

**No: 3/92**

**Ref: EW/G91/11/08**

**Category: 1c**

**Aircraft Type and Registration:** Piper PA-34-200-2, G-FLYI

**No & Type of Engines:** 2 Lycoming IO-360-C1E6 piston engines

**Year of Manufacture:** 1972

**Date & Time (UTC):** 21 November 1991 at 1114 hrs

**Location:** Elstree Airfield, Hertfordshire

**Type of Flight:** Private

**Persons on Board:** Crew - 1                      Passengers - 1

**Injuries:** Crew - None                      Passengers - None

**Nature of Damage:** Both propellers damaged and engines shock loaded, minor damage to fuselage underside, nose landing gear doors and cabin step

**Commander's Licence:** Commercial Pilot's Licence with Instrument, Night and Instructor ratings

**Commander's Age:** 28 years

**Commander's Flying Experience:** 3,200 hours (of which 500 were on type)

**Information Source:** Aircraft Accident Report Form submitted by the pilot, witness statements and further inquiries by AAIB

The aircraft was scheduled for a maintenance test flight to check that previous rectification of a propeller overspeed problem and adjustment of the landing gear warning horn microswitch were satisfactory. The tests were to be carried out during a normal circuit of the airfield.

After completion of the take-off checks, the aircraft carried out a normal departure during which the propeller governing was observed to operate correctly. The landing gear warning microswitch was then tested during the downwind leg and also operated satisfactorily when both throttles were retarded to 14 inches manifold pressure. The pilot noted, however, that the associated horn did not cancel until both throttles had been advanced to a setting which gave more than 21 inches manifold pressure.

The pilot stated that he observed the 'gear down and locked' light indication during his downwind, base leg and finals checks. The final approach and landing flare were conducted normally, and the landing gear warning horn did not sound. The first indication to the pilot that the landing gear was still retracted was when the propeller tips touched the runway. After this contact the engine stopped and

the aircraft slid along the runway on its underside. Two observers on the airfield had seen the aircraft on final approach with the landing gear fully retracted.

The maintenance engineers who subsequently recovered the aircraft noted that, although the landing gear selector lever was in the DOWN position, the landing gear was fully 'locked up' and the main landing gear doors appeared undamaged. After lifting the aircraft, the landing gear 'free-fell' easily and the aircraft was towed away.

During hangar checks the first attempt to retract the landing gear was unsuccessful and it was noticed that the 5 amp circuit breaker in the electrical supply to the landing gear control and indication circuits had 'tripped', although the 10 amp supply circuit breaker to the gear motor had not. The 5 amp breaker was reset, but 'tripped' again immediately. Electrical checks then revealed that there was a permanent 'short' to earth at the throttle microswitch where one of the wire terminal tags had come into hard contact with the microswitch support bracket. (See photograph and diagrams) The microswitch was separated from the metal bracket by a stack of washers but one of its terminals was found bent towards the bracket. It was noted that the microswitch terminals, (even in a new microswitch) were able to move a little, relative to the body. There was no insulation between this terminal and the bracket.

Fig 1  
Scrap views of  
Landing gear warning  
Microswitch installation  
on Throttle System

