ACCIDENT

Aircraft Type and Registration:	Cessna F172M, G-BAOS
No & Type of Engines:	1 Lycoming O-320-E2D piston engine
Year of Manufacture:	1973
Date & Time (UTC):	30 May 2006 at 1755 hrs
Location:	Near Seething Airfield, Norfolk
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - 1 (Minor) Passengers - 1 (Minor)
Nature of Damage:	Substantial
Commander's Licence:	Private Pilot's Licence
Commander's Age:	42 years
Commander's Flying Experience:	431 hours (of which 7 were on type) Last 90 days - 13 hours Last 28 days - 9 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

The aircraft suffered a partial loss of engine power during a go-around. The weather conditions were conducive to carburettor icing. The pilot, with carburettor heat applied, continued to fly the aircraft hoping that the power would recover. The engine continued to lose power and a forced landing was made in an arable field. The aircraft suffered substantial damage.

History of the flight

The aircraft was on a cross country flight from Hawarden, Cheshire, to Seething Aerodrome, Norfolk. When approaching Seething the pilot descended towards the airfield and crossed overhead at 800 ft to check the wind direction and the runway. He then climbed to 1,100 ft and joined the circuit on a left base for Runway 24.

The weather conditions recorded at nearby Norwich Airport were as follows; surface wind from 330º at 14 kt, visibility more than 10 km, few cloud at 1,400 ft, scattered cloud at 4,500 ft, temperature 8ºC, dewpoint 6ºC and pressure 1018 hPa. There had also been a few rain showers in the area.

The approach was made with 20º flap set and the carburettor heat was selected to HOT. On final approach the pilot selected 30º flap but realised that he was rather high. He continued the approach for a while and then carried out a go-around from about 200 ft agl. He applied full power and selected carburettor heat COLD. During the go-around, realising that he had probably had a tailwind on the approach, he decided to position

to a right base for Runway 06. As the aircraft climbed he noticed a reduction in power; he lowered the nose to maintain airspeed and selected carburettor heat HOT. He also selected flap from 20º to 10º, although he later commented that it may in fact have gone to 0º. The engine was still producing some power so, hoping it would recover, he decided not to commit to a forced landing ahead but instead to turn left hand downwind where there were still several options for a forced landing should it become necessary.

The power continued to reduce and the pilot realised now that he would probably have to land. He had already identified a field and continued towards it but as he got close was made aware, by his passenger, of some power lines ahead. He continued turning, away from the power lines, closed the throttle and landed ahead in the field. The field had a standing crop in it which was damp following recent rain. As the aircraft touched down on the main wheels it decelerated very rapidly and pitched forwards, coming to rest inverted.

The pilot and his passenger were disorientated after the aircraft came to rest, and had suffered a number of minor injuries in the accident, but they were able to vacate the aircraft using the side doors.

The pilot in his report said that he had suspected that carburettor icing was the cause of the loss of power. He continued flying the aircraft, rather than accepting an immediate forced landing, because there was some power available and he had an expectation that the use of carburettor heat would restore the power.

The atmospheric conditions at the time of the accident would have been conducive to serious carburettor icing at any power setting. The Civil Aviation Authority Safety Regulation Group Safety Plan 2006 provides the following information with respect to carburettor icing:

'Since 1976 Carburettor Icing has been a contributory factor in 14 fatal accidents and in over 250 other occurrences in the UK with numerous AAIB recommendations to SRG. Progress has repeatedly been hampered by the lack of data on where ice forms, how quickly and how much heat is effective in removing it. There has also been some doubt that the level of carburettor heat required by the Airworthiness Requirements (e.g. EASA CS-23) is adequate to mitigate the risk. CAA has conducted research using a specially designed carburettor test rig in conjunction with Loughborough University and an industry partner for systematic data collection. The CAA will publish a report on carburettor icing, including potential mitigation.'