



# MINISTRY OF DEFENCE

## Military Aircraft Accident Summaries



MAAS 14/81  
20 November 1981

### AIRCRAFT ACCIDENT INVOLVING A ROYAL AIR FORCE GAZELLE HELICOPTER ZA801

Date: 18 November 1980  
Parent Airfield: RAF Shawbury  
Place of Accident: Chetwynd Airfield, Shropshire  
Crew: Two  
Casualties: One major injury

#### CIRCUMSTANCES OF THE ACCIDENT

1. The aircraft was being flown on a pre-solo check sortie of an experienced student, who was converting to type prior to his instructor's course. The sortie was to include circuits at a relief landing ground (RLG), low flying and 'engine-off' landings. On arrival at the RLG the instructor took control with the intention of demonstrating that the aircraft would tend to pitch nose down during a spot turn if the rate of yaw was increased. The entry into the spot turn was normal but, as the aircraft reached the 180° point, the rate of turn increased dramatically and continued to accelerate to the point where control was lost. The instructor applied full corrective control but was unable to arrest the rapid rate of turn and, after about 5 complete turns, the aircraft struck the ground and rolled on to its right side. Both pilots were able to extricate themselves from the wreckage, but the instructor was later found to have suffered a crush fracture of the first lumbar vertebra. A small fire in the turbine area of the wreckage was quickly extinguished by the crews of other training aircraft which landed to give assistance. The aircraft was destroyed.

#### CAUSE OF ACCIDENT

2. The investigation determined that the intended manoeuvre was within the handling and structural limits of the aircraft and also that rapid and uncontrollable yaw had apparently occurred before the instructor had the opportunity of applying the yaw required for the purpose of the demonstration. The detailed post-crash examination of the tail rotor, flying control and transmission systems revealed no abnormalities or evidence of disconnection, failure or restriction. Thus it was not possible to establish precisely the cause of the accident, although it was probable that a combination of critical wind conditions and the aero-dynamic characteristics of the Gazelle had led to a loss of control in circumstances not previously experienced by the instructor.

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SUBSEQUENT ACTION

3. An investigation into the aerodynamic characteristics of the Gazelle in certain combinations of wind conditions and rates of turn in the hover is being made. The aim is to prevent recurrence of the incident, either by devising a procedure for regaining control of the helicopter in any future similar incident, or to introduce, if necessary, specific limitations on rates of turn in the hover in defined wind conditions which could induce an undemanded yaw and perhaps loss of control. Pending the outcome of the investigation, warning instructions have been issued that only slow and smooth spot turns are permitted in Gazelles of the UK Armed Forces.

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