

Aircraft Type and Registration: Team Minimax, G-BTXC

No & Type of Engines: 1 Rotax 447 piston engine

Year of Manufacture: 1991

Date & Time (UTC): 27 June 1994 at 1905 hrs

Location: Near Crowfield Airfield, Suffolk

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Extensive damage to forward fuselage, landing gear and wing roots

Commander's Licence: Private Pilot's Licence

Commander's Age: 41 years

Commander's Flying Experience: 55 hours (none on type)
Last 90 days - 2 hours
Last 28 days - 1 hour

Information Source: Aircraft Accident Report Form submitted by the pilot, telephone conversations with UK agent for Rotax Engine and Popular Flying Association (PFA) Inspector

At the time of the accident, the pilot was conducting his first flight on the type. The aircraft had reportedly been flown previously by the owner to confirm that conditions were suitable for the subject pilot's first flight. He was then given a briefing and carried out some taxiing runs before making his first takeoff. This was conducted at less than full power, the pilot considering that the power setting used was producing adequate performance. This low engine power was used for the climb, and general handling was then carried out over a period of approximately 20 minutes before power was reduced further to start the descent. At about this point the engine started to run roughly. Attempts to restore power by applying full throttle were unsuccessful and although the aircraft was turned towards the runway at about 800 feet the aircraft continued to lose height before undershooting by approximately 100 yards. The landing took place in standing wheat, the aircraft nosing over and coming to rest inverted.

A subsequent examination of the engine was carried out by the owner/builder and a PFA Inspector. They found evidence of extensive plug fouling, which they attributed to prolonged low power operation.

A set of pilots notes, which appear to have been derived from information supplied by the Kit manufacturer of the Minimax, make clear that extended climb on full power will lead to engine overheating. They also state, however, that on descent the engine should be warmed periodically and it is best if at least 3000 RPM is maintained. They make the point that if the engine is left to idle during descent, rapid throttle opening may lead to the engine stopping.

The UK distributor for the engine type confirms that care must be taken to avoid extended operation at very low power during the descent, since plug fouling may occur. Other known causes of loss of power when the engine is throttled back are:

- i) Operation of the engine with slight choke still applied
- ii) Incorrect assembly of the carburettor needle valve components.

Both these problems normally permit correct engine operation at high throttle opening but lead to excessively rich operation and possible engine stoppage when power is reduced. The PFA Inspector, who has flown the aircraft, states that it had been operating entirely satisfactorily in the period leading up to the accident and he is not aware that any work was done involving dismantling of the engine or carburettor recently. It is believed that the engine was started for this flight with the choke not selected since the engine was warm from the previous flight. The PFA Inspector also mentioned that meteorological data was obtained from Stansted Airport immediately after the accident; this confirmed that the temperature and humidity conditions were very unlikely to have lead to carburettor icing.