

AAIB Bulletin No: 11/95 **Ref: EW/G95/08/27** **Category: 1.3**

Aircraft Type and Registration: Cessna A152 Aerobat, G-BOPW

No & Type of Engines: 1 Lycoming O-235-L2C piston engine

Year of Manufacture: 1979

Date & Time (UTC): 30 August 1995 at 0846 hrs

Location: Northampton (Sywell) Aerodrome

Type of Flight: Private (Training)

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Beyond economic repair

Commander's Licence: Student pilot

Commander's Age: 45 years

Commander's Flying Experience: 134 hours (all on type)
Last 90 days - 30 hours
Last 28 days - 11 hours

Information Source: Aircraft Accident Report Form submitted by the pilot
and examination of the aircraft by AAIB

The surface wind was 020/08 kt, and the visibility was 8 km. The aircraft climbed out from Runway 03, was levelled off at 2,500 feet altitude (airfield 429 feet amsl) and trimmed for straight and level flight without any problems. Following an exchange with ATC the pilot prepared to set course from overhead the field. The aircraft was turned onto roughly 120° whilst overhead a local reservoir and resumed straight and level flight with the airfield ahead. The pilot then heard "a noise similar to a ring-pull can being opened" and became aware of "a hot smell". Airspeed was then observed to be increasing at an altitude of 2,400 feet. The column was pulled back to raise the nose and reduce airspeed; the airspeed continued increasing with the ASI needle on the edge of the green sector (135 kt) despite a power reduction, and the aircraft did not pitch up. The pilot called the tower and reported 'in trouble' and was told to try to make the airfield, which was very close. In an effort to avoid the airfield buildings the aircraft was banked to the right at low level.

The aircraft was seen initially in a steep nose down attitude and appeared to bank steeply to the right whilst at 100 feet agl and strike very hard ground with the right wing approximately 47 metres from the 03 runway strip edge markers. It then cartwheeled onto the runway, striking the ground with the

propeller/engine and the left wing. The nose oleo collapsed and the aircraft came to rest upright on the main landing gear, close to the runway centreline. There was no fire and the pilot, who was wearing a full harness, was able to evacuate the aircraft without injury, but suffering from severe shock.

The pilot stated that she did not feel that she had panicked at all, but that the aircraft had not responded to elevator. She flew again the same afternoon with her instructor, and subsequently for two further flights, concentrating on emergency procedures, including recovery from steep nose down attitudes, and was able to recover from each situation to a satisfactory standard.

Subsequent examination by an AAIB Engineering Inspector showed that the flying controls had all been connected and there was no evidence of any foreign objects in the cockpit or fuselage which may have caused a restriction; witness marks showed that the flaps had been fully UP at impact. When examined the elevator trim was slightly nose down; cabin heat controls were off; and the cabin fresh air vents were closed.

The propeller had detached from the engine after striking the ground at low power, but it was not possible to assess engine/aircraft speed from ground marks as the ground around the initial contact area had been ploughed after the accident. A witness estimated that the initial impact with the ground was at around 100 kt.

Discussions with a Club QFI indicated that a dramatic nose down pitch, as witnessed, at 135 kt, would require 500/600 feet and approximately 10 seconds for a normal recovery.