

Follow-up Action on Occurrence Report

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ACCIDENT TO ROBINSON R22 BETA, G-IORG, AT SYWELL AERODROME, NORTHANTS ON 14 MAY 2002
(LARGE CRACK FOUND IN ROTOR BLADE AFTER FLIGHT)

CAA FACTOR NUMBER : F36/2003
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OPERATOR : Commissionair
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SYNOPSIS

(From AAIB Report)

G-IORG was used primarily as a camera platform for photographic survey work, flown usually by a freelance commercial pilot with the owner operating the camera from the left hand seat. On the morning of the incident the helicopter was flown by this pilot from his home to Maxey, Cambridgeshire, where he picked up the owner as his passenger. Weather conditions were fine with good visibility and a westerly wind. The plan was to carry out a photographic flight, the intended destination being Retford (Gamston) Airport, Nottinghamshire.

During the previous flight the pilot had noticed some vibration which had not been present on earlier flights; this vibration was again noticeable on his flight over to Maxey. When he subsequently took off with the owner on board, the vibration was considerably worse and he decided to abandon the proposed photographic flight and fly instead to Sywell Aerodrome, Northampton, where the helicopter was maintained, so that the cause of the vibration could be investigated.

The pilot decided to use a reduced power setting of 20 inches Hg for the flight to Sywell. Some 20 minutes into the flight the vibration became markedly worse but with Sywell now in sight the pilot decided to continue to there. He made a radio call to advise that he had a problem with vibration and once across the airfield boundary transited to the maintenance facility at low level as a precaution. The pilot described the vibration as being of low frequency and from the rotor head. He commented that he had experienced similar amounts of vibration in other types of helicopter and was not therefore unduly concerned.

After landing, a test pilot from the maintenance organisation went out to carry out an assessment. During his preliminary walk-round inspection, oil contamination was noted around the rotor head area. After climbing up to investigate the source of this oil, he was examining the spindle bearing oil retention boots for damage which from experience he considered a likely source, when he saw a large crack in one of the main rotor blades close to the root end. The test pilot was appalled at the extent of the crack, and immediately quarantined the aircraft pending the AAIB investigation.

FOLLOW UP ACTION

The three Safety Recommendations, made by the AAIB following their investigation, are reproduced overleaf, together with the CAA's responses.

Recommendation 2003-78

It is recommended that the FAA, as the Primary Certifying Authority for the R22 helicopter, require the manufacturer of the R22 helicopter to establish an inspection procedure capable of identifying blades containing cracks originating in the main rotor blade root fitting leading edge region.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed

Recommendation 2003-79

It is recommended that the FAA require the manufacturer of the R22 helicopter to devise an inspection method which will identify, on in-service blades, the type of root fitting surface abrasion damage found on both a cracked blade and several non-cracked sample blades, that is potentially capable of initiating fatigue cracking. (In devising an appropriate inspection method, due consideration should be given to the beneficial influence of the shot peen layer on the surface of the blade root fitting, and appropriate steps taken to ensure that any procedures used to remove the filler and adhesive layers and expose the metal beneath do not compromise the integrity of the peened layer).

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed

Recommendation 2003-80

It is recommended that the FAA confirm that the manufacturer of the R22 helicopter has adjusted their manufacturing processes of the main rotor blade, since the discovery of a large crack on an in-service main rotor blade, to preclude abrasion damage of the shot peened surface treatment during the adhesive clean-up process, and ensure that the depth of the shot peened layer on the blade root fitting conforms to the manufacturer's specification.

CAA Response

This Recommendation is not addressed to the CAA.

CAA Status - Closed