

Cessna 337C Super Skymaster, G-BCBZ

AAIB Bulletin No: 6/2004	Ref: EW/G2003/07/03	Category: 1.3
Aircraft Type and Registration:	Cessna 337C Super Skymaster, G-BCBZ	
No & Type of Engines:	2 Continental IO-360-C piston engines	
Year of Manufacture:	1968	
Date & Time (UTC):	7 July 2003 at 1518 hrs	
Location:	Gloucestershire Airport, Cheltenham, Gloucestershire	
Type of Flight:	Private	
Persons on Board:	Crew - 2	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Damage to nose landing gear doors and lower nose panels, nose landing gear, front propeller and engine	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	33 years	
Commander's Flying Experience:	4,750 (none of which were on type)	
	Last 90 days - 197 hours	
	Last 28 days - 67 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Background to the flight

The owner of the aircraft, which is a twin-engine, centre-line thrust aeroplane, had asked the pilot, a Class Rating Examiner, to conduct a skill test to renew his 'Multi-Engine Piston' class rating. The test was to be carried out in the owner's aircraft and, because the pilot had not flown this type before, he consulted the CAA as to the legality of such an arrangement. He was told that it was quite permissible for him to conduct the test, as requested, but he was advised to conduct a familiarisation flight in the aircraft before doing so. The pilot was also informed that the aircraft had some unusual characteristics. In particular, he was told that it possessed a complex hydraulic landing gear retraction system and, in addition, that rear engine reliability issues and difficulties in detecting its failure during takeoff had led to several fatal accidents.

History of the flight

Before departing for the familiarisation flight, the pilot acquainted himself with the emergency checklist and he and the owner discussed the aircraft's systems during a pre-flight inspection. They then boarded the aircraft, together with a friend of the owner. The pilot occupied the left seat and the owner accompanied him in the right seat. The owner's friend sat in the right, rear seat.

The aircraft departed from Runway 27 and successfully completed some general handling in the local area, including one stall in the approach configuration during which the pilot operated both the flaps and the landing gear. The aircraft then returned to the airfield for a touch and go landing on Runway 22.

After a smooth touchdown, the pilot was mindful that he should not delay the rolling takeoff due to the modest runway length (declared Take-Off Distance Available - 972 metres) and light surface wind, which was reported to be from 220° at 7 kt. He was also conscious that he should remember to increase the power on the rear engine first because of difficulties in detecting any failure in its operation. He reached down to select the flap lever to the UP position but inadvertently operated the landing gear retraction lever instead. (The gear lever was in the conventional position on the left side of the throttle quadrant whilst the flap lever was located on the right side of the throttle quadrant.) The pilot reported that he was aware of the nose gradually lowering, he then heard the propeller strike the runway. He closed both the mixture controls and pulled the control column fully back whilst the aircraft slid to a halt on the runway to the left of the centre line. The pilot shut the aircraft down and the occupants, who were all uninjured, exited normally through the right door. The airfield fire service attended the scene but there was no fire.

Discussion

The pilot concluded that a number of factors had contributed to his inadvertent action, which was in essence a simple error. These included fatigue, lack of familiarity with the aircraft, constantly changing between left and right seats as a result of his instructional duties, the relatively short runway with a light surface wind, and his concerns about the difficulties associated with detecting a rear engine failure during the takeoff.

He later commented that the 'weight on wheels' switch, which is located on the nose landing gear, should have prevented the landing gear from retracting but surmised that the extension of the landing gear oleo, being only lightly loaded, may have disabled the protection circuit. The 'weight on wheels' switch has since been tested and found to operate correctly. The main landing gear did not retract because the weight of the aircraft was sufficient to overcome the hydraulic power available for its actuation. Furthermore, the landing gear hydraulic pump is powered by the front engine and this was shutdown before the aircraft had come to a halt.

The pilot considered that the accident could have been avoided if he had asked the owner, sitting in the right seat and nearer to the flap lever, to retract the flaps. Alternatively, he could have asked an instructor to accompany him during the flight, although there was no requirement to do so.

The CAA's advisory publication on Licensing, Administration, Standardisation, Operating Requirements and Procedures (LASORS) states that:

Multi-engine centre-line thrust aeroplanes may be flown using the privileges of an existing valid MEP (Land) Class Rating. However, it is recommended that familiarisation training on centre-line thrust aeroplanes be undertaken before exercising the privileges on such an aircraft.

Thus, whilst the pilot could legitimately fly the aircraft as pilot-in-command, it would have been prudent to conduct the familiarisation training with a currently rated pilot.