



## AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8761	
<b>Aircraft Registration</b>	ZS-PTC	<b>Date of Accident</b>	20 February 2010		<b>Time of Accident</b>	1055Z
<b>Type of Aircraft</b>	Beech Baron E55		<b>Type of Operation</b>	Private		
<b>Pilot-in-command Licence Type</b>	Private		<b>Age</b>	53	<b>Licence Valid</b>	Yes
<b>Pilot-in-command Flying Experience</b>	Total Flying Hours	± 9792.3		<b>Hours on Type</b>	± 4093.13	
<b>Last point of departure</b>	Hoopstad aerodrome (FAHP) – Free State					
<b>Next point of intended landing</b>	Bloemfontein/New Tempe (FATP) – Free State					
<b>Location of the accident site with reference to easily defined geographical points (GPS readings if possible)</b>						
On a mealiefield, approx 500m north of Hoopstad aerodrome – GPS position: S27°49,086', E025°55,192'; Elev = 4110 ft AMSL						
<b>Meteorological Information</b>	Wind: 050° @ 07 knots ; Temperature: 29°C; CAVOK					
<b>Number of people on board</b>	1+0	<b>No. of people injured</b>	0	<b>No. of people killed</b>	1	
<b>Synopsis</b>	<p>A pilot engaged in a private flight took off from Hoopstad aerodrome with the intention to land at New Tempe aerodrome in Bloemfontein. He took off successfully, and he returned to the aerodrome to do a fly-past and during the climb phase after fly-past, he lost control of the aircraft and the aircraft subsequently impacted the ground in a nose down attitude.</p> <p>The aircraft was destroyed and the pilot was fatally injured.</p>					
<b>Probable Cause</b>						
<p>The pilot lost control of the aircraft during in a turn manoeuvre.</p>						
IARC Date				Release Date		



## AIRCRAFT ACCIDENT REPORT

**Name of Owner/Operator** : Value Port Transport CC.  
**Manufacturer** : Beech Aircraft Corporation  
**Model** : Baron E55  
**Nationality** : South African  
**Registration Marks** : ZS-PTC  
**Place** : On a mealiefield, approximately 500 meters north of Hoopstad aerodrome  
: GPS position: S27°49,086', E025°55,192'  
**Date** : 20 February 2010  
**Time** : 1055Z

*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 given without prejudice to the rights of the CAA, which are reserved.*

## 1. FACTUAL INFORMATION

### 1.1 History of Flight

- 1.1.1 A pilot engaged in a private flight took off from Hoopstad aerodrome (FAHP) with the intention to land at New Tempe aerodrome (FATP) in Bloemfontein.
- 1.1.2 He took off successfully from Hoopstad aerodrome and had already left the Hoopstad area, but was called on his cellphone by one of the people on the aerodrome after approximately twenty minutes into flight, who requested him to return and perform a fly-past at Hoopstad aerodrome.
- 1.1.3 The pilot decided to return to Hoopstad aerodrome to perform the fly-past. The fly-past was performed in front of several people who were at the aerodrome at the time.
- 1.1.4 According to a witness who is also a pilot and was watching the fly-past, during the climb-out phase after fly-past, while the aircraft was turning towards the right, it went into a bank angle of approximately 70 degrees (wing-over) and stayed in that attitude for a while before the pilot corrected it. The aircraft was then seen losing height and it subsequently impacted the ground at an approximate 20 degrees nose down, left wing low attitude.
- 1.1.5 The aircraft was destroyed in the accident sequence and the pilot was fatally injured.

## 1.2 Injuries to Persons

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

## 1.3 Damage to Aircraft

1.3.1. The aircraft was destroyed during the accident sequence.



Photo 1: Showing damage to aircraft

## 1.4 Other Damage

1.4.1. There were no other damages.

## 1.5 Personnel Information

Nationality	South African	Gender	Male	Age	53
Licence Number	0270151350	Licence Type	Private		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Night and Instrument ratings				
Medical Expiry Date	31 August 2010				
Restrictions	To wear corrective lenses				
Previous Accidents	No records found				

Flying Experience :

Total Hours	Approximately 9792.3
Total Past 90 Days	Unknown
Total on Type Past 90 Days	Unknown
Total on Type	Approximately 4093.13

**Note:** The flying hours as stated above are as recorded by the pilot during the last license renewal on 29 September 2009. The pilot's log book could not be found and his exact flying hours at the time of the accident could therefore not be determined.

