

ACCIDENT

Aircraft Type and Registration:	Beech 76 Duchess, G-OADY	
No & Type of Engines:	2 Lycoming O-360-A1G6D piston engines	
Year of Manufacture:	1978	
Date & Time (UTC):	17 September 2011 at 0915 hrs	
Location:	Leeds Bradford Airport	
Type of Flight:	Training	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Damage to the nose cone, nosewheel bay doors, both propellers and both engines	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	37 years	
Commander's Flying Experience:	1,820 hours (of which 223 were on type) Last 90 days - 108 hours Last 28 days - 35 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The nose landing gear collapsed during the landing roll. The selection lever had been moved several times during the flight, as part of a training exercise, and may have been left slightly out of position, although no warning was generated.

History of the flight

The aircraft was being flown by a pilot undergoing instruction for a Commercial Pilot's Licence. One of the exercises carried out on the detail was to practise stalling in the landing configuration. The exercise was completed successfully and the aircraft was flown back towards Leeds Airport.

Shortly before joining the downwind leg of the circuit, the pilot-under-instruction noticed and commented to his instructor that, at 110 kt IAS, the airspeed was some 5 kt to 10 kt lower than he expected. The power setting and flap positions were checked and it was noticed that the landing gear was down, with an indication of three green lights. The instructor had earlier heard the pilot-under-instruction call "gear up", after the last stall recovery, and seen him reach for the landing gear selector lever. He thought it was unusual that this was done but that the action was not, apparently, completed by selecting the landing gear UP. However, both pilots put it down to an inadvertent error by the pilot-under-instruction and gave it no further thought.

The aircraft was about to join the circuit so the landing gear was left down. When downwind, the pre-landing checks were carried out, which included a verbal check of “gear down and check three greens”: a further check of the landing gear was also made on final approach. The aircraft landed normally but about 100 m to 150 m into the landing roll the nose landing gear collapsed and the aircraft came to an abrupt halt. Before evacuating, the pilots noted that the landing gear lever was in the UP position.

Discussion

There have been a number of occasions when the landing gear on this type of aircraft has retracted during the landing roll as a result of a mistaken UP selection of the landing gear lever. The landing gear interlock depends upon an airspeed switch which becomes active at between 59 kt and 63 kt; there is no weight on wheels switch. If the landing gear is selected UP at an indicated airspeed greater than this, it will retract. The switch on G-OADY was tested following this event and found to operate within this speed range.

Further tests by the operator’s maintenance organisation, using other aircraft of the same type raised on jacks, showed that when the landing gear has been locked down it is then possible to move the selector lever UP a small distance and break the hydraulic lock. However, they reported that this was difficult to do, because the landing gear lever has to be pulled out before it is moved up. The three green lights can remain ON in this condition but the landing gear is unsafe. It was impossible to get the three green lights indication when not fully lowering the landing gear

because they do not come on until after the hydraulic lock has been made.

After the incident the Chief Flying Instructor, flying the same type of aircraft, was able to recreate the condition in flight, whereby the three green landing gear indication lights were ON but the landing gear was not locked down. He commented that it was difficult to achieve.

Both pilots were certain that the landing gear lever had not been selected UP during the landing roll. They thought that the lever could, perhaps, have been knocked upwards accidentally by contact with the pilot-under-instruction’s knee during the landing. However, when testing this theory afterwards, they determined that, because the selector has to be pulled out before it is moved up, it could not have been knocked up accidentally from the locked down position. However, if the selector had been pulled out earlier, and thus was not locked-down, then it would have been possible to knock it up accidentally.

Safety action

The company’s Standard Operating Procedures require flaps to be selected UP once the runway has been vacated and, in the event of a touch-and-go, the instructor to raise the flaps when the aircraft has decelerated to a safe speed. Since the accident the operator has added a requirement for a physical check of the landing gear lever position, as well as a visual observation of three green lights when confirming that the landing gear is down.