



AIB Bulletin

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AIB Bulletin No. 4	Ref: CAV/CC/04/2005	Category: 1.2
Aircraft Type &Reg:	Cessna 402B; 5H-SKX	Serial No. 0829
No. & type of Engines:	Two, Continental TSIO-520E	
Year of Manufacture:	1975	
Date and Time (UTC):	7 April 2005 at 1120 hours	
Location:	Singida Airfield (S 04 48 66 E 034 43 50)	
Type of Flight:	Air charter	
Persons on Board:	Crew - 1 Passengers – 3	
Injuries:	Crew - Nil Passengers – Nil	
Nature of Damage:	Nose wheel collapsed. Damage confined to the nose wheel underneath area. Nose wheel cone and strut broken. One blade on the right propeller bent at the tip.	
Commander's License:	ATPL	
Commander's Age:	49 years	
Commander's Experience:	7,374 hours	
	Last 90 days:	90:05 hours
	Last 28 days:	12:35 hours

Information Source: Telephone call from the operator.

ALL TIMES UTC

History of the Flight

The aircraft was operating a one day charter flight from Dar es Salaam planned to route through Sumbawanga, Tabora, Singida, Dodoma and eventually back to Dar es Salaam. It was carrying one pilot and three passengers. Take-off from Dar es Salaam on 6th April 2005 at 0348 hours was normal and the two subsequent sectors of the flight were uneventful. 5H-SKX landed at Sumbawanga airport at 0638 hours and departed at 0852 hours for Tabora. The aircraft landed at Tabora at 1000 hours for refuelling. It left Tabora at 1025 hours for Singida where it landed at 1108 hours. After landing at Singida airfield and on taxiing to the apron, the nose wheel was stuck in soft ground just off the runway near the apron. The passengers were alerted. After removing the soil which had accumulated in the front of the nose wheel, the aircraft taxied to the apron.

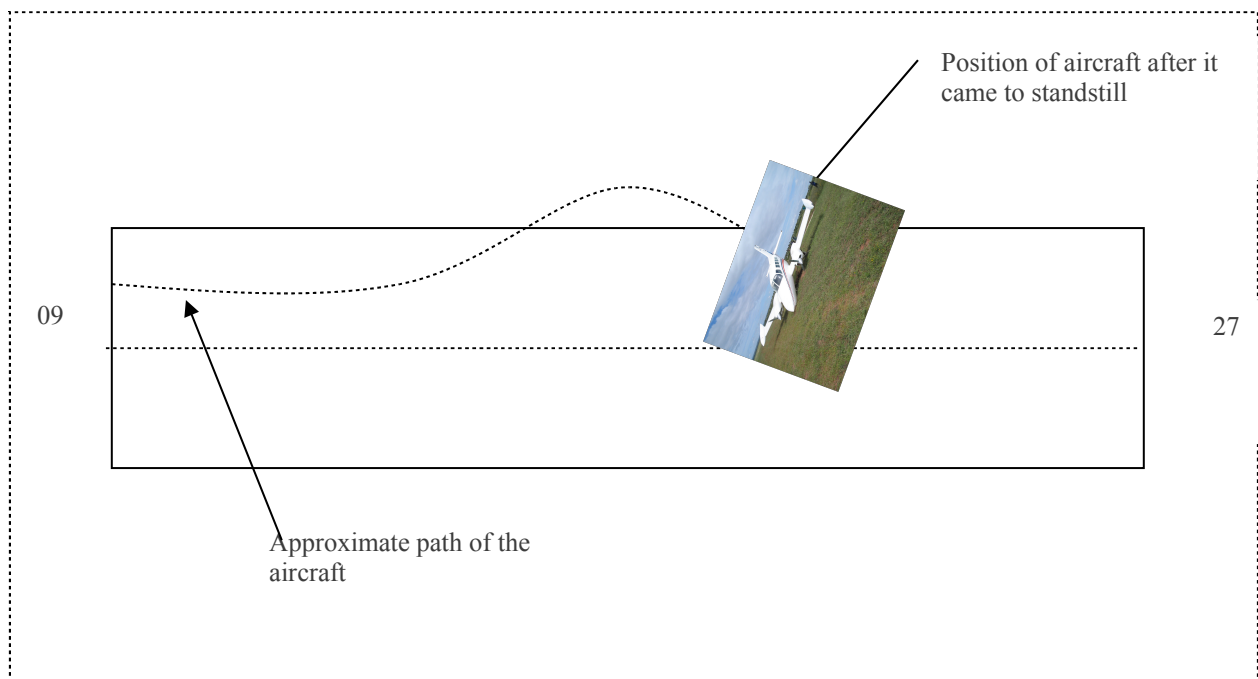
The Bulletin contains facts relating to the accident, which have been determined up to the time of issue. This information is published to inform the public and the aviation industry of the general circumstances of the accidents at the preliminary/stage and must necessarily be regarded as tentative and subject to alteration or correction if additional evidence becomes available.

