

AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/9246	
Aircraft Registration	ZS-KCI	Date of Accident	22 November 2013		Time of Accident	0845Z
Type of Aircraft	BE36		Type of Operation	Private		
Pilot-in-command Licence Type		Commercial Pilot Licence (CPL)	Age	62	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	4 369,4		Hours on Type	792,2
Last point of departure		Tempe Aerodrome (FATP): Free State				
Next point of intended landing		Wave Crest Aerodrome (FAWR): Eastern Cape				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
Threshold of Runway 07 at FAWR (GPS coordinates S 32° 35' E 028° 31')						
Meteorological Information		Surface wind: 100/20 gusting up to 40 knots; Temperature: 22°C; Visibility: CAVOK				
Number of people on board	1 + 1	No. of people injured	0	No. of people killed	0	
Synopsis						
<p>The pilot reported that on final approach during landing, a tractor and trailer unexpectedly crossed the runway, and the pilot performed a go-around successfully. The tractor then parked on the right, close to the threshold of the runway. The pilot then prepared to land again, however his final approach was low with gust wind conditions and the aircraft stalled and landed hard on the threshold of Runway 07. The aircraft sustained damage to the left landing gear the aircraft then hit a tree branch with its left wing. The pilot taxied to the hangar without further problem.</p> <p>Neither occupant sustained injuries.</p>						
Probable Cause						
<p>The aircraft landed hard on the threshold of Runway 07 following a stall and the aircraft impacted a tree with the left hand wing.</p>						
IARC Date			Release Date			



AIRCRAFT ACCIDENT REPORT

Name of Owner : KINGSLYD PROPERTIES CC
Name of Operator : Private
Manufacturer : Beech Aircraft Corporation
Model : A36
Nationality : South African
Registration Marks : ZS-KCI
Place : Threshold of Runway 07 at FAWR
Date : 22 November 2013
Time : 0845Z

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 (1997) this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and not to establish legal liability.

Disclaimer:

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

1. FACTUAL INFORMATION

1.1 History of Flight

- 1.1.1 On 22 November 2013 the pilot, accompanied by one passenger, took off from Tempe Airport on a private flight to Wave Crest Aerodrome.
- 1.1.2 The pilot indicated that on final approach during landing, a tractor and trailer unexpectedly crossed the runway, and he performed a go-around. The tractor then parked on the right, close to the threshold of the runway.
- 1.1.3 The pilot then prepared to land again, but subsequently stated that the final approach was too low. The aircraft experienced strong, gusty wind and stalled,

landing hard on the threshold of Runway 07. The aircraft then hit a tree branch which was sticking out of the bush. The pilot taxied to the hangar uneventfully.

1.1.4 The pilot inspected the aircraft and realised that it had sustained damage to the left landing gear door and the left wing.

1.1.5 Neither occupant was injured during the accident.

1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	-	-	-	-
Serious	-	-	-	-
Minor	-	-	-	-
None	1	-	1	-

1.3 Damage to Aircraft

1.3.1 The aircraft sustained minor damage.

1.4 Other Damage

1.4.1 No other damage.

1.5 Personnel Information

Nationality	South African	Gender	Male	Age	62
Licence Number	0270001712	Licence Type	Commercial Pilot's Licence		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Safety, Instrument and Night ratings				
Medical Expiry Date	30 April 2014				
Restrictions	Yes				
Previous Accidents	None				

Flying Experience:

Total Hours	4 369,4
Total Past 90 Days	12,3
Total on Type Past 90 Days	12,3
Total on Type	792,2

1.6 Aircraft Information

Airframe:

Type	Beech A36	
Serial Number	E-1201	
Manufacturer	Beech Aircraft Corporation	
Date of Manufacture	1978	
Total Airframe Hours (At time of Accident)	4 705,4	
Last MPI (Date & Hours)	12 June 2013	4 688,34
Hours since Last MPI	17,06	
C of A (Expiry Date)	20 August 2014	
C of R (Issue Date) (Present owner)	11 April 2012	
Operating Categories	Standard Part 91	

Engine:

Type	TCM10520BAC
Serial Number	807224R
Hours since New	898,7
Hours since Overhaul	None

Propeller:

Type	HART.PHCC3YFIR
Serial Number	EE4996B
Hours since New	732,64
Hours since Overhaul	None

1.7 Meteorological Information

1.7.1 The weather report was obtained from the pilot accident/incident questionnaire. The pilot reported that he had obtained the weather briefing from the Johannesburg Meteorology Office prior to departure.

Wind direction	100°	Wind speed	20 knots gusting up to 40knots	Visibility	10 km
Temperature	22°C	Cloud cover	Sky clear	Cloud base	Nil
Dew point	Unknown				

NOTE: Reference: *Meteorology for Pilots* by K.M. Wickson states that a gust is a sudden increase in wind speed often associated with a change in direction; it lasts for a few seconds only and is very local in effect.

