

Piper PA-28R-201, G-OARA

AAIB Bulletin No: Ref: EW/G2001/02/12 **Category:** 1.3

Aircraft Type and Registration: Piper PA-28R-201, G-OARA

No & Type of Engines: 1 Lycoming IO-360-C1C6 piston engine

Year of Manufacture: 1988

Date & Time (UTC): 16 February 2001 at 0910 hrs

Location: Cranfield,, Bedfordshire

Type of Flight: Training

Persons on Board: Crew - 1 - Passengers - 1

Injuries: Crew - None - Passengers - None

Nature of Damage: Engine shock loaded, propeller damaged,
minor damage to undersurface of fuselage

Commander's Licence: Basic Commercial Pilot's Licence with instructor rating

Commander's Age: 62 years

Commander's Flying Experience: 11,000 hours (of which 300 were on type)
Last 90 days - 75 hours
Last 28 days - 30 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

History of the flight

The flying instructor and his student were conducting a training flight at Cranfield airport concentrating upon circuit flying. Runway 04 was the runway in use with a right hand circuit in operation. The meteorological conditions were reported as: surface wind 320°/09 kt, visibility 3,000 metres in haze, a few clouds at 1,500 feet, no significant weather, temperature +5°C, QNH 1032 hPa.

The student had successfully completed a normal circuit and landing and the instructor then requested a 'high glide' circuit. The instructor later reported that whilst on the downwind leg, flown at 1,300 ft agl, the student had difficulty in assessing the position at which to close the throttle for the glide approach. The student did not complete his pre-landing checks and the instructor made the downwind call for the student. During the glide approach the instructor believed that the aircraft was too low. He applied power to re-establish the aircraft on the correct approach path before reducing power to flight idle again. The aircraft was cleared for a touch and go and landing flap

was selected. The aircraft landed with the gear still retracted. When the aircraft came to a halt the instructor made the aircraft safe and both pilots vacated the aircraft without assistance. The airfield rescue and fire fighting services arrived at the scene promptly.

When the aircraft was on short finals the tower controller had noted that the undercarriage was not extended. She transmitted a call directed to the aircraft to check '3 greens' but received no response. She then instructed the aircraft to 'Go around - no undercarriage' but the flight crew did not hear this transmission.

Undercarriage warning system

This aircraft was fitted with an undercarriage warning system. A microswitch in the throttle quadrant activates a warning horn and a red 'WARNING GEAR UNSAFE' light under the following conditions.

- a Gear up and power reduced below approximately 14 inches of manifold pressure.
- b Whenever the flaps are extended beyond the approach position (10°) and the landing gear are not down and locked.
- c Gear selector switch UP while on the ground and the throttle in the retarded position.

After the accident the aircraft was placed on jacks at Cranfield and retraction tests were completed satisfactorily. However, the undercarriage warning horn did not activate when the gear was UP, the flaps set to LAND and throttle retarded below 14 inches of manifold pressure. The aircraft was partially dismantled and transported to the company maintenance centre at Elstree Aerodrome. A further set of retraction tests were then completed following repair and maintenance and on this occasion the undercarriage warning horn operated correctly. An air test was conducted and the aircraft was found to be serviceable.

The operator also utilises other Piper aircraft of this particular type that are fitted with an automatic gear lowering system. With this system gear extension occurs, even if the selector is in the UP position, at airspeeds below approximately 105 mph with the engine throttled back. This aircraft was not fitted with the automatic gear lowering system, as clearly stated in the owners handbook.