

AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

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|--|----------------|--|--------------------------|-----------------------------|----------------------|-----|
| | | | | Reference: | CA18/2/3/8147 | |
| Aircraft Registration | ZS-EVB | Date of Accident | 20 June 2006 | Time of Accident | 1650Z | |
| Type of Aircraft | Piper Comanche | | Type of Operation | Test flight | | |
| Pilot-in-command Licence Type | | Private | Age | 58 | Licence Valid | Yes |
| Pilot-in-command Flying Experience | | Total Flying Hours | 449 | | Hours on Type | 23 |
| Last point of departure | | FAWB (Wonderboom Aerodrome) | | | | |
| Next point of intended landing | | FAWB (Wonderboom Aerodrome) | | | | |
| Location of the accident site with reference to easily defined geographical points (GPS readings if possible) | | | | | | |
| S25° 39' 00" E028° 13' 00" | | | | | | |
| Meteorological Information | | The weather was fine, with temperature at 18°C and visibility CAVOK. | | | | |
| Number of people on board | 1 + 1 | No. of people injured | 0 | No. of people killed | 0 | |
| Synopsis | | | | | | |
| <p>The pilot, accompanied by an aircraft maintenance engineer, took off from Wonderboom Aerodrome on a test flight after a repair had been carried out on the right-hand fuel injector. The aircraft had problems with blocked fuel nozzles. According to the pilot, the aircraft performed normally during the flight, which lasted for approximately forty minutes. On final approach, however, the right-hand engine lost power, followed by the left-hand engine. The pilot executed a glide, and the aircraft struck a streetlight and fence before skidding to a halt. According to the pilot, the main fuel tanks had been selected throughout the flight.</p> <p>The aircraft sustained damage to the propellers, wings and undercarriage, but neither occupant was injured.</p> | | | | | | |
| Probable Cause | | | | | | |
| Fuel starvation due to blocked fuel nozzles. | | | | | | |
| IARC Date | | | | Release Date | | |

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| AIRCRAFT ACCIDENT REPORT |
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Name of Owner : Salto trading (one) cc
Name of Operator : Salto trading (one) cc
Manufacturer : Piper
Model : PA-30
Nationality : RSA
Registration Marks : ZS-EVB
Place : FAWB
Date : 20 June 2006
Time : 1650Z

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, accompanied by an aircraft maintenance engineer, took off from Wonderboom Aerodrome on a test flight after a repair had been carried out on blocked fuel nozzles in the right-hand engine. According to the pilot, the aeroplane performed normally during the flight, which lasted for approximately forty minutes. On final approach, however, the right-hand engine lost power, followed by the left-hand engine. The pilot executed a glide approach and the aircraft made contact with the street lamp/s which was approximately 25m from the initial point of impact to where it stopped before it impacted with the fence. The aircraft continued skidded for approximately 35 m from the runway centre line before it came to a halt. The distance from the fence to the runway threshold is approximately 392m. According to the pilot, the fuel selectors were on the main tanks throughout the flight.

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 extensive damage to the propellers, wings and undercarriage.

1.4 Other Damage

1.4.1 None.

1.5 Personnel Information

| | | | | | |
|---------------------|--|---------------|---------|-----|----|
| Nationality | RSA | Gender | Male | Age | 58 |
| Licence Number | 0271051476 | Licence Type | Private | | |
| Licence valid | Yes | Type Endorsed | Yes | | |
| Ratings | Night | | | | |
| Medical Expiry Date | 28 February 2007 | | | | |
| Restrictions | Corrective lens; Annual stress ECG. | | | | |
| Previous Accidents | 26 July 2004: the aircraft (ZS-FVL) veered to the left during a touch-and-go | | | | |

Flying Experience

| | |
|----------------------------|-------|
| Total Hours | 449 |
| Total Past 90 Days | 48,10 |
| Total on Type Past 90 Days | 12,55 |
| Total on Type | 23 |

1.6 Aircraft Information

Airframe

| | | |
|--|------------------|---------|
| Type | Piper PA 30 | |
| Serial Number | 30-1218 | |
| Manufacturer | Piper | |
| Year of Manufacture | 1966 | |
| Total Airframe Hours (at time of accident) | 7 515,89 | |
| Last MPI (Date & Hours) | 12 May 2006 | 7 491,9 |
| Hours since Last MPI | 23,99 | |
| C of A (Issue Date) | 15 November 2005 | |
| C of R (Issue Date) (Present Owner) | 2 November 2005 | |
| Operating Categories | Standard | |

