



AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8798	
Aircraft Registration	ZU-EFG	Date of Accident	24 June 2010		Time of Accident	0830Z
Type of Aircraft	Ikarus C42		Type of Operation	Training		
Pilot-in-command Licence Type		Student pilot	Age	25	Licence Valid	No
Pilot-in-command Flying Experience		Total Flying Hours	19.5		Hours on Type	14.0
Last Point of Departure		Oudtshoorn Aerodrome (FAOH), Western Cape				
Next Point of Intended Landing		Oudtshoorn Aerodrome (FAOH), Western Cape				
Location of the Accident Site with Reference to Easily Defined Geographical Points (GPS readings if possible)						
Runway 22 at Oudtshoorn Aerodrome (GPS coordinates: S33°36'22" E022°11'22")						
Meteorological Information		Temperature 9°C, dew point 4°C, wind 250°TN at 4 kt, visibility >10 km, cloud cover Nil				
Number of People on Board	1 + 0	No. of People Injured	0	No. of People Killed	0	
Synopsis						
<p>On 24 June 2010 at 0830Z, an Ikarus C42 aeroplane with registration ZU-EFG, operated by an aviation training organisation and piloted by a student pilot, took off from Oudtshoorn Aerodrome (FAOH) with the intention to land back at FAOH. This was the student pilot's first solo flight. The training flight was being conducted under visual meteorological conditions (VMC).</p> <p>During the landing on runway 22 at Oudtshoorn Aerodrome, the aircraft veered to the left. The student pilot then applied opposite rudder. As this action did not stop the aircraft from veering to the left, he decided to apply full power and initiate a go-around. The aircraft became airborne with a high nose attitude and shortly thereafter the left wing dropped, resulting in the left wing and the propeller impacting the ground, where after the aircraft cart wheeled.</p> <p>The student pilot was not injured during the sequence of the accident. The aircraft was destroyed during the sequence of the accident.</p>						
Probable Cause						
The student pilot applied the incorrect go-around technique, placing the aircraft behind the drag curve and resulting in a stall that rendered ground impact inevitable.						
Contributing Factors						
No stall warning system installed in the aircraft						
IARC Date				Release Date		

AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Todd Air Finance CC
Manufacturer : Comco Ikarus GMBH
Model : Ikarus C42
Nationality : South African
Registration Marks : ZU-EFG
Place : Oudtshoorn Aerodrome (FAOH), Western Cape
Date : 24 June 2010
Time : 0830Z

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 two hours.

Purpose of the Investigation:

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (1997), this report was compiled in the interests 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 24 June 2010 at 0830Z, an Ikarus C42 aeroplane with registration ZU-EFG, operated by an aviation training organisation and piloted by a student pilot, took off from Oudtshoorn Aerodrome (FAOH) on a training flight with the intention to land back at FAOH. This was the student's first solo flight. The training flight was being conducted under visual meteorological conditions (VMC).
- 1.1.2 The student stated that during the landing onto runway 22 at FAOH, while on the landing roll, the aircraft veered to the left. He then applied opposite (right) rudder to no effect. The student pilot then decided to increase power and initiate a go-around.
- 1.1.3 Approximately 400 m down the runway, at an indicated airspeed of approximately 45 kt, the aircraft lifted off with a higher-than-normal nose attitude. The pilot stated that the aircraft became airborne but the left wing immediately dropped. The left wing and propeller then impacted with the ground 44 m to the left of the centreline of runway 22.

1.2 Injuries to Persons

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

1.3 Damage to Aircraft

1.3.1 The aircraft was destroyed during the sequence of the accident. (See Figure 1.)



Figure 1: Damage caused to the aircraft

1.4 Other Damage

1.4.1 No other damage was caused during the sequence of the accident.

1.5 Personnel Information

1.5.1 Student Pilot:

Nationality	Chinese	Gender	Male	Age	25
Licence Number	*****	Licence Type	Student		
Licence Valid	No	Type Endorsed	No		
Ratings	None				
Medical Expiry Date	31 March 2011				
Restrictions	None				
Previous Accidents	None				

1.5.2 Student Pilot's Flying Experience:

Total Hours	19.5
Total Past 90 Days	14.0
Total on Type Past 90 Days	14.0
Total on Type	14.0

- 1.5.2.1 Although the student pilot had 14 hours flying experience on the Ikarus C42 aircraft, the aircraft was never endorsed in his student pilot licence, rendering his licence invalid.

