

Scintex CP301-C2. G-ASRJ

AAIB Bulletin No: 7/2001 **Ref:** EW/G2001/02/07 **Category:** 1.3

Aircraft Type and Registration: Scintex CP301-C2. G-ASRJ

No & Type of Engines: 1 Continental C90-14F piston engine

Year of Manufacture: 1961

Date & Time (UTC): 19 March 2001 at 10:45 hrs

Location: Garston Farm near Bath

Type of Flight: Private

Persons on Board: Crew - 2 - Passengers - Nil

Injuries: Crew - None - Passengers - None

Nature of Damage: Extensive

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

Commander's Age: 50 years

Commander's Flying Experience: 691 hours (of which 219 were on type)
Last 90 days - nil
Last 28 days - nil

Information Source: Aircraft Accident Report Form submitted by the pilot and telephone enquiries by AAIB

History of the flight

The aircraft had undergone an extensive rebuild and a flight test was planned in order to obtain a Popular Flying Association (PFA) permit renewal under a 'Permission to Test Fly' issued by the PFA. The handling pilot, the aircraft owner, was accompanied by the PFA Inspector who acted as the flight test observer. Taxi and engine runs were carried out satisfactorily, however carburettor icing was experienced while on the ground but cleared normally with the application of carburettor heat. Full power checks were performed satisfactorily prior to take off. The take off and climb to 1,000 feet agl were normal. A timed climb through 1,000 feet was carried out, following which the aircraft was levelled at 2,800 feet and power reduced to a cruise setting. As a precaution, carburettor heat was applied; slight carburettor icing appeared present, but cleared normally.

Stall tests were then carried out, with carburettor heat applied before the engine power was reduced. Power was then increased to around 1800 rpm and a few gentle turns performed before recovery to Garston Farm. During the return a simulated baulked landing was carried out, and the descent towards it involved reduced power with carburettor heat applied. Following a height loss of

some 200 feet, full power was applied and the carburettor heat returned to 'cold' for the simulated go-around. After a brief climb of some 100 feet, the aircraft was levelled and power reduced to a cruise setting. A couple of light 'pops' were then heard which the pilot considered were consistent with ice being ingested into the engine. The engine then began to run roughly. Carburettor heat was immediately re-applied, but without apparent effect on the engine which was running at about 1600 rpm, and would not deliver full power. The engine oil pressure, temperature and fuel pressure were normal and there was about 3/4 of the tank of fuel remaining. The aircraft was by this stage some 4 nm north of Garston Farm at around 1800 feet agl. The pilot considered attempting a forced landing in a field but the ground in the area was soft and recently ploughed and so he elected to return to the farm strip.

The engine continued to run roughly but with indicated temperatures and pressures normal. The pilot was familiar with the airfield and set the aircraft up high on final approach as he was aware of the possible effect of sink from high trees to the south east of the airfield. At around 300 feet the flight test observer, who was less familiar with the airfield, became concerned at the steep approach and selected full flap. At around 200 feet the combined effects of windshear and full flap caused a high rate of descent to develop. The propeller also stopped rotating at around 150 feet, causing additional drag.

The pilot turned the aircraft to the right before landing to avoid a low stone wall in the undershoot area; however the left wing then struck a small tree causing the aircraft to yaw left before landing in soft ground beyond the tree. Both main gears collapsed and the aircraft sustained extensive damage, but both occupants escaped injury and were able to vacate the cockpit through the canopy.

Weather conditions

The Meteorological Office at Bracknell provided an aftercast for the area. At 1200 hrs UTC, there was a weak anticyclone centred over the Midlands with a moderate south-easterly airstream covering the Bath area. The surface wind in the area was 100 degrees at 11 kt and the wind at 2,000 feet amsl was 140 degrees at 20 kt. At 2,000 feet amsl, the air temperature was -2° C and the dewpoint was -4° C. Visibility was 30 km. The CAA General Aviation Safety Sense Leaflet 14A, 'Piston Engine Icing', indicated that such conditions were conducive to moderate to serious carburettor icing with descent power applied.

The pilot reported that carburettor icing had been encountered on the ground and during the flight, although this had cleared normally. He suspected that severe carburettor icing had occurred during the climb out from the simulated baulked landing. The climb out was short and may not have allowed the engine temperature to increase sufficiently to provide warm air when the carburettor heat was selected when the engine had then begun to run roughly. Although the engine had continued to run at 1600 rpm, induction ice may have continued to form more quickly than it could be cleared with the relatively low engine temperature.