION: 53

MENA DEP.RATIO: 0,77%

2021:

TOTAL FLIGHTS: 12361

DEPARTURES FROM MENA REGION: 74

MENA DEP.RATIO: 0,59%

Which is way behind what was declared initially as an “affected operator”. Now, due to the criteria expressed in the SB, we would need to be constantly monitoring on an engine by engine basis, the different take-offs each engine has and will be have in the future.

IBE believes that with the standard MPD task interval (and reduced interval covered by AMM in case of findings) we are more than covered with the low MENA exposure that we have.

In conclusion, we would kindly ask EASA to review the criteria for sporadic operators such as IBE.

EASA response:

Comment not agreed. Available data confirm that all engines having achieved 800 departures from MENA region have to be inspected, irrespective of the percentage of departures from MENA region vs total departures.

Any different inspection plan (threshold/interval) should be approved as AMOC to the AD requirements.

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

Commenter 5: Cathay Pacific Airways Limited – John Chiu – 04/01/22

Comment # 5

A. Para (2) to set a limitation against 800 critical departures is very difficult to control against since:

   a. We only record departures by IATA airport code and not by country.

   b. Our approved system is not able to count the departures from a list of counties, so it can only be done manually but it cannot be done in real time.

   Hence can the limitation be set by flight cycles since new instead. A specific interval can be set for an aircraft home based in a specific region. It has been done similarly on the Trent 700 HPT blade AD 2018-0291.

B. As per the Reason paragraph, parts cracking have been reported on engines operated extensively in the MENA region. Most operators outside of MENA such as Cathay are not affected by the issue, however we still need to bear the burden of tracking the limitation and demonstrating the compliance of the AD.

   Hence is it possible to set the AD applicability specifically to the MENA operators, or set applicability to the ESNs operated by MENA operators? It has been done similarly on the Trent 700 HPT blade AD 2018-0291.

EASA response:

5A) Comment not agreed. See also EASA answer to comment 2

5B) Comment not agreed. See also EASA answer to comment 4.

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

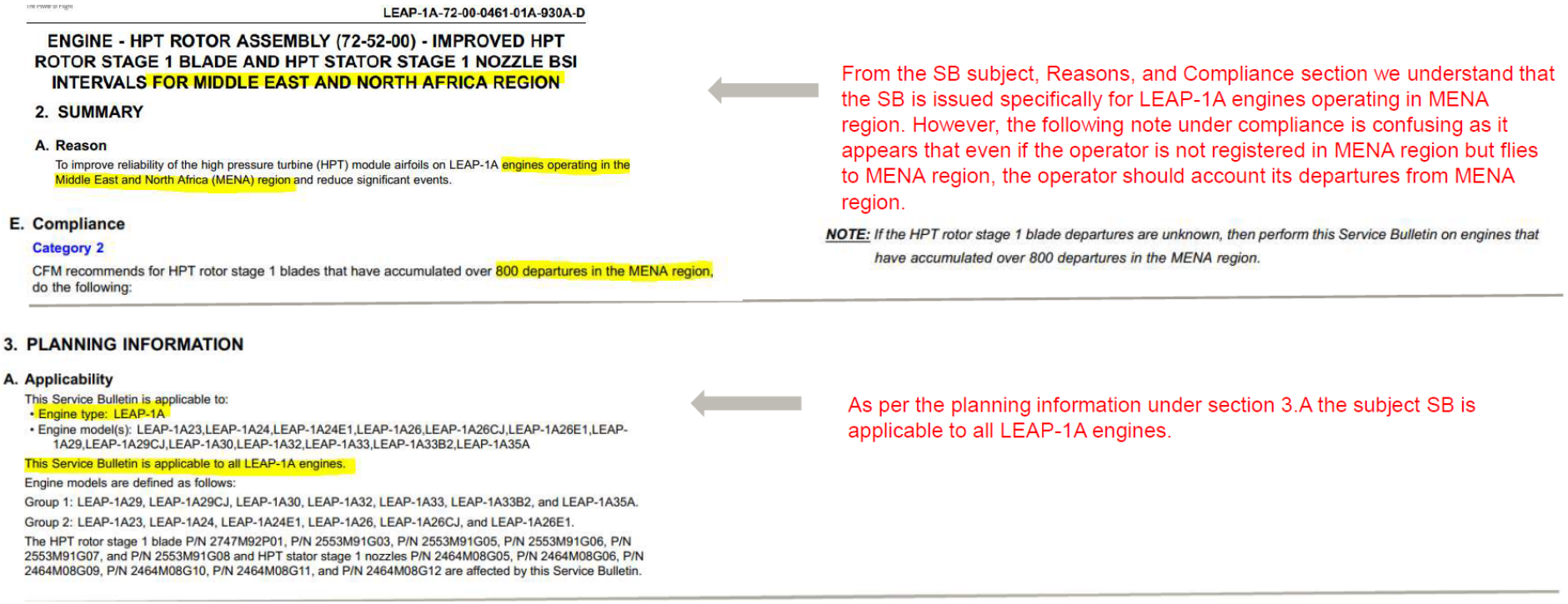
Commenter 6: Scandinavian Airlines System – Lemma Dubie – 07/01/22

