

## ACCIDENT

<b>Aircraft Type and Registration:</b>	Grob G115D2, G-BVHF	
<b>No &amp; Type of Engines:</b>	1 Lycoming AEIO-320-D1B piston engine	
<b>Year of Manufacture:</b>	1994	
<b>Date &amp; Time (UTC):</b>	27 April 2011 at 1807 hrs	
<b>Location:</b>	Dundee Airport, Scotland	
<b>Type of Flight:</b>	Training	
<b>Persons on Board:</b>	Crew - 2	Passengers - None
<b>Injuries:</b>	Crew - None	Passengers - N/A
<b>Nature of Damage:</b>	Engine shock-loaded, nose leg and propeller damaged	
<b>Commander's Licence:</b>	Student	
<b>Commander's Age:</b>	19 years	
<b>Commander's Flying Experience:</b>	25 hours (of which 4 were on type) Last 90 days - 4 hours Last 28 days - 4 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

## Synopsis

The student, with his instructor, was flying a number of touch-and-go landings when, following a firm touch down on the main and nosewheels, the nose landing gear collapsed.

### History of the flight

The student flew a number of touch-and-go landings and his instructor commented that the first two were executed reasonably well though he did notice some nosewheel shimmy. On the third landing the aircraft touched down firmly on its main and nosewheels and at the same time the aircraft experienced severe nosewheel shimmy. The instructor advised the student not to overuse the rudder pedals to compensate for the shimmy, but to reduce the pressure on the nosewheel

by easing back on the control column. As this action caused the shimmying to stop, the instructor allowed the student to continue with the takeoff. On the next landing the aircraft touched down on its main wheels and as the nosewheel was lowered onto the runway it collapsed.

### Nosewheel shimmy

Nosewheel shimmy is caused by excessive vibration of the wheel when it is in motion. The Grob 115D2 is equipped with an oil-filled shimmy damper that is designed to dampen out the vibration. However, shimmy can still occur if the damper is not correctly maintained, the runway surface is poor or a load is placed on the nosewheel while the aircraft is travelling

along the runway at a relatively high speed. The latter effect can be reduced by landing on the mainwheels and keeping the load off the nosewheel by applying a backward pressure on the control column.

### **Damage to the aircraft**

The maintenance organisation advised the AAIB that the nose leg collapsed as a result of the failure of the lower attachment on the shock strut and were of the

opinion that the damage was due to the aircraft landing heavily on its nosewheel. The shimmy damper was assessed as being serviceable and its attachment brackets were still intact.