No: 10/90 **Ref: EW/G90/06/02** **Category: 1c**

Aircraft Type and Registration:	Piper PA-34-200, G-BNNB
No & Type of Engines:	1 Lycoming IO-360-C1E6 piston engine (left) 1 Lycoming LIO-360-C1E6 piston engine (right)
Year of Manufacture:	1973
Date and Time (UTC):	9 June 1990 at 1412 hrs
Location:	Bournemouth International Airport, Dorset
Type of Flight:	Commercial
Persons on Board:	Crew - 2 Passengers - None
Injuries:	None - None Passengers - N/A
Nature of Damage:	Nose, nose landing gear doors and propellers damaged
Commander's Licence:	Commercial Pilot's Licence with Instrument and Instructor ratings
Commander's Age:	37 years
Commander's Total Flying Experience:	3,958 hours (of which 324 were on type)
Information Source:	Aircraft Accident Report Form submitted by the pilot and telephone inquiries to the repair agency.

The aircraft had completed an instrument rating (IR) training sortie from Bournemouth Hurn Airport, followed by an uneventful rejoin downwind for runway 35 with the instructor handling the aircraft. The downwind checks were completed with no abnormality becoming apparent. The landing gear was selected down, the gear was heard to extend, and "3 greens" were obtained and verified by both crew members. Thereafter the base leg and finals proceeded without incident.

A smooth touchdown was made on the main wheels with engines at idle, and the nosewheel was lowered smoothly. However, the commander then sensed that the nose was lowering further than normal and immediately pulled both mixture controls to idle cut-off. The nose contacted the ground and the propellers struck the tarmac as the aircraft slid along the runway, coming to rest slightly to the left of centreline. On stopping, the aircraft was checked for safety and evacuated.

Once the aircraft had been confirmed as safe, but before it had been otherwise disturbed, the master switch was switched on and the landing gear indicator was still found to be showing "3 greens", despite the fact that the nose-leg was partially retracted into the bay. The "3 greens" indication was independently verified by the engineer who recovered the aircraft from the runway.

During recovery of the aircraft, the emergency lowering system was operated and the landing gear extended and locked-down normally. Examination of the system failed to identify any abnormality apart from a slight burr on one of the operating links, which it was believed was produced as the landing gear collapsed and would not have explained the spurious nose landing gear indication. However, repeated bench-checking of the nose leg *gear locked* microswitch failed to produce any malfunction. Both the microswitch and the damaged link were replaced and the aircraft has since flown without any further problem becoming apparent.

The engineer who repaired the aircraft pointed out that the landing gear hydraulic system supplies pressure to the *down* side of the landing gear hydraulic actuators until all three legs are down and locked; once all three *gear locked* microswitches are closed, the hydraulic pump is switched off. The main landing gear legs typically extend and lock before the nose leg, and it is therefore possible that a malfunctioning microswitch on the nose leg could switch off the hydraulic pump before the nose leg locks fully down, allowing the leg to fold when loaded during touchdown.