

Aircraft type and registration: Jodel BR 1050 Ambassadeur G-BKDX (light single engine fixed wing aircraft)

Year of Manufacture: 1960

Date and time (GMT): 2 June 1985 at 1815 hrs

Location: Shipham Airfield, Norfolk

Type of flight: Private (pleasure)

Persons on board: Crew — 1 Passengers — 1

Injuries: Crew — None Passengers — 1 (serious)

Nature of damage: None

Commander's Licence: Private Pilot's Licence

Commander's Age: 25 years

Commander's Total Flying Experience: 30 hours (of which 8 were on type)

Information Source: Aircraft Accident Report Form submitted by the pilot.

The aircraft's starter motor was unserviceable and the propeller had to be hand-swung to start the engine before each flight.

The passenger for the flight agreed to hand-swing the propeller but had no experience of starting aircraft engines this way. He had seen this being done the previous day and was fully briefed on the correct drill.

The pilot reports that the passenger swung the propeller six times without success. Before the seventh attempt the passenger called "Switches off". The pilot turned the magneto key to 'OFF' and repeated back, "Switches off". The passenger approached the propeller from the front of the aircraft and the engine fired. He sustained heavy bruising on his right arm and a deep laceration on his right leg.

The aircraft was checked by an aircraft maintenance company and no defect was found following a thorough investigation of the ignition system.

Both magnetos fitted to this aircraft were reportedly of the impulse type. The impulse mechanism retards the ignition spark to near top dead centre for starting and, if the propeller comes to rest at a position at which the mechanism is about to trip, the slightest movement can cause it to operate. For a spark then to be generated at a sparking plug the earthing of the primary coil through the magneto switch must be interrupted, though while there might be continuity to earth, a high resistance might be sufficient to allow a spark to form.

These considerations bear out the old advice that propellers should be treated as 'live' at all times.