

AIRCRAFT SERIOUS INCIDENT SHORT REPORT

CA18/3/2/1191: ZU-BAJ, Premature rotation during take-off roll

Date and time : 7 January 2018, 1600Z
Occurrence type : Serious incident
Aircraft registration: ZU-BAJ
Aircraft manufacturer and model : Kitplanes for Africa, Bushbaby 450
Last point of departure : FASC
Next point of intended landing : FASC
Location of incident site with reference to easily defined geographical points (GPS readings if possible) : FASC, S26°31'26.11" E029°10'11.48"
Meteorological information : Surface wind: 230°/4 kts temperature: 29°C, dew point: 2°C, CAVOK
Type of operation : Private (Part 94)
Persons on board : 1 + 0
Injuries : None
Damage to aircraft : Propeller, spinner and engine cowling

All times given in this report are Co-ordinated Universal Time (UTC) and will be denoted by (Z). South African Standard Time is UTC plus 2 hours.

Purpose of the Investigation:

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (2011) this report was compiled in the interests of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and **not to establish blame or liability.***

Disclaimer:

This report is produced without prejudice to the rights of the CAA, which are reserved.

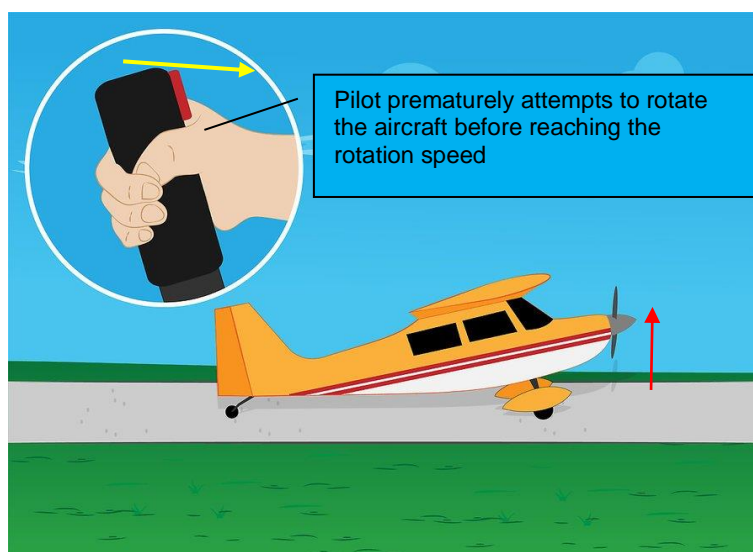
1. SYNOPSIS

1.1 The pilot being the sole occupant on board the aircraft entered runway 29 at FASC with the intention of remaining in the circuit. During the take-off roll, the pilot prematurely attempted to rotate the aircraft which caused the right wing to gain lift before the left wing. In reaction to this, the pilot pitched the aircraft's nose down which caused the propeller and engine cowling to impact the runway surface.

