

Piper PA-28-181 Archer II, G-BOXY

AAIB Bulletin No: 9/97 Ref: EW/G97/06/02 Category: 1.3

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| Aircraft Type and Registration: | Piper PA-28-181 Archer II, G-BOXY |
| No & Type of Engines: | 1 Lycoming O-360-A4M piston engine |
| Year of Manufacture: | 1978 |
| Date & Time (UTC): | 4 June 1997 at 1830 hrs |
| Location: | Netherthorpe Airfield, Nottinghamshire |
| Type of Flight: | Private |
| Persons on Board: | Crew - 1 - Passengers - 3 |
| Injuries: | Crew - None - Passengers - None |
| Nature of Damage: | Damage to propeller, nose landing gear, both wings, engine shock loaded |
| Commander's Licence: | Private Pilot's Licence |
| Commander's Age: | 27 years |
| Commander's Flying Experience: | 70 hours (of which 7 were on type) Last 90 days - 2 hours Last 28 days - 2 hours |
| Information Source: | Aircraft Accident Report Form submitted by the pilot |

The pilot reported that he had returned from a one hour local flight with four people on board. Three further passengers were then briefed and boarded the aircraft. The pilot completed his pre-flight checks as per his checklist including the engine power checks and pre take-off checks.

The pilot then lined up on Runway 24 and accelerated for takeoff. Towards the end of the grass, uphill (1.81% slope) 488 metres long take-off run, the aircraft had not achieved flying speed. The pilot therefore abandoned the take off but could not bring the aircraft to a stop before it collided with the hedge beyond the end of the runway. The occupants were uninjured and vacated the aircraft by the normal means.

The pilot stated that he had inadvertently left the carburettor heat selected to hot. He also commented that the ground speed appeared to be high compared to the airspeed indication. The surface wind was quoted as being from 150° at 5 kt, giving a 1 kt headwind and 5 kt crosswind

component. The airfield elevation is 250 feet amsl and a Met Office aftercast indicated that the surface temperature was +19°C.

The take-off weight was calculated from the pilot's estimate as 2,288 lbs. From the manufacturer's Pilot's Operating Handbook, using this data, the calculated take-off ground roll (flaps 25°, full throttle before brake release, paved, level, dry runway) was 800 feet. This was factored in accordance with the CAA General Aviation Safety Sense leaflet 7B, Aeroplane Performance, for the uphill slope and dry grass surface. This gave an unfactored take-off ground roll required of 1,046 feet (319 metres). Factoring this data by 1.33 in accordance with the CAA recommendation gave a takeoff ground roll requirement of 1,391 feet (424 metres) compared with the 488 metres runway available.

No performance data is published to account for the loss of engine power due to the carburettor heat being selected on at high power settings during take off.