## 1.6 Aircraft Information

### Airframe :

Type	Baron E55	
Serial Number	TE-888	
Manufacturer	Beech Aircraft Corporation	
Year of Manufacture	1973	
Total Airframe Hours (At time of Accident)	Approximately 4483.9 hours	
Last Mandatory Periodic Inspection (MPI) - Date & Hours	24 July 2009	4411.7
Hours since Last MPI	72.2	
C of A (Expiry Date)	21 May 2010	
C of R (Issue Date) (Present owner)	15 May 2008	
Operating Categories	Standard	

### Engine 1:

Type	Continental IO – 550C
Serial Number	27-1996-R
Hours since New	Approximately 957.2 hours
Hours since Overhaul	TBO not yet reached

### Engine 2:

Type	Continental IO – 550C
Serial Number	27-1991-R
Hours since New	Approximately 957.2 hours
Hours since Overhaul	TBO not yet reached

### Propeller 1:

Type	Hartzell PHC-C 3YF-2UF
Serial Number	EB 3916A
Hours since New	Approximately 957.2 hours
Hours since Overhaul	Approximately 379 hours



## Propeller 2:

Type	Hartzell PHC-C 3YF-2UF
Serial Number	EB 3902A
Hours since New	Approximately 957.2 hours
Hours since Overhaul	Approximately 379 hours

**Note:** The hours as shown in the tables above are estimates drawn from available information in relation to the Hobbs meter readings. According to the available records of the aircraft's flight folio (log book), on 20 February 2010 before the flight from FATP to FAHP, the Hobbs meter reading was 1587.2 hours. The Hobbs meter reading was also recorded to be 1516.0 hours during the last MPI on 24 July 2009. The Hobbs meter was found reading 1588.2 hours on the accident site (see photo 2 below).



Photo 2: Hobbs meter reading as found on accident site

### 1.6.2. Weight and Balance

1.6.2.1. The gross weight for this aircraft is 2404kg, and the empty weight is 1492kg. The aircraft had a fuel uplift of 180 litres (approximately 129.6kg at an S.G. of 0.72) before departing at FAGM on 18 February 2010, but it is not known what was the amount of fuel in the tanks prior to the uplift, and it could therefore not conclusively be determined how much fuel was on board the aircraft at the time of the accident.

1.6.2.2. Assuming that the 180 litres was the only amount of fuel on the aircraft, the aircraft is estimated to have consumed approximately 95 litres of fuel from FAGM to FATP, and a further 35 litres from FATP to FAHP. With the weight of the pilot estimated to have been 90 kg, and with approximately 50 litres (36kg) left in the tanks (180 – 95 – 35), the total aircraft weight would have been approximately the figure as calculated below:

$$\begin{aligned} \text{Total weight} &= \text{Aircraft empty weight} + \text{fuel weight (50 litres)} + \text{pilot weight} \\ &= 1492\text{kg} + 36\text{kg} + 90\text{kg} \\ &= \underline{1618 \text{ kg}} \end{aligned}$$

The aircraft is thus considered to have been within its weight limitations..

## 1.7. Meteorological Information

1.7.1. The information given below was obtained from an official weather report given by the South African Weather Services.

Wind direction	050°	Wind speed	07 knots	Visibility	10000m
Temperature	29°C	Cloud cover	Few	Cloud base	5000 ft
Dew point	12°C				

## 1.8 Aids to Navigation

1.8.1. The aircraft was fitted with standard navigation equipment as approved at the time of certification by the regulator, and no defects were entered against this equipment prior to the accident.

## 1.9 Communications.

1.9.1. The aircraft was fitted with standard communication equipment as approved at the time of certification by the regulator, and no defects were entered against this equipment prior to the accident or during the accident flight.

1.9.2. There is no evidence of any communication or Mayday call made before the accident occurred.

## 1.10 Aerodrome Information

1.10.1. The accident did not happen on an aerodrome. It happened on a mealiefield, approximately 500m north of Hoopstad aerodrome – GPS position: S27°49,086', E025°55,192' at an elevation of 4110 ft AMSL.

## 1.11 Flight Recorders

1.11.1. The aircraft was not fitted with a flight data recorder (FDR) or cockpit voice recorder (CVR), and none were required by the regulations.



## 1.11 Wreckage and Impact Information

1.12.1. The aircraft was seen losing height after it was corrected from what looked like a wing over. It subsequently impacted the ground at an approximate 20 degrees nose down, left wing low attitude.