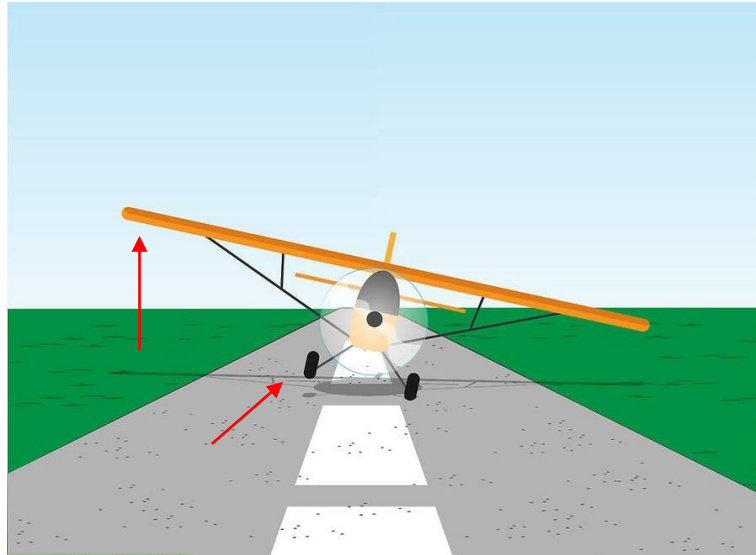
2. HISTORY OF FLIGHT

- 2.1 On 7 January 2018 at 1600Z, the pilot, who was the sole occupant on board the aircraft, lined up for take-off from FASC runway 29, with the intention of conducting circuit training. While on the take-off roll, the pilot raised the tail wheel prematurely and pulled back on the control stick before the aircraft had reached rotation speed.
- 2.2 The pilot stated that the right wing and the right main wheel lifted off from the runway surface. He then reduced the throttle and pushed the stick forward in an attempt to land back on the remaining runway surface available with the intention of preventing a stall. The aircraft pitched nose down and the propeller and engine cowling impacted with the runway surface. The aircraft skidded on its nose for 10 m before coming to rest. The aircraft sustained damage to the propeller, spinner and engine cowling, as can be seen in Figure 1. The pilot was not injured in the incident.
- 2.3 Runway 29 at FASC is 1 100 m (3 609 ft.) long and 15 m (49 ft.) wide. The incident occurred during daylight conditions with visual flying rules (VFR) prevailing. The geographical position was determined to be on runway 29 at FASC (S26°31'26.32" E029°10'06.02") at an elevation of 5 269 ft. (1 606 m) above mean sea level (AMSL).

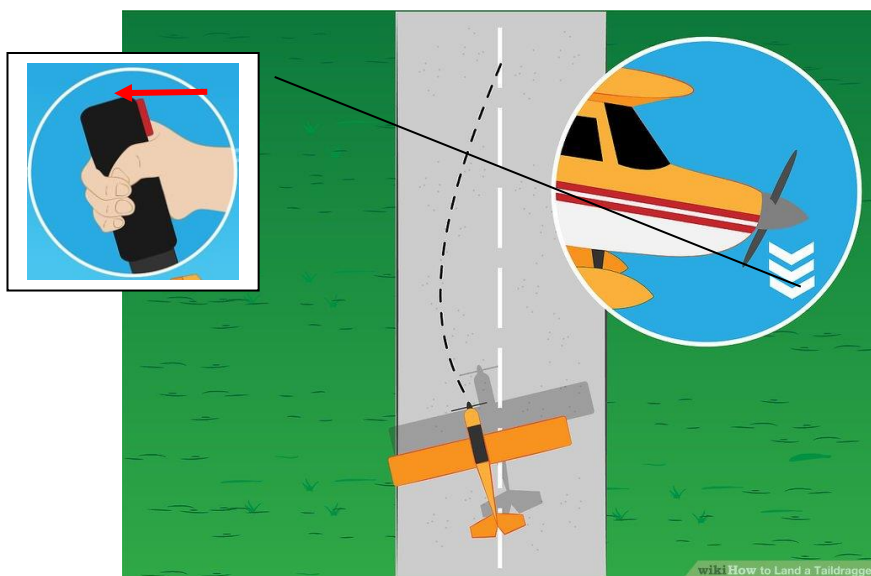
3. SEQUENCE OF EVENTS:



The pilot prematurely pulled the stick back in an attempt to rotate the aircraft (yellow arrow) (Source: wikihow)



Due to the premature rotation, the right wing and main landing gear lifted off the runway surface (Source: wikihow)



In an attempt to gain control and prevent a stall the pilot pushed the stick forward (red arrow) causing the nose of the aircraft to lower (white chevron). This caused the aircraft's propeller and nose cowling to impact the runway surface. (Source: wikihow)

4. FACTUAL INFORMATION

- 4.1 The pilot held a valid national pilot's licence (NPL) and the aircraft type was endorsed on his licence.
- 4.2 The pilot was in possession of a valid aviation medical certificate that was issued by a designated medical examiner.
- 4.3 The aircraft had a valid Authority to Fly and had been maintained in accordance with the prescribed standards.
- 4.4 Fine weather conditions prevailed at the time of the incident, with the visibility being more than 10 km.



Figure 1: Damage sustained to the aircraft (source: L le Roux)



Figure 2: Location of ZU-BAJ on the runway after coming to rest (source: Google Maps)

5. PROBABLE CAUSES/CONTRIBUTING FACTORS

Probable cause:

The pilot prematurely attempted to rotate the aircraft which caused the right wing to gain lift before the left wing.

6. REFERENCES

- *Airplane Flying Handbook* (FAA-H-8083-3B), Chapter 13
- *Pilot's Handbook of Aeronautical Knowledge*, Chapter 5

7. SAFETY RECOMMENDATIONS

None.

8. ORGANISATION

As a result of this incident, the pilot has advised the Accidents and Incidents Investigation Division (AIID) that he has or is going to take the following safety actions:

- The pilot debriefed the incident with a flying instructor to better understand what happened and how to prevent such an occurrence in the future.
- Before the next solo flight in a conventional gear aircraft, the pilot will do further flying training with a flying instructor.
- The pilot intends to upgrade his licence to a private pilot's licence from an NPL

9. TYPE OF SAFETY ACTION

None.

10. SAFETY MESSAGE

None.