1.6 Aircraft Information

1.6.1 Airframe:

Type	Ikarus C42	
Serial No.	0508-6756	
Manufacturer	Comco Ikarus GMBH	
Year of Manufacture	2006	
Total Airframe Hours (At Time of Accident)	294.2	
Last Annual Inspection (Hours & Date)	248.5	5 June 2010
Hours Since Last Annual Inspection	45.7	
Authority to Fly (Issue Date)	28 April 2010	
C of R (Issue Date) (Present Owner)	10 March 2010	
Operating Categories	Standard	

1.6.2 Engine:

Type	Rotex 912 ULS
Serial No.	5-645-069
Hours Since New	294.2
Hours Since Overhaul	TBO not reached

1.6.3 Propeller:

Type	Neuform
Serial No.	058
Hours Since New	294.2
Hours Since Overhaul	TBO not reached

1.7 Meteorological Information

- 1.7.1 Meteorological information was obtained from the South African Weather Service. The most likely weather conditions at the time of the accident are given in the table below.

Wind Direction	250°TN	Wind Speed	04 kts	Visibility	> 10 km
Temperature	09°C	Cloud Cover	Nil	Cloud Base	Nil
Dew Point	04°C				

1.8 Aids to Navigation

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

1.9 Communications

1.9.1 The aircraft was equipped with standard communication equipment as per the minimum equipment list approved by the regulator. There were no recorded defects for any of the communication equipment prior to the flight.

1.10 Aerodrome Information

Aerodrome Location	1 nm SW from Oudtshoorn Town
Aerodrome Co-ordinates	S33°36'22" E022°11'22"
Aerodrome Elevation	1 063 ft
Runway Designations	04/22
Runway Dimensions	1 700 m x 30 m
Runway Used	Runway 22
Runway Surface	Asphalt
Approach Facilities	NDB, runway lights

1.11 Flight Recorders

1.11.1 The aircraft was not fitted with a cockpit voice recorder (CVR) or a flight data recorder (FDR), and neither was required by regulations to be fitted to this type of aircraft.

1.12 Wreckage and Impact Information

1.12.1 Location of impact impressions on the ground:

The first impact impression was caused when the left wing tip impacted the ground approximately 44 m to the left of the centreline of runway 22. The second impact mark was the impression of the propeller approximately 52 m to the left of the centreline of runway 22. The third and final impression was when the aircraft came to rest approximately 60 m to the left of the centreline of runway 22 facing in a direction of 280°M.

1.12.2 Primary debris path:

The primary debris path was scattered in a radius of 20 m around the main wreckage.

1.12.3 Final position of the aircraft:

The final position of the aircraft was to the left of runway 22, approximately 60 m from the centreline of runway 22.

1.12.4 Impact sequence:

The left wing tip impacted the ground first where after the propeller and engine impacted the ground.

1.12.5 Aircraft attitude during impact:

The aircraft impacted the ground in a nose-down attitude with the left wing low.

1.13 Medical and Pathological Information

1.13.1 The pilot did not sustain any injuries during the accident sequence.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 Although the aircraft was destroyed during the accident sequence, the accident was survivable due to the low impact forces on the cockpit and the safety harness worn by the pilot.

1.16 Tests and Research

1.16.1 None

1.17 Organisational and Management Information

1.17.1 The last annual inspection that was certified on the aircraft prior to the accident was on 5 June 2010 at 99.3 hours by a SACAA-approved aircraft maintenance organisation (AMO), which was in possession of a valid AMO Approval Certificate.

1.17.2 Although the aircraft was certified by the AMO as serviceable, the aircraft had no compass swing since 23 August 2007, which invalidated the aircraft's authority to fly.