1.12.2. After the aircraft impacted the ground, it skidded for approximately 43 meters, then it bounced for approximately 25 meters and skidded approximately a further 38 meters, before it came to rest approximately 106 meters from the first point of impact. Evidence of fuel spillage was observed approximately 8 meters from the first point of impact.

1.12.3. Except for the propellers which were found approximately 17 and 44 meters from the main wreckage respectively, the debris were semi-localised to the accident site, most of which was found within 50 meter radius to the main wreckage.

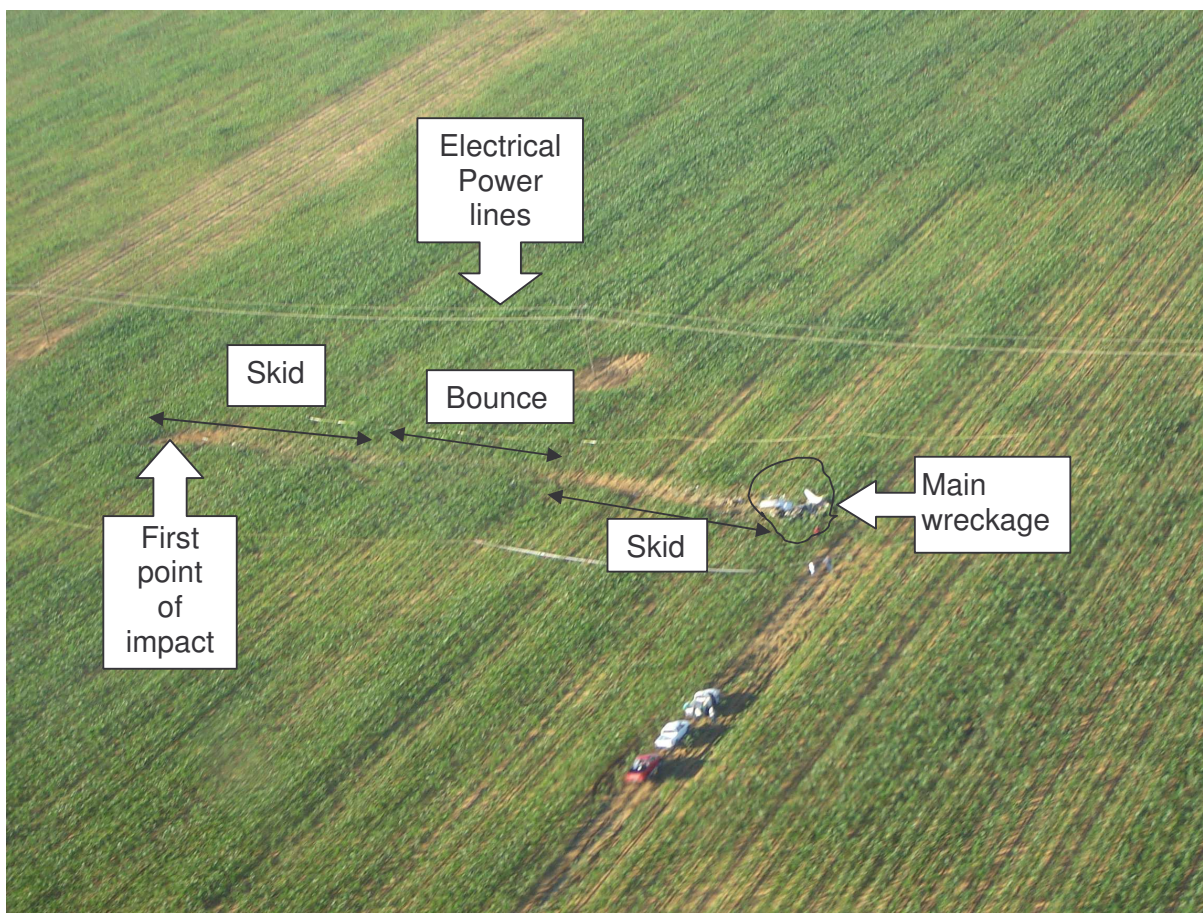


Photo 3: Showing impact marks and main wreckage.

## 1.13 Medical and Pathological Information

1.13.1. The pilot was fatally injured in the accident.

1.13.2. The post-mortem and toxicology reports were not available at the time of compilation of this report. Should these results have a positive bearing to this report, they will be attached to this report as and when obtained.

#### **1.14 Fire**

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

#### **1.15 Survival Aspects**

1.15.1. The accident was not considered as survivable because of the damages to the aircraft and cabin. The instrument panel was completely destroyed ~~damaged~~ and the seats were broken off from their mounts.

