

LOKAÐ MEÐ BÓKUN

Case no.: **18-170F021**

Date: **20. June 2018**

Location: **Akureyri Airport**

Description: **Missing nut on two fasteners on main rotor pitch links**

Aircraft TF-HDH, which is an Airbus EC130-B4 helicopter, arrived in Iceland in a container after being procured by its operator. The operator shipped the container to Akureyri Airport and contracted Arctic Maintenance, an EASA part 145 maintenance organization in Akureyri, to reassembly the helicopter and to make it airworthy.



The helicopter was removed from the container on June 5th, 2018, and put into the Arctic Maintenance hangar at Akureyri Airport. The helicopter parts that needed to be reassembled were the main body, the tail boom, the landing gear, the upper main gear box mast and the main rotor blades. Part of the air condition system had also been removed from the tail boom and needed to be reinstalled as well.

On June 6th, Arctic Maintenance planning collected and prepared the work package for the reassembly. The helicopter was then reassembled over the next two weeks. There was no haste with the reassembly work, as an EASA Part 21J DOA approval for a change in the helicopter and a flight permit approval from the authorities, were also being prepared and they were expected to take longer to deliver than the reassembly.

On June 18th, after being reassembled, the helicopter was removed from the hangar and then ground runs was performed on it, as well as a daily inspection.

On June 19th, the helicopter was cleaned and polished and only the approval of the flight permit remained open.

On June 20th, after having received the flight permit from the authorities, the helicopter was prepared for a track and balance flight. During the preflight check, the pilot discovered that the nuts were missing from two of the three pitch link bolts on the main rotor.

The track and balance flight was cancelled and the helicopter was moved back into the hangar, where it underwent a thorough re-inspection of all the reassembly work.

During this inspection it was discovered that on the third and last of the pitch links, the installed nut was loose. No further defects were found during the inspection.

The defects were corrected and the helicopter subsequently released to service.



Two days after the serious incident, the operator of the helicopter contacted the ITSB¹ to report the event. The ITSB subsequently opened up an investigation.

The investigation revealed that the Part 145 maintenance organization had fairly recently prior to this serious incident started maintenance operation on helicopters. They had performed two maintenance checks on Airbus AS350 helicopters during the winter before. This was the first maintenance of the Part 145 maintenance organization on Airbus EC130 helicopter. As part of the maintenance organization preparedness to build up their helicopter maintenance capability, they had contracted a very seasoned² and licensed helicopter maintenance technician to assist them with the work.

The investigation revealed that after the upper main gear box mast installation, the pitch link bolts were installed. The investigation confirmed that at least one nut had been

¹ Icelandic Transportation Safety Board (Rannsóknarnefnd samgönguslysa in Icelandic)

² Over 22 years experience on Airbus/Eurocopter helicopter maintenance

installed. According to the maintenance technicians that worked on the reassembly the nuts were most likely installed on all the three bolts on the pitch links and tightened with the fingers.

The ITSB believes that the maintenance technicians forgot to torque the nuts on the pitch link bolts, as well as locking them using the locking features (bolt hole) in the shank of the pitch link bolt and the castellated nut. This most likely resulted in two of the three nuts for the pitch link bolts to fall off during the ground run on June 18th.

The investigation revealed that during the planning and preparation of the work package for the reassembly, the Part 145 maintenance organization failed to identify the reassembly task involving the pitch links as a critical task. Therefore, no secondary inspection was performed.

The Icelandic Transportation Safety Board decided not to write a formal report regarding this serious incident and closed the case during a board meeting on 8. August 2019.