1.17.3 Several entries in the aircraft's logbook were certified by an approved person even though these entries did not contain all the necessary information and were completed in pencil.

1.17.4 The last Certificate of Release to Service contained the incorrect date.

- 1.17.5 The airframe component record attached to the aircraft's logbook has the correct serial number but the incorrect registration number.
- 1.17.6 Various discrepancies were found between recorded aircraft hours in the flight folio. For example, hours recorded on the last page of the flight folio were less than hours recorded earlier in the flight folio.
- 1.17.7 The Ikarus 42C aircraft was not endorsed on the student pilot's licence.
- 1.17.8 No records could be found of any application forms to have the Ikarus 42C aircraft endorsed on the instructor's pilot's licence even though the instructor was signed out as competent on the Ikarus C42 aircraft. An application to have the Ikarus C42 aircraft endorsed on the instructor's licence was only made to the SACAA after the accident.
- 1.17.9 The aircraft was operated by an approved SACAA aviation training organisation (ATO), which was in possession of an approved ATO certificate.

1.18 Additional Information

- 1.18.1 Departure Stall (*Flight Training Manual*, 4th Edition, Transport Canada):

"During take-off and the initial stages of departure, an aircraft enters into and passes through the critical condition of flight. After leaving the ground and accelerating to climbing airspeed, the aircraft passes through a period of low airspeed at low altitude. Any abrupt pull-up reduction in engine power could cause the aircraft to stall. Should a mishap occur at this point and good airmanship prevails, the throttle can be closed and a landing safely made straight ahead with only small changes in direction to avoid obstructions. However, should an aircraft attitude become nose high after rotation, a stall may occur from which a successful recovery cannot be made, or if the aircraft is in a near-stalled condition, it will not climb sufficiently to clear obstacles in the flight path. Therefore, establishing the correct nose-up attitude for a climb after take-off is imperative."

- 1.18.2 The Ikarus C42 aircraft is not equipped with a stall warning system to warn the pilot when entering a stall condition.

1.19 Useful or Effective Investigation Techniques

- 1.19.1 None

2. ANALYSIS

- 2.1 According to the pilot's records, he was the holder of a student pilot licence (aeroplane). The Ikarus C42 aircraft was not endorsed on his licence. He was also in possession of a valid medical certificate without any medical restrictions imposed.
- 2.2 The pilot was not injured during the accident sequence.
- 2.3 Although maintenance was done by competent maintenance personnel, not all records indicated proper maintenance had been done, the logbook was not

complete and contained incorrect information.

- 2.5 The engine was found attached to the aircraft with no evidence of fire damage, structural damage or foreign object damage other than damage caused by the accident sequence.
- 2.6 Available evidence indicates that the go-around was performed at low speed with a higher-than-normal nose attitude, which resulted in a stall condition.
- 2.7 According to the weather information obtained from the South African Weather Service, the weather was fine at the time of the accident.

3. CONCLUSION

3.1 Findings:

- 3.1.1 The Ikarus aircraft was not endorsed in the student pilot licence.
- 3.1.2 Although the aircraft was not properly maintained, maintenance-related issues did not contribute to the cause of the accident.
- 3.1.3 Although the aircraft was destroyed during the sequence of the accident, the accident was regarded as survivable due to the low-impact forces on the cockpit area.
- 3.1.4 Weather conditions did not contribute to the accident.

3.2 Probable Cause/s:

- 3.2.1 Incorrect go-around technique placed the aircraft behind the drag curve, which resulted in a stall and inevitable ground impact.

3.3 Contributing Factors:

- 3.3.1 No stall warning system installed in the aircraft

4. SAFETY RECOMMENDATIONS

- 4.1 It is recommended the Airworthiness Department within the SACAA investigate the possibility of requiring a stall warning system on all aircraft to be used for initial pilot training to warn inexperienced pilots of a stall condition.

5. APPENDICES

- 5.1 None

Report reviewed and amended by the Advisory Safety Panel 19 October 2010.

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