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The three passengers left the airport, returning at 1345 hours at which time they boarded, ready for the flight to Dodoma. Whilst taxiing, hardly 10 metres from the apron, the aircraft nose wheel was stuck in the soft soil. The pilot then advised his passengers to delay the take-off till the following day.

The following day was 7th April 2005. Departure was delayed to 1100 hours to allow the airstrip to dry up. According to the pilot, they were advised to depart around that time as it indicated that it may rain any time then. At the airfield, they were forced to use three wooden planks, one under each landing gear to get the aircraft out of the soft ground where the wheels were stuck. The aircraft was taxied to the threshold of runway 09 without passengers. The passengers arrived at the threshold by car and boarded the aircraft. The aircraft was aligned to the left of the airfield centreline, according to the pilot, to avoid the rough surface at the centreline. He also believed that that side was drier than the centreline.

At 1111 hours the pilot applied full power on brakes with back pressure on the control column to ease load on the nose wheel. When the brakes were released, the aircraft rolled for approximately 350 metres when the nose wheel lifted up. Immediately, the aircraft rolled to further left of the centreline and at around 500 metres, it was completely out of the runway. In front, spectators who had gathered to watch the take off, saw the aircraft rolling towards them. After rolling a further twenty metres, the aircraft nose wheel regained the ground and engines were throttled back. Heavy braking with full right rudder were applied and the aircraft veered to the right into the runway. It stopped about 180 metres beyond the point where the nose wheel regained ground. The nose wheel upon hitting the ground, dug in and dragged the soft soil subsequent to which it collapsed. The right propeller hit the ground causing one propeller blade to bend. No damage was evident on the left propeller.



The Weather

Prior to landing at Singida airstrip on 6th April 2005, eyewitness testified that it had rained three days before. The pilot also reported that it rained on the day he landed at Singida airstrip (6th April 2005) between 1200 – 1300 hours while waiting for the passengers to return from town. On the day of the incident (7th April 2005), the surface wind was estimated by the pilot at around 5 to 7 knots from the north-west.

Examination of the Wreckage

The damage to the aircraft was consistent with the nose landing gear collapsing during the take-off roll. Examination of the nose landing gear assembly showed that the landing gear had collapsed, retracting backwards. This caused damage to the nose cone. The right propeller hit the ground, causing one blade to bend at its tip. The damage was confined to this area of the nose landing gear.

The rudder was in full right deflection which was confirmed by the right rudder pedal in the cockpit that was in full forward position. Examination of cockpit showed all switches, indicators, throttle levers, RPM indicators in normal positions consistent with engines being cut off normally.



Singida Airstrip

Singida airstrip, elevation 5,000 feet, has one unpaved runway 09/27 which is 1070 long and 70 meters wide. At the time of the accident the runway had a soft surface due to rain.

Findings

- (1) The aircraft was properly maintained and had a current certificate of safety for flight.
- (2) All the aircraft documentations including the certificate of airworthiness, the certificate of registration and the radio station licence, were in order.
- (3) The crew was appropriately licensed and qualified for the flight.
- (4) It had rained at Singida airfield three days before 5H-SKX landed.
- (5) The runway surface was soft and the soil is clayish.

The accident was caused by the aircraft nose landing gear digging into soft soil and collapsing as the pilot tried to abort the take off.

Probable contributory factors include:

- (i) Softness of the runway clay soil which did not provide sufficient friction grip necessary for the aircraft to accelerate to take-off speed in a straight line,
- (ii) the pilot's decision to make a take-off roll from the left of the airstrip parallel to the runway centreline,
- (iii) pressure for making the flight due to both the fact that it was possibly going to rain again and also that the passengers had a tight schedule to complete within a specific period.

Safety Recommendations

- (1) Operators should ascertain conditions of destination airports prior to dispatching their flights.
- (2) Aerodrome operators should ensure current airports status are made available to users.
- (3) Airports available for use throughout the year should be maintained to cater for aircraft landing and take-off for the entire period.