

AAIB Bulletin No: 3/94

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Category: 1.3

Aircraft Type and Registration: Beech 76 Duchess, G-WACJ

No & Type of Engines: 2 Lycoming O-360-A1G6D piston engines

Year of Manufacture: 1980

Date & Time (UTC): 30 January 1994 at 1548 hrs

Location: Wycombe Air Park, Buckinghamshire

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - 1

Injuries: Crew - None Passengers - None

Nature of Damage: Damage to nose and both engines and propellers

Commander's Licence: Private Pilot's Licence with IMC and Night Ratings

Commander's Age: 32 years

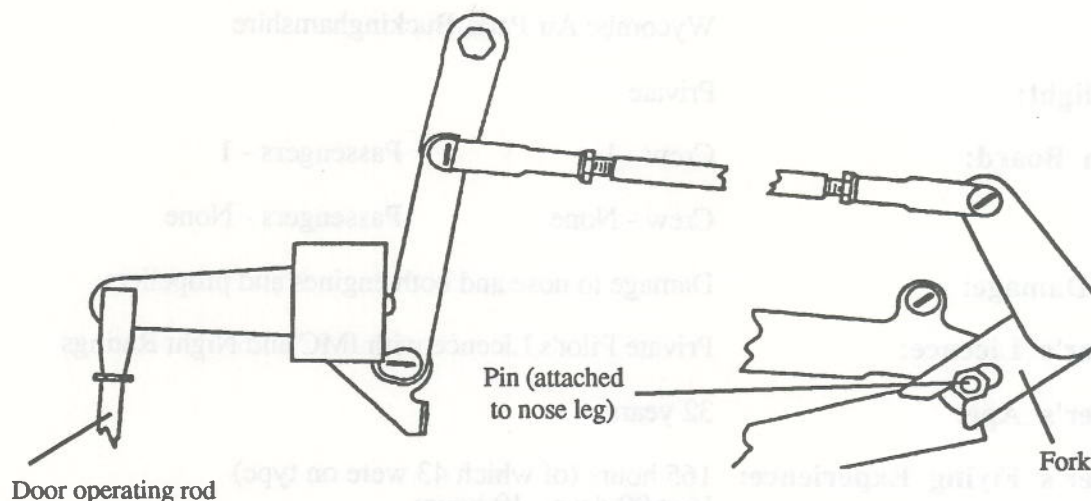
Commander's Flying Experience: 165 hours (of which 43 were on type)
Last 90 days - 19 hours
Last 28 days - 8 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

During the pre-landing checks the landing gear extension only produced two green lights from the main wheels, and on inspection in the mirror it was obvious that the nosewheel had not extended. The manual extension procedure did not lower the nosewheel and the application of 'g' similarly failed.

The pilot was offered advice on how to make an emergency landing using either a glide approach or stopping the engines just before touchdown. He decided that, as it was getting dark and he had never tried gliding the aircraft before, a glide approach across the motorway was too risky. He therefore opted for the power off, propellers feathered, and mixtures leaned just before touchdown technique. The aircraft was slowed on the downwind leg to 90 kt and a full set of checks carried out, and the passenger was briefed on the landing and evacuation procedure to be used. As the aircraft crossed the airfield boundary at 76 kt, all the engine controls were pulled back. The aircraft attempted to float up as it crossed the threshold, and the pilot held the plane off for as long as possible, using rudder to maintain it straight.

Examination of the nose gear mechanism revealed that a 3 inch section of the right-hand nose door hinge had seized, this had prevented the fork from achieving its correct position for the subsequent retraction. In these circumstances the pin will go underneath the fork; witness marks under the fork showed that this had occurred.



NOSE DOOR OPERATING MECHANISM - SHOWN IN RETRACTED POSITION

The nose door hinge line is curved when the hinge is fitted to the aircraft, under these circumstances it is not practical to remove the hinge pin for lubrication. The maintenance organisation described the difficulty of obtaining the specified lubrication (Brayco 300) and demonstrated the difficulty of lubricating the hinge with the pin installed. The Beech Duchess maintenance manual shows WD40 as an approved substitute for Brayco 300 oil and specifies lubrication at 60 day intervals, or less if severe conditions apply.

The mandatory Service Bulletin No 2310, involving inspection of the nose landing gear door linkage and lubrication of the nose landing gear door hinges, had been complied with, and modified nose landing gear door hinge pins had been fitted under Servicing Instruction No 1209.

The last lubrication had been carried out on 20 November 1993, at which time the freefall operation of the nose gear had been timed at 11 seconds - a figure regarded as normal.