

No: 3/84

Ref: EW/G83/11/11

Aircraft type and registration: PA 38 Tomahawk G-BSFC (light single engine fixed wing aircraft)

Year of manufacture: 1978

Date and time (GMT): 28 November 1983 at 1205 hrs

Location: 2 nautical miles north of Brackley, Northamptonshire

Type of flight: Private

Persons on board: Crew – 1 Passengers – Nil

Injuries: Crew – None Passengers – N/A

Nature of damage: Right undercarriage detached which penetrated the right fuselage side

Commander's Licence: Private Pilot's Licence

Commander's Age: 33 years

Commander's total flying experience: 69 hours (of which 43 hours were on type)

The aircraft was being flown at 2,000 ft QNH in VMC from Nottingham to Oxford. Approximately 5 nms south of Daventry an engine vibration started which rapidly got worse. The pilot did not associate the rough running with carburettor icing but because the aircraft was being run on mogas, which increases the risk of carburettor icing, the pilot applied carburettor heat. The engine vibration increased and the aircraft was unable to maintain height. As the application of carburettor heat had failed to improve the engine performance the pilot returned it to the 'normal' position and carried out checks on all the remaining engine systems which included changing the fuel tank selection and switching on the electric fuel pump. The aircraft continued to lose height and at 800 ft agl the pilot elected to carry out a forced landing. A flapless approach and landing was made into a large field of winter barley during which the right undercarriage struck the boundary hedge causing it to detach.

The engine was subsequently ground run and no fault found. An Airworthiness Directive that required the replacement of the Main Landing Gear Attachment Bolts with new improved high tensile strength bolts had not been complied with. Examination of all the attachment bolts showed that those from the right undercarriage failed due to overloading in shear and those from the left undercarriage had shear forces applied but had not failed. There was no evidence of pre-existing shear forces or failure having occurred to any of the attachment bolts prior to the accident.