



COMMENT RESPONSE DOCUMENT

EASA PAD No. 17-099

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Commenter 1: Dirección General de Tráfico – José Carlos de la Peña – 28/07/2017

Comment # 1

First of all I introduce myself. I'm actually CAMO Responsible of Trafico fleet (Ministry of Interior, Spanish Government). I have been in charge of maintenance and airworthiness management of this fleet during last 13 years. We have operated during this time about 12 helicopters AS355N with more than 40.000 flight hours.

During this period we had to change the oil cooler fan bearings only one time due to excessive vibration level. So most of times we have replaced fan bearings when bearings have reached SLL.

Regarding AD/ASB:

Into ASB text, measures to take after measuring vibration levels (before and after cleaning) are only based on difference between both values and no values itself (not very logical). However you add in your proposed AD a corrective action indicating if values are over limit in any measure, replace the bearings (more logical)

With this consideration, the cases of ASB are reduced to three possibilities:

- 1- If any measure are over limits, replace bearings (independently the difference between both values)
2. If difference between both measures (both into the limits) are less than 0,75 IPS, ASB indicates apply 3.B.6, and into this paragraph "balance the tail rotor drive". This is unnecessary because the values are into the limits and it has no sense modify balance if it's into the limits.
- 3.-If difference between both measures (both into the limits, because otherwise we are in case1) are more than 0,75 IPS, ASB indicates replaced bearings. This is not logical from my point of view, because if both measuring values are into the limit, bearings haven't been working over the design values. If both measures are into the limit and difference between is more than 0,75 IPS, can be due the operation is carried out in a dirty environment and you have to clean fan more frequently.

Resuming. From my point of view, the important thing is if the bearings have been working into the limits or not. Measure the difference between values before and after oil cooler fan cleaning is only useful to establish if it's necessary to take complementary maintenance measures to define new periods for cleaning.



EASA response:**EASA disagrees**

The comment also put in evidence a wrong interpretation of the ASB requirement for TR balance.

A general clarification is herebelow provided.

The required action to be implemented in case the absolute vibration level is over the acceptable limit was discussed with AH and it was agreed that this check is ensured by paragraph 3.B.6 of ASB.

The ASB gives clear instructions when the delta IPS value between the two measurements are above or below 0,75 IPS

In detail:

- *delta smaller than 0,75 IPS (according to 3.B.5) : continue with 3.B.6*
- *delta above 0,75 IPS (according to 3.B.5): replace bearing (in 3.B.5), then continue with 3.B.6*

It has to be noted that in both cases 3.B.6 shall be complied with. The nominal acceptable IPS values are already given and defined within the referenced AMM working card instructions quoted in 3.B.6 (e.g. 65.10.00.604)

The main purpose of the ASB is to determine, if the two measurement (before and after fan cleaning – 3.B.4) show a significant delta, thus having a potential impact on bearing reliability. This is why replacement is necessary according to TCH.

The tail rotor drive vibration level is used as a means to indicate a change in behaviour (after fan cleaning), thus highlighting bearing degradation cause (as explained in the field reason of the ASB).

The check on the absolute value is in any case foreseen as for step 3.B.6. of the ASB.

The TR balance procedure shall be accomplished only “if necessary” as specified at first bullet of ASB at paragraph 3.B.6, meaning that the delta vibration in term of IPS is not a criterion that triggers the need of TR balance that is indeed triggered by the absolute value.

It is also noted that the complementary maintenance measure for specific type of operation in aggressive environmental conditions is already established in MET WC 12.00.00.306 requiring a fan cleaning each 50 FH (according to MSM 05-25-00 §63-20 M.G.B.). With this measure in place if a difference of 0,75 IPS is detected it is considered a symptom of bearing degradation that has to be corrected.

After the evidence gathered through this campaign more data will be available and further action could be required.



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

