ACCIDENT

Aircraft Type and Registration:	Piper PA-38-112 Tomahawk, G-BGWU
No & type of Engines:	1 Lycoming O-235-L2C piston engine
Year of Manufacture:	1978
Date & Time (UTC):	30 September 2006 at 1800 hrs
Location:	Full Sutton Airfield, Yorkshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Damage to landing gear, left wing, propeller and fuselage
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	61 years
Commander's Flying Experience:	167 hours (of which 71 were on type) Last 90 days - 32 hours Last 28 days - 7 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

After landing, when the nosewheel made contact with the ground, the aircraft veered uncontrollably to the left. The aircraft struck a low grass bank, damaging the propeller and fuselage, causing the nose and left landing gear to break off. Both the pilot and passenger were uninjured. An examination of aircraft immediately after the incident showed that the left landing gear attachment bolt had failed at the location of a pre-existing crack, associated with an area of bolt deformation.

History of the flight

After a reportedly normal touchdown on the main wheels on Runway 22, the aircraft veered to the left after the nosewheel made contact with the ground. Despite the application of opposite rudder and right brake, the aircraft continued to turn left, departed the runway and traversed the corner of a small grass bank surrounding an irrigation pond. The impact with the bank resulted in the separation of the nose and left landing gear and damage to the propeller, left wing and fuselage. The aircraft came to rest on a taxiway at the holding point for Runway 22.

An inspection of the aircraft after the incident revealed that the nosewheel steering mechanism and torque link were intact and that the left landing gear main attachment bolt had failed. Examination of the bolt showed it had failed in a region where the bolt had been

deformed. Approximately 65% of the fracture surface showed evidence of crack progression due to a fatigue mechanism, with the remaining 35% exhibiting the characteristics of an overload failure. Discolouration of the fatigue fracture surface indicated that the crack had been present in the bolt for some time before it failed.

The most probable cause of the deformation was considered to have been a heavy landing, and this may also have been the initiating event for the fatigue crack. The aircraft logbook contained no record of such an event so it was not possible to determine for how long the damage had been present prior to the accident.