Piper PA-24-260 Comanche, G-BRXW

AAIB Bulletin No: 7/2002	**Ref: EW/G2002/01/18**	**Category: 1.3**
Aircraft Type and Registration:	Piper PA-24-260 Comanche, G-BRXW	
No & Type of Engines:	1 Lycoming O-540-E4A5 piston engine	
Year of Manufacture:	1964	
Date & Time (UTC):	31 January 2002 at 1056 hrs	
Location:	Coventry Airport	
Type of Flight:	Private	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Damage to propeller and underside of fuselage	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	69 years	
Commander's Flying Experience:	405 hours (of which 145 were on type) Last 90 days - 2 hours Last 28 days - 0 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by AAIB	

The aircraft was returning to the circuit at Coventry Airport after a local flight with two pilots on board. The pilots intended to carry out a touch and go landing on Runway 23, followed by a further circuit. The approach and landing, using the first stage of flap, was normal. The wind was from 200° at 13 to 15 kt. During the landing roll, the pilot-in-command (PIC), who was the non-handling pilot in the right seat, observed that the handling pilot selected the landing gear up.

Their normal procedure was to confirm identification of the flap control switch before making any selection. On this occasion, the handling pilot mistakenly put his hand on the landing gear selector switch and selected it up, before the PIC could intervene. Consequently, the landing gear retracted and the aircraft, which had a groundspeed of approximately 30 kt, settled onto its fuselage and slid to a halt on the runway.

The handling pilot shut down the aircraft and both crew members disembarked normally. The airfield fire and rescue services attended the scene without delay but there was no fire.

The aircraft had undergone an annual maintenance inspection two weeks before the accident. Prior to that, the owners had reported to the maintenance organisation that the oleo extensions appeared low. During the maintenance, these were checked and the oleos were inflated. Because the aircraft did not have the full fuel load as specified in the maintenance procedure, the oleos were inflated "slightly more" than that prescribed. The intention was that, with a full fuel load, the oleos would settle to their correct extension.

From the aircraft Service Manual, the recommended main landing gear oleo extension was 2.75 inches. Following the accident the oleo extensions were found to be significantly greater than the recommended amount. However, they were still within the range in which the anti-retraction switch, located on the left main landing gear, could provide retraction protection in the event of an inadvertent 'UP' selection with the aircraft's weight on its wheels. The handling pilot commented that the excessive oleo extension was noted during the pre-flight inspection, but it was decided to operate the aircraft with the oleos in that condition.

It is therefore likely that, during the landing roll, the combination of the aircraft's ground speed and the wind velocity resulted in an airspeed of approximately 40 to 45 kt. This, combined with the flap setting and the additional static oleo extension, would have been sufficient to extend the oleo out of the anti-retraction switch protection range. The lack of scuff marks on the mainwheel tyres or damage to the landing gear doors is further evidence that the aircraft was at least 'light on its wheels' when the landing gear retraction process occurred.

The pilot's report candidly explained that the wrong selection was made during the landing roll. The handling pilot also commented that he wished to highlight the importance of ensuring that the correct oleo extension exists prior to flight so that the design landing gear retraction protection facility is not compromised.