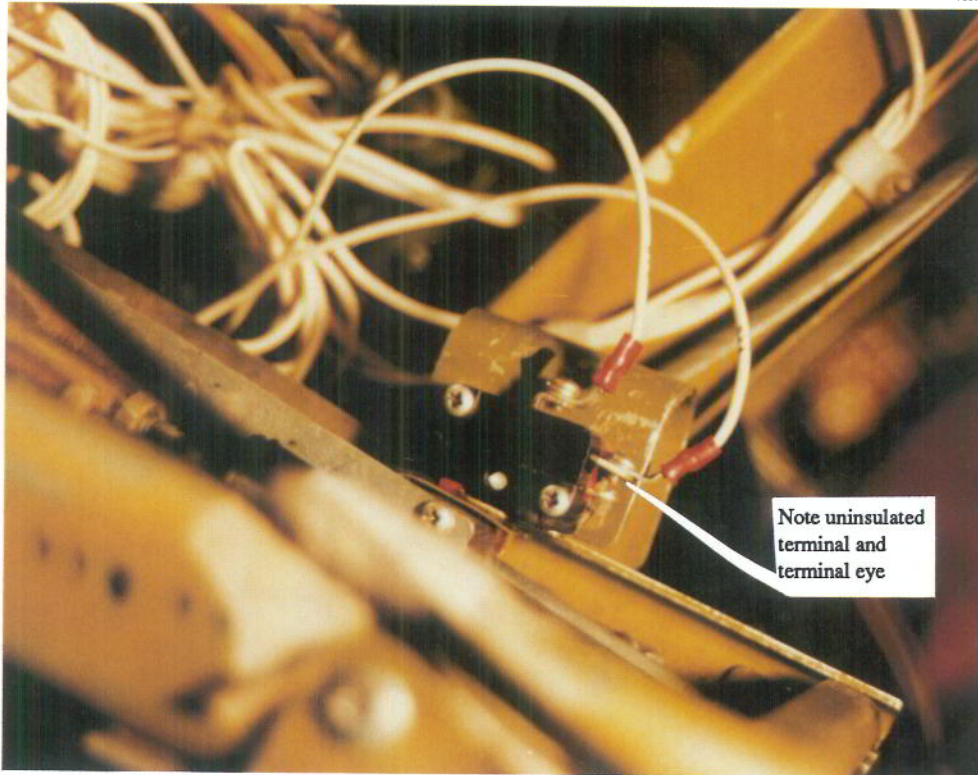
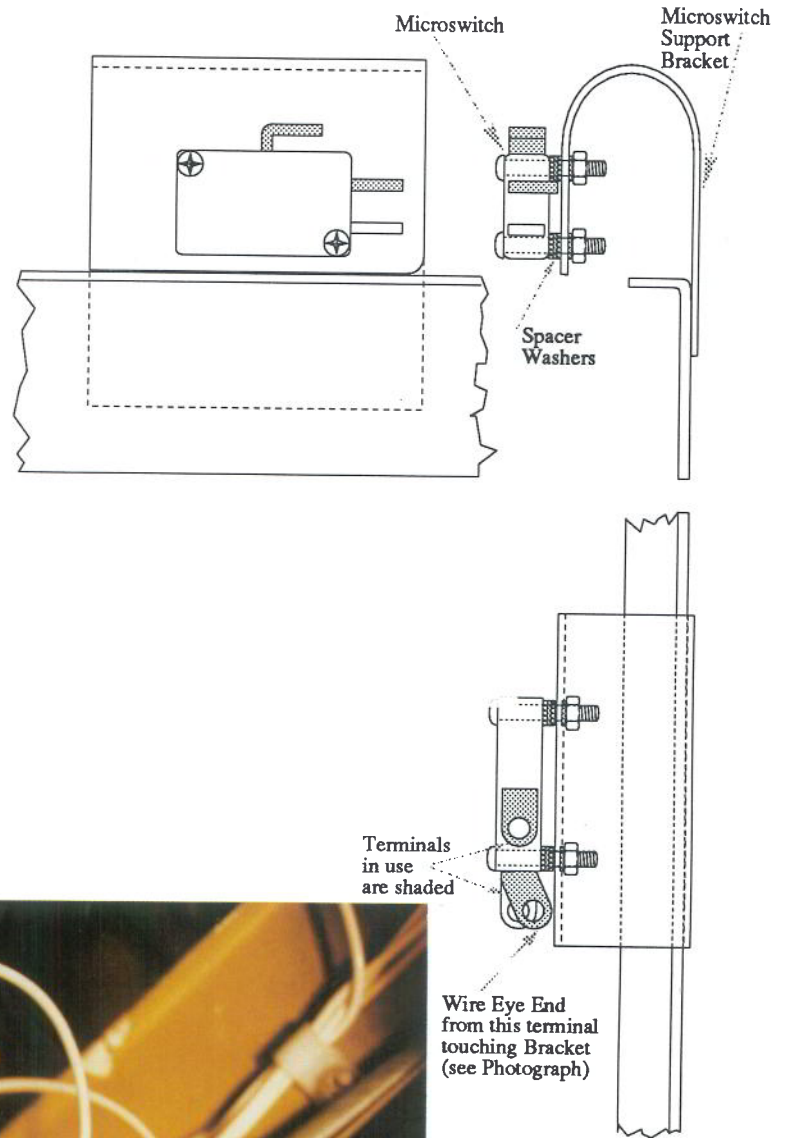


Fig.2 Installation on G-FLYI