1.15.2 The police and emergency services arrived at the scene within an hour after the accident.

#### **1.16 Tests and Research**

1.16.1. During the wreckage examination on the accident site, no anomalies were observed which could have affected the normal operation of the aircraft. The damage on the propellers was indicative of engines which were under power during impact. During the wreckage layout, the control cables were also observed to have had continuity, with no visible cable and linkage breakages other than those breakages consistent with the impact.

#### **1.17 Organizational and Management Information**

1.17.1. The pilot had a valid pilot's license.

1.17.2. This was a private flight.

1.17.3. The aircraft had a valid Certificate of Airworthiness (C of A), with an expiry date of 21 May 2010. The last MPI was certified on 24 July 2009 at 4411.7 airframe hours.

1.17.4. The aircraft was privately owned and was maintained by an approved Aircraft Maintenance Organisation (AMO 247).

#### **1.18 Additional Information**

1.18.1. The pilot had a lot of experience on this type of aircraft, and numerous other types.

1.18.2. The pilot had flown in and out of FAHP on numerous occasions, using the same type of aircraft.

1.18.3. There are electrical power lines running parallel to the runway, approximately 1000 meters north of the runway at FAHP, and the pilot was well aware of their presence.



1.18.4. The aircraft flew from Rand airport (FAGM) to FATP on Saturday, 18 February 2010, and the aircraft had a fuel uplift of 180 litres at FAGM on that day.

## **1.19 Useful or Effective Investigation Techniques**

1.19.1. None.

## **2. ANALYSIS**

2.1. This was a private flight and the pilot had a valid pilot's license. According to available records, on 29 September 2009 the pilot had flown a total of 9792.3 hours.

2.2. There was no evidence of maintenance anomalies and/or defects with the aircraft prior to the flight reported by the pilot. No major defects or concerns were reported during the last annual inspection at 4411.7 airframe hours and the last MPI was certified without any recorded defects.

2.3. During the wreckage examination on the accident site, no anomalies were observed which could have affected the normal operation of the aircraft. The damage on the propellers was indicative of engines which were under power during impact. During the wreckage layout, the control cables were also observed to have had continuity, with no visible cable and linkage breakages other than those breakages consistent with the impact.

2.4. A witness reported that he saw the aircraft take off without any problems, before it came back for a fly-past. He also reported that during the climb out phase of the fly-past he saw the aircraft going into a bank angle of approximately 70 degrees (wing-over) during a right turn and stayed in that attitude for a while before the pilot corrected it.

2.5. The pilot seems to have lost control of the aircraft for a while, and regained control a bit late because the aircraft had already lost height significantly. The aircraft then subsequently impacted the ground at an approximate 20 degrees nose down, left wing low attitude.

## **3. CONCLUSION**

### **3.1 Findings**

3.1.1. This was a private flight.

3.1.2. The pilot had a lot of experience on this type of aircraft, and numerous other types.

3.1.3. The aircraft was privately owned and was maintained by an approved Aircraft Maintenance Organisation (AMO 247).

3.1.4. During the last license renewal on 29 September 2009 the pilot had a total 9792.3

hours

- 3.1.5. The aircraft had a valid Certificate of Airworthiness (C of A), with an expiry date of 21 May 2010. The last MPI was certified on 24 July 2009 at 4411.7 airframe hours
- 3.1.6. The last entry in the folio was made on 20 February 2011 at 1587.2 Hobbs hours.
- 3.1.7. The pilot had flown in and out of FAHP on numerous occasions, using the same type of aircraft.
- 3.1.8. The aircraft flew from Rand airport (FAGM) to FATP on Saturday, 18 February 2010, and the aircraft had a fuel uplift of 180 litres at FAGM on that day.
- 3.1.9. There are electrical power lines running parallel to the runway, approximately 1000 meters north of the runway at FAHP, and the pilot was well aware of their presence.
- 3.1.10. The weather was CAVOK, with a wind speed of 07 knots in a direction of 050°, and the temperature was 29°C.
- 3.1.11. During the wreckage examination on the accident site, no anomalies were observed which could have affected the normal operation of the aircraft.

### **3.2 Probable Cause/s**

- 3.2.1. The pilot lost control of the aircraft during in a turn manoeuvre.

## **4. SAFETY RECOMMENDATIONS**

- 4.1. None

## **5. APPENDICES**

- 5.1. None

Compiled by :

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