

AAIB Bulletin No: 12/95 **Ref:** EW/G95/09/15 **Category:** 1.3

Aircraft Type and Registration: Jodel DR1051 Ambassadeur, G-JWIV

No & Type of Engines: 1 Potez 4E20 piston engine

Year of Manufacture: 1963

Date & Time (UTC): 23 September 1995 at 1155 hrs

Location: Hobbynoor Cross, Coldridge, Devon

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Left main spar broken, landing gear broken off,
propeller and engine damaged and tail detached

Commander's Licence: Private Pilot's Licence with Night Rating

Commander's Age: 60 years

Commander's Flying Experience: 430 hours (of which 17 were on type)
Last 90 days - 9 hours
Last 28 days - 3 hours

Information Source: Aircraft Accident Report Form and report of technical
investigation submitted by the pilot

The airfield comprised two grass airstrips; one north/south and one east/west. There was no wind and the takeoff was performed on the north to south runway which had a marked downward gradient but which faced high ground on the far side of a road beyond the airfield boundary. Everything appeared normal during takeoff and initial climb; the front fuel tank was being used and the electric fuel pump was 'ON'. The pilot initiated a climbing turn to avoid overflying a house on the top of the hill ahead and as he approached the hill top the engine power reduced to a 'rough idle'. The pilot checked the switches and fuel pressure and tried pumping the throttle. As there was a ploughed field and hedges ahead he decided to turn and try to land in a field to his left. Part way around the turn there was a surge of power from the engine and he decided to try and clear the road and land back on the airfield. He then realised that the aircraft was sinking and would hit the hedge so he put all switches off and pushed on right rudder to avoid the aircraft pitching over as it hit the hedge. The aircraft passed through the hedge, slid across the road and came to rest against the far hedge. The pilot vacated the aircraft with no injuries.

After discussion with the AAIB the pilot/owner carried out an examination of the engine and fuel system. He found that the suction valve in the mechanical fuel pump (Type Aginot 'W') was not sealing and that both layers of its dual layer diaphragm had split. The splits were clean edged, like cuts and did not appear to be associated with any chemical deterioration or perishing of the rubber. (Both Mogas BS4040 and Avgas 100LL had been used.) The pilot considered that the electric pump might also be weak and unable to deliver sufficient fuel when the mechanical pump failed.

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The aircraft was a Cessna 441, a twin-engine, high-wing aircraft, with a maximum gross weight of 2400 kg. The aircraft was registered in the United Kingdom and was operated by a private pilot. The aircraft was flying on a cross-country flight from London to a destination in the south of England. The flight was uneventful until the aircraft was 100 miles from the destination when the engine failed. The aircraft was forced to land in a field. The pilot was uninjured and the aircraft was damaged. The engine was found to be inoperative. The fuel system was found to be the cause of the engine failure. The suction valve in the mechanical fuel pump was found to be leaking and the diaphragm was found to be split. The pilot considered that the electric pump might also be weak and unable to deliver sufficient fuel when the mechanical pump failed.