



AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8251	
Aircraft Registration	ZS-KSH	Date of Accident	9 February 2007		Time of Accident	1550Z
Type of Aircraft	Cessna 414 A		Type of Operation	Private		
Pilot-in-command Licence Type		Commercial	Age	32	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	1 308		Hours on Type	27
Last point of departure		Lanseria Aerodrome (FALA)				
Next point of intended landing		Kitty Hawk Aerodrome (FAKT)				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
On the overshoot area past runway 01 at Kitty Hawk Aerodrome (GPS position: S25°50.929' E028°26.957')						
Meteorological Information		Surface wind: Light and Variable; Temperature: 25°C; Visibility: Good.				
Number of people on board	1 + 1	No. of people injured	0	No. of people killed	0	
Synopsis						
<p>The pilot stated that he undertook a private flight, accompanied by a passenger, from Lanseria Aerodrome to Kitty Hawk Aerodrome. .</p> <p>According to the pilot, he selected 45° of flaps on approach for landing on Runway 01 at Kitty Hawk. He landed at an IAS of 90kt too far down the runway, which is 810m long and has a downhill slope.</p> <p>As he was unable to slow the aircraft sufficiently when he applied brakes, he manoeuvred it to the left and partly onto the grass to slow down more rapidly. He continued to apply maximum braking. The aircraft subsequently slowed down, but the pilot was unable to bring it to a complete stop and overran the runway.</p> <p>The right wing collided with a tree, causing the outboard section of the wing to separate. The main and nose landing gears collapsed after impact with the ground, and the aircraft ground-looped 45° to the right before it came to a rest.</p> <p>The pilot and passenger were not injured during the accident. The aircraft sustained substantial damage to the main and nose landing gears, right wing and both propellers.</p> <p>The last MPI (Mandatory Periodic Inspection) was carried out on 31 May 2006 at 5 997,4 airframe hours and the aircraft had flown 91,2 hours since then. The Airworthiness Department conducted an audit on 3 May 2006 & 29 August 2006. No major deficiencies were identified. The AMO Licence No. 252 was renewed until 1 May 2007.</p>						
Probable Cause						
The pilot landed the aircraft too far down the runway, which has a downhill slope, and was unable to stop it within the distance remaining.						
IARC Date	23 October 2007		Release Date			

AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Summerset Charters (PTY) Ltd
Manufacturer : Cessna Aircraft Company
Model : Cessna 414 A
Nationality : South African
Registration Marks : ZS-KSH
Place : Kitty Hawk Aerodrome
Date : 9 February 2007
Time : 1550Z

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 The pilot stated that he undertook a private flight, accompanied by a passenger, from Lanseria Aerodrome to Kitty Hawk Aerodrome.
- 1.1.2 According to the pilot, he selected 45° of flaps on approach for landing on Runway 01 at Kitty Hawk. He landed at an IAS of 90kt too far down the runway, which is 810m long and has a downhill slope.
- 1.1.3 As he was unable to slow the aircraft sufficiently when he applied brakes, he manoeuvred the aircraft to the left and partly onto the grass in order to slow down more rapidly. He continued to apply maximum braking. The aircraft subsequently slowed down, but the pilot was unable to bring it to a complete stop and overran the runway.
- 1.1.4 The right wing collided with a tree, causing the outboard section of the wing to separate. The main and nose landing gears collapsed after impact with the ground and the aircraft ground-looped through 45° to the right before coming to a rest.



Figure 1. Tyre marks showing how aircraft departed from runway onto grass.



Figure 2. Tyre braking marks on grass near end of Runway 01.



Figure 3. Tree uprooted after impact by right wing.

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 substantial damage to the left-hand and right-hand main and nose landing gears, the right wing and both propellers.



Figure 4. Main wreckage showing right wing outboard section missing.



Figure 5. Left-hand main undercarriage collapsed during impact sequence.



Figure 6. Right wing outboard section separated on impact with tree.



Figure 7. View of where the aircraft overran the end of the runway.

1.4 Other Damage

1.4.1 There was no other damage apart from that done to vegetation/trees.

1.5 Personnel Information

Nationality	South African	Gender	Male	Age	32
Licence Number	027*****22	Licence Type	Commercial		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Instrument & Night Rating, Instructor Rating Grade 2				
Medical Expiry Date	1 May 2007				
Restrictions	None				
Previous Accidents	None				

Flying Experience:

Total Hours	1308,0
Total Past 90 Days	138,0
Total on Type Past 90 Days	27,0
Total on Type	27,0

1.6 Aircraft Information

1.6.1 Airframe

Type	Cessna 414 A	
Serial Number	414A-0624	
Manufacturer	Cessna Aircraft Company	
Year of Manufacture	1981	
Total Airframe Hours (at time of accident)	6 088,6	
Last MPI (Hours & Date)	5 997,4	31 May 2006
Hours since Last MPI	91,2	
C of A (Issue Date)	4 September 2003	
C of A (Expiry Date)	3 September 2007	
C of R (Issue Date) (Present Owner)	31 October 2006	
Operating Categories	Standard	
SB & AD Status	Complied	

