



REPUBLIC OF NAMIBIA
MINISTRY OF WORKS AND TRANSPORT

Directorate of Aircraft Accident and Incident
Investigations

Accident Reference: ACCID/07172023/01-06

Aircraft Accident Investigation Preliminary
Report

RELEASE DATE: *16 August 2023*



Aircraft Accident Preliminary Report

DESCRIPTION OF OCCURRENCE: Robinson 44 Helicopter
crashed East of Swakopmund Airfield

Reference number : ACCID 07172023-01-06
Name of the owner : Golden Game CC
Operator : Golden Game CC
Type of operation : Maintenance Test Flight
Manufacturer : Robinson Helicopter Company
Model : Robinson R44 II
Registration marking : ZS-HLG
Place : Swakopmund Airfield (FYSM), Erongo
Region, Namibia

Date : 17 July 2023
Time : 13H50 UTC

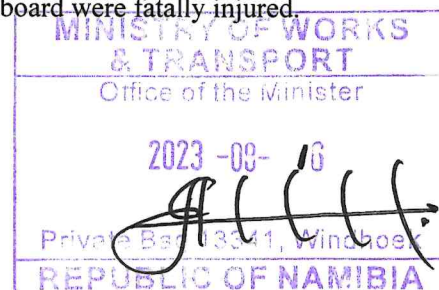


Figure 1: The Robinson 44 Raven II Helicopter ZS-HLG, accident aircraft (source: Flight Zone)

ZS-HLG Robinson R44 II 11517 (S/N)

Description:

On Monday afternoon, 17 July 2023 at around 13:35 UTC (15:35 Local Time), a Robinson R44 Helicopter with registration ZS-HLG took off from Swakomund Airfield for a Maintenance Test flight to the east of Swakopmund airstrip. Fifteen minutes later after Lift-off, at 13: 50 UTC (15:50 Local Time) the helicopter crashed. The Pilot and the Maintenance Engineer on-board were fatally injured.



Introduction

The information contained in this Preliminary Accident Report is published to inform the aviation Industry and the public of the general circumstances of the accident that occurred on the 17 July 2023.

The purpose of the Directorate of Aircraft Accidents and Incident investigations (DAAII) is to promote aviation safety through the conduct of independent investigations without prejudice to any judicial or administrative authority consistent with provisions of Namibian Civil Aviation Act, Act 6, of 2016. Which is in-line with ICAO's Annex 13 paragraph 7.1 and 7.2.

The Directorate of Aircraft Accident and Incident Investigations (DAAII) as the authority in charge of the investigations will work in close corporation with state of aircraft manufacture and state of aircraft registration when needed.

Note: The information provided herein is of a preliminary nature. Readers are cautioned that there is the possibility that new information may become available that alters this Preliminary Accident Report prior to the availability of the Final Accident Report. Any person who has information concerning this accident should contact the Directorate of Aircraft Accident and Incident Investigation (DAAII) on daaii@mwlt.gov.na

Investigation process:

The Directorate of Aircraft Accident and Incident Investigation (DAAII) was informed telephonically by the Aviation Maintenance Organization (AMO) of the accident at 14:00 UTC (16:00 Local time), 17 July 2023, of a R44 Helicopter that crashed at Swakopmund Airfield. DAAII appointed an Investigator-in-charge and a Co-investigator that will lead the investigation and issue the final report. The DAAII reports are made available to the public at <https://mwlt.gov.na/de/published-daai-report>



Directorate of Aircraft Accident and Incident Investigations
Namibia

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Abbreviation	Description
AGL	Above Ground Level
AMSL	Above Mean Sea Level
AOC	Air Operating Certificate
ATC	Air Traffic Controller
°C	Degrees Celsius
CAR	Civil Aviation Regulations
CAVOK	Cloud and Visibility OK
CoA	Certificate of Airworthiness
CPL	Commercial Pilot Licence
CVR	Cockpit Voice Recorder
DAAII	Directorate of Aircraft Accident and Incident Investigations
FDR	Flight Data Recorder
ft	Feet
GPS	Global Positioning System
hPa	Hectopascal
ICAO	International Civil Aviation Organisation
IIC	Investigator-in-charge
kts	Knots
m	Metre
METAR	Meteorological Aerodrome Report
MHz	Megahertz
MPI	Mandatory Periodic Inspection
MTOW	Maximum Take-off Weight
NCAA	Namibia Civil Aviation Authority
PIC	Pilot-in-command
POH	Pilot's Operating Handbook
QNH	Barometric Pressure Adjusted to Sea Level
TBO	Time Between Overhaul
UTC	Co-ordinated Universal Time
VFR	Visual Flight Rules
VHF	Very High Frequency



