

Aircraft type and registration: Beechcraft King Air E90 G-BHUL (light twin engined fixed wing aircraft)

Year of Manufacture: 1973

Date and time (GMT): 22 April 1985 at 1053 hrs

Location: 150 yards north east of Goodwood airfield boundary, Chichester, Sussex

Type of flight: Training

Persons on board: Crew — 2 Passengers — None

Injuries: Crew — 2 (serious) Passengers — None

Nature of damage: Aircraft destroyed

Commander's Licence: Commercial Pilot's Licence

Commander's Age: 32 years

Commander's total flying experience: 4900 hours (of which 1036 were on type)

Information Source: AIB Field Investigation.

The flight was intended as a refresher detail for a pilot under supervision (P U/S) and for the commander (PI), who was to be examined as a Type Rating Examiner (TRE) on the aircraft that afternoon. The P U/S held an Airline Transport Pilot's Licence and had over 15,000 hours experience. He was to be tested by the PI during the afternoon as part of his own Type Rating check, and during the PI's TRE approval.

The aircraft took off on the grass runway 06 with the P U/S in the left seat as handling pilot. The visibility was good, with high cloud cover, and wind recorded as from 060° to 080° at 20 to 30 kt, gusting to 35 kt. During the initial climb, PI simulated an engine failure, and after the touch drills and climb out were established, restored power to the "failed" engine. The climb was continued to 2,500 feet and an engine failure was again simulated before an NDB approach was made to runway 33.

P U/S then executed a single engined missed approach on completion of the let down, and entered the runway 06 circuit pattern. When at the downwind position he called "downwind full stop". The aircraft continued to the final approach with the simulated failed engine at a zero thrust setting of 120 ft lb torque and 1800 rpm.

The P U/S stated that he had some difficulty in stabilising the approach and controlling the airspeed in the gusty conditions. At approximately 300 ft agl he was not satisfied with the approach and initiated a single engined go-around, raising gear and flap. At some later stage PI took control and pushed the two throttle and rpm levers fully forward.

P U/S remembers the aircraft entering a spiral descent to the left, and both pilots remember their evacuation of the aircraft. However they have no recollection of airspeed, height, which engine was "failed" on either occasion, or indeed the event which prompted PI to take control.

The aircraft was seen to overfly the airfield in a north easterly direction with gear and flaps raised, and at a height variously estimated as between 100 and 300 ft agl. Just outside the airfield boundary the aircraft was seen to roll to the right then roll, or yaw and roll to the left and enter a spiral descent into an open field. The left wing tip struck the ground at an angle of 30° to the surface of the field, the aircraft then yawed left through 90° and slid and rolled a further 45 yards. It came to rest almost inverted and on its right side, with the detached left wing lying alongside the stub of the right wing.

The PI evacuated the aircraft through the inverted left main door and assisted the exit of the P U/S through the same door. The PI sustained a broken nose, fractured eye socket, and cuts and contusions. P U/S fractured his left ankle and received injuries to his face and nose which was also broken.

The airfield emergency services were very quickly on the scene and suppressed the smoke that was being generated by fuel leaking onto hot engine components, with fluorochemical foam (AFFF).

The gas turbine generator in the right engine continued to run, but it was considered that entry into an inverted aircraft surrounded by fuel was too dangerous, and other ways of stopping the engine were considered. After discussion, the county fire brigade pumped foam into the engine intake, and the engine was stopped. During this time the crew had been removed to hospital by ambulance.

The wreckage of the aircraft was removed to the AIB facility at Farnborough for further examination which included an inspection of controls and control runs, and stripping the engines and propellers. No significant fault or failure was found. The airspeed indicators were also calibrated and found to be accurate.