

**AAIB Bulletin No: 4/93**

**Ref: EW/G93/01/06**

**Category: 1c**

**Aircraft Type and Registration:** Piper PA-28R-200 Cherokee Arrow II, G-BHIR

**No & Type of Engines:** 1 Lycoming IO-360-C1C piston engine

**Year of Manufacture:** 1969

**Date & Time (UTC):** 14 January 1993 at 1315 hrs

**Location:** Sleaf Airfield, Shropshire

**Type of Flight:** Aerial Work (Training)

**Persons on Board:** Crew - 2 Passengers - None

**Injuries:** Crew - None Passengers - N/A

**Nature of Damage:** Damage to nose landing gear, propeller, engine and cowling

**Commander's Licence:** Basic Commercial Pilot's Licence with Instructor Rating

**Commander's Age:** 49 years

**Commander's Flying Experience:** 7,191 hours (of which 67 were on type)  
Last 90 days - 111 hours  
Last 28 days - 30 hours

**Information Source:** Aircraft Accident Report Form submitted by the pilot

The aircraft was on a familiarisation and type conversion training flight from Manchester Airport. The handling pilot was the holder of a Private Pilot's Licence, who had previous experience on the PA-38 Tomahawk aircraft, but not on the PA-28 series. The initial part of the flight involved upper air work, engine handling, a demonstration of the automatic deployment of the landing gear, retraction using the landing gear override system, and practice at setting up the normal approach configuration. When the instructor was satisfied with the student's progress, the aircraft was flown to join the right hand circuit pattern for Runway 23 at Sleaf Airfield. The first circuit was demonstrated by the instructor, and control was handed over to the student during the subsequent climb out.

The aircraft was levelled off at 1,000 feet agl on the crosswind leg, but gained height slightly during the turn onto the downwind leg. The landing gear was lowered using the normal system, and the pre-landing checks were carried out. The instructor positively checked the three green light landing gear indication, having felt the landing gear lock down, and perceived the usual increased airflow noise. During the turn onto the base leg, another increase in height occurred, leaving the aircraft at around 1,250 feet agl. Power was reduced, and two stages of flap selected. On completion of the turn onto

final approach, the propeller pitch was set fully fine, the landing gear checked down, and the flaps selected to full for landing. At this time, the instructor noted that the student's hand was in the vicinity of the landing gear lever. From the instructor's position in the right hand seat, the view of the landing gear lights and operating switch is partially obscured by the throttle quadrant on this type of aircraft.

The instructor's attention was drawn to two other aircraft which could possibly have affected the approach of G-BHIR. The airspeed was allowed to increase to around 110 mph during the approach, and the instructor advised the student to reduce power and raise the pitch attitude to establish a normal approach path. The latter part of the approach was perceived by the instructor to be normal, and touchdown was achieved on the mainwheels some 30 metres in from the threshold of the runway. As the nose was lowered the propeller struck the runway surface, and the aircraft slid to a halt in a short distance. There was no fire. The occupants, who were wearing lap and diagonal harnesses, were uninjured and vacated the aircraft by the normal means. The landing gear switch was subsequently found to be in the 'UP' position.

The aircraft is equipped with a backup landing gear extender system, which extends the landing gear under low airspeed/power conditions, even though the landing gear may not have been selected down. The system is designed to command the lowering of the landing gear at airspeeds between 85-100 mph, dependant upon pressure altitude.

The commander stated that eye witnesses to the accident noted that the landing gear started to deploy as the aircraft rounded out for landing. He concluded that the landing gear must have been selected up after the final checks had been carried out, and that the airspeed and power combination at the time had allowed the retraction to take place, unnoticed during the high work load on the approach.

The landing gear selector switch on the PA-28R is in a similar position, relative to the throttle quadrant, to that of the Carburettor Heat control on the PA-38 aircraft.

The operator has now amended its training syllabus to ease the workload associated with this type of conversion flying.