

## ACCIDENT

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|--|---|-------------------|
| <b>Aircraft Type and Registration:</b> | Beech 76 Duchess, G-GCCL  |                   |
| <b>No &amp; Type of Engines:</b>       | 2 Lycoming LO-360-A1G6D piston engines  |                   |
| <b>Year of Manufacture:</b>            | 1980 (Serial no: ME-322)  |                   |
| <b>Date &amp; Time (UTC):</b>          | 9 November 2014 at 1340 hrs   |                   |
| <b>Location:</b>                       | Cambridge Airport   |                   |
| <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>               | Nose cone and front section of nose gear doors  |                   |
| <b>Commander's Licence:</b>            | Commercial Pilot's Licence  |                   |
| <b>Commander's Age:</b>                | 28 years  |                   |
| <b>Commander's Flying Experience:</b>  | 3,255 hours (of which 20 were on type)<br>Last 90 days - 141 hours<br>Last 28 days - 44 hours |                   |
| <b>Information Source:</b>             | Aircraft Accident Report Form submitted by the pilot and further inquiries by the AAIB        |                   |

## Synopsis

After selecting the landing gear lever to DOWN, the nose landing gear failed to extend. After several further attempts, an approach to Cambridge Airport was made with the nose landing gear retracted. The aircraft touched down and the nose was held up for as long as possible before it descended and contacted the runway surface.

Neither flight crew sustained any injuries. The reason for the failure of the gear to extend could not be established at the time of this report. Previous events have identified reasons why the nose gear may not extend and that this aircraft type requires accurate rigging and vigilant maintenance of the nose landing gear.

## History of the flight

The aircraft was engaged on a training flight which initially consisted of assessing the aircraft handling characteristics, including the effects of lowering the landing gear. After selecting the landing gear lever to the DOWN position, the main landing gear extended successfully. However, the nose landing gear transit light remained on and the green light indicating that it was down and locked did not illuminate. The flight crew then performed a visual check which confirmed that the nose gear was still retracted.

The landing gear lever was cycled but the nose landing gear still did not extend. The emergency gear deployment system was also operated with the same result. Further

attempts to lower the nose landing gear were made by manoeuvring to increase the normal acceleration but to no avail.

The flight crew elected to divert to Cambridge Airport due to the length of the runway, wind direction and fire service capability. The aircraft was placed in a hold at 4,000 ft to burn fuel, during which the crew briefed for the landing, secured loose items and tightened their harnesses.

Prior to the approach, the aircraft was flown past the tower for a visual confirmation of the main landing gear position. A long approach to Runway 23 was flown with full flap and the engine power reduced to gauge the aircraft's glide performance. Once the crew considered that landing was assured, the engines were shut down and the propellers feathered, with the left propeller stopping almost horizontal. The student pilot briefly operated the starter for the right engine to align it horizontally to prevent any possible propeller damage from the runway. The magnetos, alternator and battery were then selected OFF.

The aircraft touched down on its main wheels and the nose was held up for as long as possible but eventually it contacted the runway and the aircraft came to a halt. After confirming the aircraft was secure, both crew exited the aircraft without injury.

### Previous events

In May 1989, the aircraft manufacturer issued 'Safety Communique 76-91' indicating that there had been previous events of this aircraft type being unable to extend the nose landing gear. The document provided possible reasons why and a number of maintenance actions. In addition, 'Service Instructions (SI) No 1209' was issued in May 1983 and 'Mandatory Service Bulletin (SB) No 2310' in October 1989. These highlighted modifications to reduce the possibility of any binding of the nose gear doors or linkages and lubrication intervals of the hinges as:

*'each 60 days thereafter, if operating under more severe conditions, lubricate the hinges more frequently.'*

The aircraft operator confirmed the embodiment of SI 1209 and SB 2310 and that the last lubrication was on 27 October 2014. Retraction and rigging checks were performed during the last annual check on 4 August 2014. They added that:

*'doors are checked at all inspections for freedom of movement and lubricated (with WD40 as recommended by Beech) with extra attention given to greasing pin and fork on U/C. Doors are disconnected/reconnected at annual inspections and 150 hour inspections and retraction checks are carried out to check landing gear and door operating mechanism. In addition to 6 weekly lubrication, extra lubrication is carried out if the aircraft has stood for long periods.'*

**Aircraft examination**

The aircraft was jacked after the event and the operator reported that the nose landing gear appeared to be resting on the closed doors. After some manual assistance, the doors opened and the gear extended. Subsequently, the aircraft was recovered to a hangar but, as it had not been examined further, the reason why the nose landing gear did not extend could not be reported. The operator has been made aware of the previous possible causes and confirmed they will assess the aircraft damage accordingly.