Engines

Left

| | |
|----------------------|---------------------|
| Type | Lycoming IO-320-B1A |
| Serial Number | L2587-55A |
| Hours since New | 7 317,57 |
| Hours since Overhaul | 174,35 |

Right

| | |
|----------------------|---------------------|
| Type | Lycoming IO-320-B1A |
| Serial Number | L2581-55A |
| Hours since New | 7 317,57 |
| Hours since Overhaul | 174,35 |

Propellers

Left

| | |
|----------------------|-----------------------|
| Type | Hartzell HC-E2YL-2BSF |
| Serial Number | 3122 |
| Hours since New | Unknown |
| Hours since Overhaul | Unknown |

Right

| | |
|----------------------|-----------------------|
| Type | Hartzell HC-E2YL-2BSF |
| Serial Number | 3346 |
| Hours since New | Unknown |
| Hours since Overhaul | Unknown |

1.7 Meteorological Information

1.7.1 The weather conditions at the time of the accident, according to the pilot's questionnaire:

| | | | | | |
|----------------|---------|-------------|------|------------|------|
| Wind direction | Unknown | Wind speed | Calm | Visibility | Good |
| Temperature | 18°C | Cloud cover | Nil | Cloud base | Nil |
| Dew point | Unknown | | | | |

1.8 Aids to Navigation

1.8.1 The aircraft was fitted with standard navigational equipment for the type. No abnormalities were reported prior to the accident.

1.9 Communications

- 1.9.1 The pilot communicated with the air traffic controller on VHF frequency 118.20MHz.
- 1.9.2 The aircraft was fitted with VHF radio communication equipment. No abnormalities were reported prior to the accident.

1.10 Aerodrome Information

| | | |
|------------------------|---------------------------|----------------|
| Aerodrome Location | FAWB | |
| Aerodrome Co-ordinates | S25 39' 00.0 E028 13'00.0 | |
| Aerodrome Elevation | 4 095 ft | |
| Runway Designations | 11/29 | 06/24 |
| Runway Dimensions | 1 828 m X 30 m | 1 280 m X 22 m |
| Runway Used | 11 | |
| Runway Surface | Asphalt | |
| Approach Facilities | PAPI,NDB | |

1.11 Flight Recorders

- 1.11.1 The aircraft was not equipped with a flight data recorder or cockpit voice recorder. Neither was required by regulations to be fitted to this aircraft type.

1.12 Wreckage and Impact Information

- 1.12.1 On final approach the right-hand engine lost power, followed by the left-hand engine. The pilot elected to execute a forced landing. On approach for landing on Runway 11, the aircraft struck a streetlight which was approximately 25m from the initial mark. The aircraft continued on its flight path and the main landing gears impacted a fence and the aircraft turned 180 degrees and continued skidding for some 35 meters before coming to a halt. The aircraft sustained extensive damages to the propellers, wings and the undercarriage.



Figure 1. Damage to the boundary fence of the airport.



Figure 2. The aircraft after the accident.

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 The accident was considered survivable due to the low impact forces and the fact that the crew were properly restrained with safety belts.

1.16 Tests and Research

1.16.1 According to the report from the aircraft maintenance organisation suggest that during the repairs it was found that both selectors were leaking between the main and auxiliary positions, even when the selectors were in the OFF position. It was discovered that a previous aircraft maintenance engineer had adjusted the timing of the selectors, causing "CAM" of the selector to push against two ball bearings at the same time. Each selector has got one of these balls that spring loaded sealing the hole in the selector when selecting the main, the "CAM" push against the ball and opens the fuel. By changing the timing of the selector it caused to open both main and auxiliary simultaneously.

1.17 Organisational and Management Information

1.17.1 This was a test flight.

1.18 Additional Information

1.18.1 Excerpted from POH:

Operation of fuel system in a Twin Comanche:

Fuel from each cell passes through a selector shutoff valve to a sediment bowl in the lowest part of the fuel system where it is filtered and any water or foreign particles are trapped. From there the fuel is drawn to the fuel injection system by an engine-driven pump. In the event of failure of the engine-driven pump, an electric auxiliary fuel pump is provided. In addition to the back-up function, this pump is normally operated when switching fuel tanks and during starting, takeoff and landing.

