

AAIB Bulletin No: 10/94

Ref: EW/G94/06/17

Category: 1.3

Aircraft Type and Registration: Piper PA-34-200-2 Seneca I, G-SSFC

No & Type of Engines: 2 Lycoming IO-360-CIE6 piston engines

Year of Manufacture: 1973

Date & Time (UTC): 19 June 1994 at 1125 hrs

Location: Stapleford Airfield, Essex

Type of Flight: Public Transport

Persons on Board: Crew - 1 Passengers - 4

Injuries: Crew - None Passengers - None

Nature of Damage: Lower nose fuselage area, nose landing gear doors, nose landing gear attachments, both propellers and both engines shock loaded

Commander's Licence: Basic Commercial Pilot's Licence

Commander's Age: 57 years

Commander's Flying Experience: 4,450 hours (of which 400 were on type)
Last 90 days - 100 hours
Last 28 days - 46 hours

Information Source: Aircraft Accident Report Form submitted by the pilot, engineering examination by the AAIB and metallurgical examination

At the end of the second flight of the day the pilot joined the airfield circuit pattern on the dead side of the runway in use and selected the landing gear down and reduced both the engine powers so that the aircraft would be at the correct height and speed when joining the downwind leg of the training traffic circuit. At this stage the pilot observed three green landing gear down and locked indication lights. The pre-landing checks were carried out on the downwind leg and the first stage of flap selected. On the base leg the second stage of flap was selected and both the engine powers reduced. After turning onto the final approach full flap was selected and the finals check carried out which included checking that the three green landing gear down and locked indicator lights were illuminated. The pilot closed the throttles at approximately 50 feet and a smooth touchdown was made. At the end of the landing roll, just before clearing the runway the nose landing gear slowly collapsed. The pilot stated that at no stage prior to the touchdown did the landing gear warning horn sound.

Engineering examination revealed that the fuselage structure where the nose landing gear hydraulic actuator and down-lock link attached to the forward fuselage bulkhead had failed in a rearward direction which, because of the geometry of the nose landing gear, would be consistent with a large forward force being applied to the nosewheel. Metallurgical examination of a number of items that had been damaged in the area of the failure showed that they had failed or distorted during a single event. None of the items showed any evidence of a progressive failure or distortion. Following repair of the aircraft extensive landing gear extension and retraction tests were conducted with no faults being found. Approximately 15 flights prior to the accident the aircraft had undergone extensive maintenance during which the landing gear system had been overhauled.

The aircraft's maintenance organisation assessed that the damage to the nose landing gear may have been caused by towing the aircraft using a tow arm attached to the nose landing gear.