Comment # 6

I would like to comment on the definition of ''Critical departures'' given on the PAD. The PAD defines critical departures as ''Take-off accomplished in the Middle East and North African (MENA) region, as defined in the SB''. Counting departures from a specific region is inconvenient. The applicability of the SB by itself is confusing as it appears that the SB is issued for MENA region but also refers to number of departures from MENA region when it comes to threshold or interval to perform the task. Please see questions raised to CFM on SB LEAP-1A-72-00-0461-01A-930A-D on the attachment.

Please make sure the AD when it is issued clarifies the confusion on the applicability. If the AD intends for all operators to start counting takeoffs from MENA region, we recommend finding another way of determining applicability without additional pressure on operators to count specific departures. Possible way of determining the applicability is to make the AD/SB to operators accumulating more than 50% departures from MENA region.

LEAP-1A-72-00-0461-01A-930A-D _ Request for clarification



LEAP-1A-72-00-0461-01A-930A-D

ENGINE - HPT ROTOR ASSEMBLY (72-52-00) - IMPROVED HPT ROTOR STAGE 1 BLADE AND HPT STATOR STAGE 1 NOZZLE BSI INTERVALS FOR MIDDLE EAST AND NORTH AFRICA REGION

2. SUMMARY

A. Reason

To improve reliability of the high pressure turbine (HPT) module airfoils on LEAP-1A engines operating in the Middle East and North Africa (MENA) region and reduce significant events.

E. Compliance

Category 2

CFM recommends for HPT rotor stage 1 blades that have accumulated over 800 departures in the MENA region, do the following:

From the SB subject, Reasons, and Compliance section we understand that the SB is issued specifically for LEAP-1A engines operating in MENA region. However, the following note under compliance is confusing as it appears that even if the operator is not registered in MENA region but flies to MENA region, the operator should account its departures from MENA region.

NOTE: *If the HPT rotor stage 1 blade departures are unknown, then perform this Service Bulletin on engines that have accumulated over 800 departures in the MENA region.*

3. PLANNING INFORMATION

A. Applicability

This Service Bulletin is applicable to:

- Engine type: LEAP-1A
- Engine model(s): LEAP-1A23,LEAP-1A24,LEAP-1A24E1,LEAP-1A26,LEAP-1A26CJ,LEAP-1A26E1,LEAP-1A29,LEAP-1A29CJ,LEAP-1A30,LEAP-1A32,LEAP-1A33,LEAP-1A33B2,LEAP-1A35A

This Service Bulletin is applicable to all LEAP-1A engines.

Engine models are defined as follows:

Group 1: LEAP-1A29, LEAP-1A29CJ, LEAP-1A30, LEAP-1A32, LEAP-1A33, LEAP-1A33B2, and LEAP-1A35A.

Group 2: LEAP-1A23, LEAP-1A24, LEAP-1A24E1, LEAP-1A26, LEAP-1A26CJ, and LEAP-1A26E1.

The HPT rotor stage 1 blade P/N 2747M92P01, P/N 2553M91G03, P/N 2553M91G05, P/N 2553M91G06, P/N 2553M91G07, and P/N 2553M91G08 and HPT stator stage 1 nozzles P/N 2464M08G05, P/N 2464M08G06, P/N 2464M08G09, P/N 2464M08G10, P/N 2464M08G11, and P/N 2464M08G12 are affected by this Service Bulletin.

As per the planning information under section 3.A the subject SB is applicable to all LEAP-1A engines.

Is this SB applicable to LEAP-1A engine operated by a European operator, that may fly to MENA region? If it is, it means that operators must count the number of departures form the MENA region which is inconvenient. If it is not applicable to operators registered outside MENA region then, the SB applicability must avoid doubt.

EASA response:

Comment noted: The understanding is correct. The AD is applicable to all engines, independently of the State of Registry, requiring actions before exceeding a certain number of departures from the MENA region. See also EASA answers to comments 2 and 4.

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

Commenter 7: Lufthansa Technik AG – Florian Weinz – 07/01/22

Comment # 7

With reference to PAD 21-186, section (13) “Reporting”, LHT would like to request a clearer wording. In the PAD section 13 it is mentioned to report any “discrepancy”. LHT would like to request if this wording could be made more clear, in which case the reporting should be done. To make this request more comprehensible, please see the following wording as an example:

“If, during any inspection as required by paragraph (1), (2) or (3) of this AD, as applicable, a HPT is found unserviceable, within 30 days after that inspection, or after the effective date of this AD, whichever occurs later, report the inspection results to CFM. This can be accomplished in accordance with the instructions of the SB.”

EASA response:

Comment partially agreed: Final AD has been updated accordingly, requiring reporting for those discrepancies as identified in the SB.