No. 1 Engine (Left-hand):

Type	Continental TS10-520-NB
Serial Number	813686-R
Hours since New	6 088,6
Hours since Overhaul	749,0
Hours remaining before Overhaul	651,0

No. 2 Engine (Right-hand):

Type	Continental TS10-520-NB
Serial Number	813687-R
Hours since New	6 088,6
Hours since Overhaul	749,0
Hours remaining before Overhaul	651,0

No. 1 Propeller (Left-hand):

Type	McCauley 3AF 32C505
Serial Number	805838
Hours since New	6 088,6
Hours since Overhaul	254,5
Hours remaining before Overhaul	1 745,5

No. 2 Propeller (Right-hand):

Type	McCauley 3AF 32C505
Serial Number	805832
Hours since New	6 088,6
Hours since Overhaul	254,5
Hours remaining before Overhaul	1 745,5

1.6.2 The Airworthiness Department conducted an audit on 3 May 2006 and 29 August 2006. No major deficiencies were identified. The AMO Licence No. 252 was renewed until 1 May 2007.

1.7 Meteorological Information

Wind direction	Nil	Wind speed	Calm	Visibility	Good
Temperature	25°C	Cloud cover	Nil	Cloud base	Nil
Dew point	Unknown				

1.8 Aids to Navigation

1.8.1 The aircraft was fitted with the standard navigational equipment.

1.9 Communications

1.9.1 This is an uncontrolled aerodrome and unmanned procedures were complied with on the Kitty Hawk aerodrome frequency 120.65 MHz

1.10 Aerodrome Information

Aerodrome Location	Kitty Hawk (14,5km E of Wapadrand)	
Aerodrome Co-ordinates	S25° 51' 42" E028° 26' 49".	
Aerodrome Elevation	4 586ft	
Runway Designations	01/19	
Runway Dimensions	810 x 18m	
Runway Used	01	
Runway Surface	Asphalt (Runway 01 downslope 3°)	
Approach Facilities	None	

1.11 Flight Recorders

1.11.1 The aircraft was not equipped with a cockpit voice recorder (CVR) or a flight data recorder (FDR) nor was either required by regulation.

1.12 Wreckage and Impact Information

1.12.1 The aircraft landed far down Runway 01 which sloped downhill and was 810 metres long. The aircraft subsequently started rolling partially onto the grass on the left-hand side, as indicated by brake marks approximately 230m before the end of the runway. It overran the end of the runway and went off the steep slope in the overshoot area.

1.12.2 The right wing then collided with a tree, causing the outboard section to separate. The main and nose landing gears collapsed on impact with the ground and the aircraft ground-looped through 45° to the right before it came to rest approximately 100m beyond the end of the runway.

1.13 Medical and Pathological Information

1.13.1 Not applicable.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 As the pilot and passenger were properly restrained and the cockpit area sustained only minor damage, the occupants were not injured during the impact sequence.

1.16 Tests and Research

1.16.1 According to the Pilot's Operating Handbook, the normal landing distance with a landing weight of 6 000 lb and a surface temperature of 25°C is approximately 325 metres. The runway would have been long enough for the landing in question if the pilot had landed at the beginning of the threshold.

1.17 Organisational and Management Information

1.17.1 This was a private flight.

1.18 Additional Information

1.18.1 None.

1.19 Useful or Effective Investigation Techniques

1.19.1 None

2. ANALYSIS

2.1 The pilot landed slightly too far down the runway, which has a downhill slope of 3° and is 810m long. As a result, he was unable to slow the aircraft sufficiently when he applied brakes, and so manoeuvred the aeroplane to the left and partly onto the grass in order to slow down. He continued to apply maximum braking; the aircraft subsequently slowed but the pilot was unable to bring it to a complete stop and it overran the runway and steep slope at the overshoot area.

3. CONCLUSION

3.1 Findings

3.1.1 The pilot held a valid commercial pilot's licence and medical certificate. The aircraft type was endorsed in his licence.

3.1.2 The weather was not considered to be a factor in this accident.

3.1.3 There were no mechanical defects found that could have contributed to or caused the accident.

3.1.4 According to available maintenance records, the aircraft was properly maintained.

3.1.5 The aircraft landed far down the runway which was sloping downhill and was only 810m long.

3.1.6 The pilot applied brakes but these were insufficient on the downhill slope to stop the aircraft before the end of the runway.

3.2 Probable Cause/s

3.2.1 The pilot landed the aircraft too far down the downward-sloping runway, and was unable to stop it within the distance remaining.

4. SAFETY RECOMMENDATIONS

4.1 None.

5. APPENDICES

5.1 None

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Report reviewed and amended by Office of the EM: AIID
September 2008