NOTE: Reference: *The Air Pilot's Manual Aviation Law and Meteorology* (p. 217): 'Vertical gusts will increase the angle of attack, causing an increase in the lift generated at that particular airspeed and therefore an increased load factor. Of course, if the angle of attack is increased beyond the critical angle, the wing will stall and this can occur at a speed well above the published 1 G stall speed.'

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with standard navigational equipment as per the equipment list approved by the Regulator. There were no recorded defects to navigational equipment prior to the flight.

1.9 Communications

1.9.1 The aircraft was equipped with VHF transmitter communications equipment as per the equipment list approved by the Regulator. There were no recorded defects to communications equipment prior to the flight.

1.10 Aerodrome Information

Aerodrome Location	FAWR	
Aerodrome Co-ordinates	S 32°35' E 028°31'	
Aerodrome Elevation	4 526 ft.	
Runway Length	700 m	
Runway Used	07	
Runway Surface	Grass	
Approach Facilities	None	

1.11 Flight Recorders

1.11.1 The aircraft was not fitted with a flight data recorder or cockpit voice recorder. These were not required by the Regulator.

1.12 Wreckage and Impact Information

1.12.1 On final approach during landing, a tractor and trailer unexpectedly crossed the runway, and the pilot performed a go-around successfully. The tractor parked on the right, close to the threshold of the runway. The pilot then prepared to land again, his final approach was low with low airspeed and the aircraft stalled and landed hard on the threshold of Runway 07 and sustained damage to the left landing gear the aircraft then hit a tree branch with its left wing. The pilot taxied to the hangar without further problems.



Figure 1: Damage to wing



Figure 2: Damage to landing gear door

1.13 Medical and Pathological Information

1.13.1 The pilot and passenger sustained no injuries.

1.13.2 The pilot held a valid medical certificate.

1.14 Fire

1.14.1 There was no evidence of pre- or post-impact fire.

1.15 Survival Aspects

1.15.1 The accident was considered survivable because there was no major damage to the cabin area. Both pilot and passenger were restrained by safety belts.

1.16 Tests and Research

1.16.1 None.

1.17 Organizational and Management Information

1.17.1 The aircraft was operated as a private flight.

1.17.2 According to the available records, the approved aircraft maintenance organisation (AMO) that had certified the last MPI on the aircraft prior to the accident was in possession of a valid AMO approval.

1.18 Additional Information

1.18.1 The information below refers to the definition of a stall and how it affects the aircraft. The streamline flow over the wings breaks down and becomes turbulent when the critical (or stalling) angle of attack is exceeded. This causes:

- Buffeting (shaking or shuddering) of the airframe, felt through the controls;
- A marked decrease in lift, resulting in sinking;
- A rearward movement of the centre of pressure (through which the lift acts), resulting in the nose dropping;
- A marked drag increase.

A stall occurs when the critical angle of attack is exceeded, irrespective of airspeed. The only way to recover is to decrease the angle of attack (i.e. relax the back pressure and/or move the control column forward).

Source: *Air Pilot manual (1)* (Pooley, p. 173)

1.19 Useful or Effective Investigation Techniques

1.19.1 None

2. ANALYSIS

2.1 Man

2.1.1 The pilot, accompanied by a passenger, was engaged on a private flight to Wave Crest Aerodrome when the accident occurred. The pilot was a commercial test pilot class II and a safety pilot. His licence and medical certificate were valid for the flight. The pilot had 792, 2 flying hours on this type of aircraft.

2.1.2 The pilot was distracted by the tractor that crossed the runway on approach, and

performed a go-around.

2.1.3 After the go-around, the pilot used poor landing technique by flying on a very low approach.

2.2 Machine

2.2.1 The aircraft was maintained according to the existing regulations. There was no evidence of mechanical failure which could have caused the accident. After the accident the aircraft was issued with an authority to fly to Tempe for repairs.

2.3 Environment

2.3.1 The pilot experienced gusty wind of over 20 kts during landing. The gusts increased the angle of attack beyond the critical angle and as the aircraft was airspeed was low the aircraft stalled. The pilot could not recover from the stall due to insufficient height and landed hard on the threshold of Runway 07. The aircraft then hit a branch near the threshold.

3. CONCLUSION

3.1 Findings

3.1.1 The pilot held a commercial pilot's licence and was correctly licensed and rated on the aircraft type.

3.1.2 The pilot held a valid aviation medical certificate.

3.1.3 The aircraft had a valid Certificate of Registration and Certificate of Airworthiness at the time of the incident.

3.1.4 The aircraft was maintained by an approved AMO.

3.1.5 Weather was a contributing factor in this accident.

3.2 Probable Cause/s

3.2.1 The aircraft landed hard on the threshold of Runway 07 following a stall and the aircraft impacted a tree with the left hand wing.

4. SAFETY RECOMMENDATIONS

4.1 None

5. APPENDICES

5.1 None