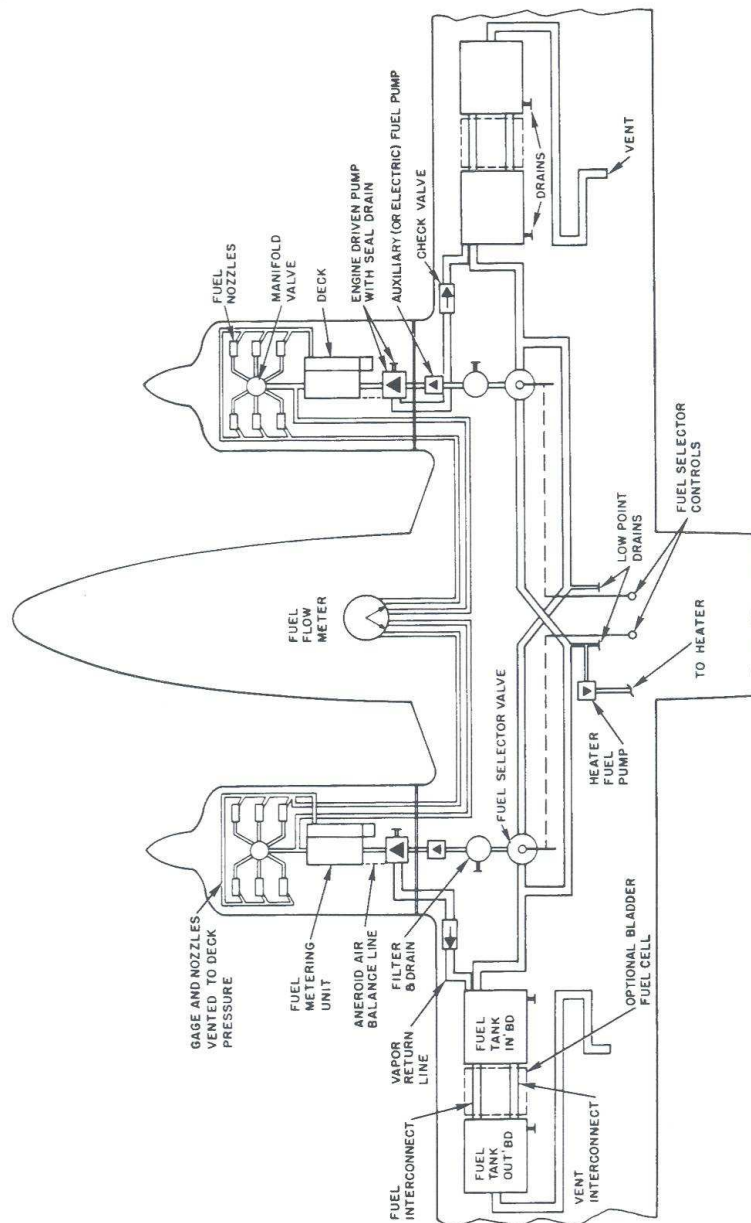


Figure 3. Schematic diagram of the fuel system.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

2.1 The pilot took off from Wonderboom Aerodrome for a test flight after a repair was carried out on the right-hand engine. The pilot had valid licence to conduct the flight and was medically fit.

2.2 On final approach for landing, the right-hand engine lost power, followed by the left-

hand engine. The investigation revealed that the aircraft had problems with blocked injector nozzles, which resulted in fuel starvation.

- 2.3 Fine weather conditions prevailed in the area at the time of the flight and subsequent accident. It was concluded that weather was not a contributory factor to the accident.

3. CONCLUSION

3.1 Findings

- 3.1.1 The pilot had a valid licence at the time of accident and was properly rated on the type of aircraft.
- 3.1.2 The last mandatory periodic inspection was carried out on 12 May 2006 at 7 491,9 airframe hours.
- 3.1.3 Weather was not a contributing factor to this accident.
- 3.1.4 Investigation revealed blocked injection nozzles resulting in the fuel starvation.

3.2 Probable Cause/s

- 3.2.1 Fuel starvation due to blocked fuel nozzles.

4. SAFETY RECOMMENDATIONS

- 4.1 None.

5. APPENDICES

- 5.1 None.

Compiled by:

Koketjo Babili
for Commissioner for Civil Aviation

Date:

Investigator-in-charge:

Date:

Co-Investigator:

Date: