



MINISTRY OF DEFENCE

Military Aircraft Accident Summaries

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AIRCRAFT ACCIDENT INVOLVING ROYAL AIR FORCE WHIRLWIND HAR 10 XP 347

Date: 3 June 1981
Parent Airfield: Royal Air Force Chivenor, Devon
Place of Accident: Belgian Air Force Base, Koksijde
Crew: Pilot, Navigator and Winchman
One Passenger
Casualties: One major injury, 2 minor injuries

CIRCUMSTANCES

1. Whirlwind XP 347 was being flown from its parent airfield to Royal Air Force Gutersloh in the Federal Republic of Germany where it was to be withdrawn from flying and used for ground instruction purposes. The crew flew the third stage of the 2 day journey on 3 June 1981 from Royal Air Force Manston, Kent, to the Belgian Air Force Base at Koksijde, intending to refuel the aircraft before continuing to Germany the same day.
2. The pilot carried out an uneventful approach to Koksijde and flew the aircraft along the runway at a height of about 15 ft and at a fast walking pace intending to turn left onto the taxiway at the intersection with the runway. As he started to make the turn there was a harsh whining noise that rapidly increased in pitch and volume and almost immediately the aircraft began to yaw to the right. The pilot, diagnosing a tail rotor failure, immediately lowered the collective pitch lever to reduce the yaw moment and steered the descending aircraft away from the concrete surfaces of the runway and taxiway. The aircraft crashed on a grassed area close to the intersection and rolled over onto its left side. There was no fire and the 3 crew members and the passenger quickly left the aircraft. The navigator, who sustained major injuries in the impact, was flown to hospital in a Belgian Air Force helicopter while the other crew members were treated by the base medical staff. The aircraft was destroyed in the accident.

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CAUSE

3. It was clear from the loss of yaw control immediately before the crash that the aircraft had suffered a failure in the tail rotor transmission or control system. Examination of the wreckage revealed that a splined coupling, which forms part of the drive from the Main Rotor Gearbox to the Tail Rotor Gearbox, had failed through excessive wear. The interlocking splines of the coupling had worn almost to their roots and the two parts of the coupling were free to rotate within each other. The excessive wear was caused by lack of lubrication in the coupling combined with the presence of corundum, a hard substance normally used as an abrasive. It was found that a seal which is designed to retain grease within the coupling was missing thus allowing centrifugal effects to spin the lubricant away from the driving faces of the splines. The seal had been inadvertently omitted during an earlier servicing of the coupling. No reason could be found to account for the presence of the corundum.

SUBSEQUENT ACTIONS

4. While this accident revealed that some minor improvements could be made to the crash worthiness of the Whirlwind and to the procedures used during servicing of the aircraft, it was decided that the imminent retirement of the Whirlwind from Royal Air Force service would not make the pursuit of the improvements worthwhile.

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