

Newsletter Human Factors recurrent training – Bonus December 2015

The helicopter, an AS350BA, joined the maintenance facility to complete a scheduled maintenance.

During the post-maintenance flight, when required to check the autorotation handling performances, the pilot was unable to maintain the rotor RPMs into the green arc as they were dramatically too low.

Once landed, the investigation took some time to realise that, few months before, the owner requested to an AMO the replacement of the Main Rotor Sleeves, upgrading the aircraft configuration according to optional SB62-14.

SB62-14 is very clear about all the maintenance tasks and setting the warnings at sensitive steps of modification. One of those warnings says: "IMPORTANT NOTE: reduce the pitch-change rod length by 6 mm" at the final steps of the modification (see below).

Once focused on that warning, the mechanics did the flight controls rigging check and found that the requirement hasn't been satisfied by the previous AMO. For such a reason, the autorotation manouver, requiring to lower the main rotor blades pitch to allow the engine-off descent of the helicopter, could not be completed putting the helicopter and its occupants in real danger in case of an engine failure.

g) Final Steps

- Install :
 - . Shaft vibration damper as per MET Work Card 62.20.00.403.
 - . Blades as per MET Work Card 62.10.00.401
 - . MGB cowlings as per MET Work Card 53.00.00.403.

- Adjust the rod :

IMPORTANT NOTE : *Reduce the pitch-change rod length by 6 mm.*

As per :

MET Work Card 67.10.00.501 for aircraft without autopilot.

MET Work Card 67.10.00.502 for aircraft with autopilot.

How can we classify such an occurrence?

- Lack of knowledge (was the mechanics able to interpret the maintenance data)?
- Lack of resources (was the mechanic properly trained on the specific task)?
- Lack of situation awareness (was the mechanic aware of the danger)?
- Complacency (nobody realised the RPMs during the first post-maintenance flight? Nobody during the operations)?

Maybe all of them.

It's important to understand that strict adherence to the approved maintenance data and to procedures (e.g. flight manual) is of vital importance in our industry and both mechanics and managers shall be committed to this.

As usual, your feedback is essential to me but more important is the use you'll do of this leaflet as a mean of training within your organisation.

Merry Christmas and Happy New Year

DISCLAIMER

This document is not to be intended as an investigation report. This document is only a personal and partial view of a real case as seen by the author, aimed to highlight a particular aspect of the application of human factors, useful to diffuse a just culture throughout Organisations and their employees.

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