

## Cessna F150L, G-BFWL, 18 December 1999

**AAIB Bulletin No: 4/2000      Ref: EW/G99/12/12      Category: 1.3**

<b>Aircraft Type and Registration:</b>	Cessna F150L, G-BFWL
<b>No &amp; Type of Engines:</b>	1 Continental Motors O-200-A piston engine
<b>Year of Manufacture:</b>	1973
<b>Date &amp; Time (UTC):</b>	18 December 1999 at 1025 hrs
<b>Location:</b>	Barton Aerodrome, Manchester
<b>Type of Flight:</b>	Private
<b>Persons on Board:</b>	Crew - 1 - Passengers - 1
<b>Injuries:</b>	Crew - None - Passengers - None
<b>Nature of Damage:</b>	Engine detached from mountings, bent left wing tip, damage to the tail plus distortion and disruption to fuselage structure near the landing gear rendering the aircraft beyond economic repair
<b>Commander's Licence:</b>	Private Pilot's Licence
<b>Commander's Age:</b>	32 years
<b>Commander's Flying Experience:</b>	97 hours (all on type)  Last 90 days - 10 hours  Last 28 days - 2 hours
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot plus telephone enquiries

Barton aerodrome has grass runways. There are two runways aligned 09/27 which are side by side and share a common edge. The northern runway is a temporary runway marked by white corners and white painted edge markers on its northern edge; it is 30 metres wide and 518 metres long. The southern runway is 32 metres wide and 621 metres long. Only one of the two runways aligned 09/27 is in use at any one time and on the day of the accident, the shorter temporary runway was in use.

The weather conditions were benign with negligible wind and an air temperature of 0°C but overnight hoar frost had formed. The pilot spent some 20 to 25 minutes pre-flight checking, defrosting and demisting the aircraft. The take-off weight was about 26 kg below the maximum allowable and the QNH was 1015 HPa. After taxiing to the holding point the pilot carried out

engine power checks and noted that there was a normal 50 to 80 drop in engine RPM when carburettor heat was applied. For take off he decided to use the short/soft field technique because the grass was covered in frost and the soil was very wet.

The pilot thought that acceleration during the take-off ground roll was noticeably slow due to the soft wet ground and layer of melting frost. At about two thirds of the way along the runway he rotated the aircraft and became airborne; thereafter he lowered the aircraft's nose to encourage the airspeed to increase. At a height of around 15 to 25 feet the aircraft's left wing dropped and despite the application of rudder it continued to drop until it contacted the runway, causing the aircraft to cartwheel and crash. It came to rest on its mainwheels near the threshold of Runway 09 South where both occupants vacated through the normal doors without assistance. The airport fire and rescue service attended and as a precaution, covered the area around the aircraft with foam.

According to the pilot, a groundsman who was working nearby reported that the aircraft's engine was making a popping sound on take off. The pilot attributed the accident to four different causal factors: very soft ground and waterlogged runway; no headwind; the possibility of carburettor ice; and the possibility of impact ice thrown up from the wet ground. However, according to another witness, the leading edges of both wings had been cleared of hoar frost for a chordwise distance of a few inches leaving the remainder of the upper surfaces covered in hoar frost. The pilot, who was taller than the average man, stated that he was able to clear off most of the hoar frost from the upper surface of the wings using a scraper and a rough cloth but he agreed that the procedure may not have removed all the ice.