1. FACTUAL INFORMATION

1.1. History of the flight

- 1.1.1. On Monday afternoon, 17 July 2023, at around 13:35 UTC (15:35 Local Time) a Robinson R44 Raven II helicopter with registration ZS-HLG departed from Swakopmund Airfield (FYSM) to perform maintenance test flight. The purpose of the flight was to conduct final rotor balancing and to execute auto-rotations. Onboard the helicopter was the pilot and a maintenance engineer.
- 1.1.2. The helicopter was purchased from South Africa and brought into Namibia in February 2022 by the owner on a trailer. The Owner took the helicopter to a local Aviation Maintenance Organization (AMO) for maintenance inspection and certification. The helicopter and engine required a twelve-year inspection.
- 1.1.3. After all maintenance work on the helicopter was completed the AMO informed the owner that they were ready for test flying. They started with the test flights on Friday the 14th of July 2023. Another test flight was conducted on Saturday, 15 July 2023.
- 1.1.4. The accident flight was the last test flight which required rotor balancing and to execute auto-rotations. During the auto-rotation one of the main rotor blades hit the tailboom causing it to detached from the main fuselage. The helicopter came spiraling down to the ground.
- 1.1.5. The helicopter impacted the ground on the left side at a very high velocity. The tailboom was found 158 meters away from the wreckage. The front part of the blade that struck the tail was found 55 meters away from the main wreckage. The resultant accident was not a survivable accident.
- 1.1.6. Eyewitnesses, the local Flying school crew and the AMO crew rushed to the crash site. They called the Police, the Ambulance and the Swakopmund Municipal Fire Brigade. Sadly, the pilot and the maintenance engineer on-board were fatally injured.
- 1.1.7. The Directorate of Aircraft Accident and Incident Investigations was informed at 14:00 UTC (16:00 Local time) by the AMO and a full Investigation was launched.



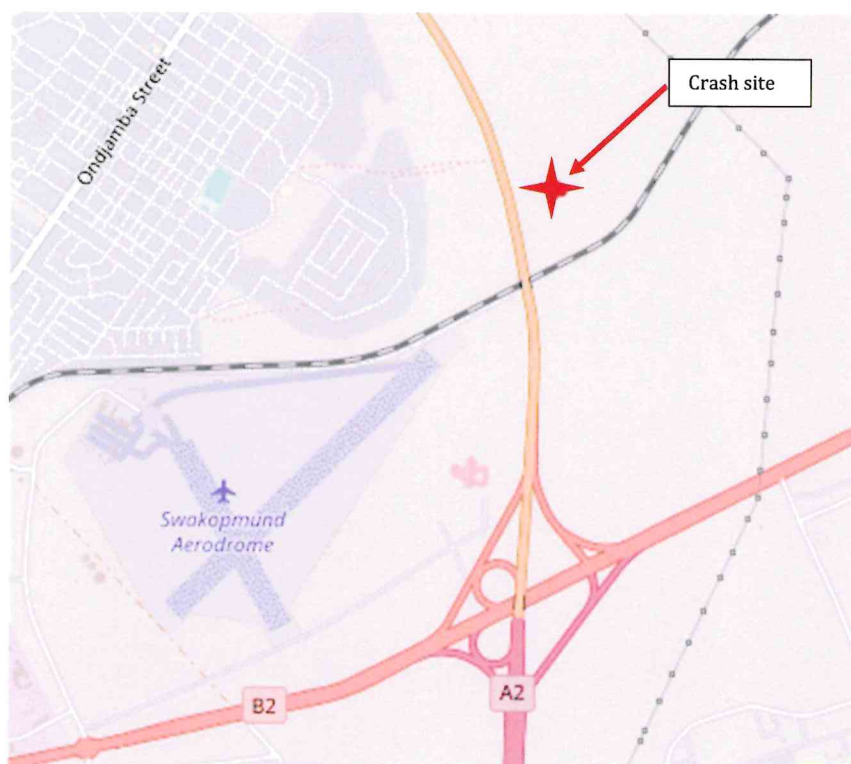


Figure 2: Picture showing where the helicopter crashed.

1.2. Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	1	1	0	0
Serious	0	0	0	0
Minor	0	0	0	0
None	0	0	0	0

1.3. Damage to Aircraft

1.3.1. The helicopter was destroyed.



Figure 3: Picture showing the destroyed Helicopter as it came to rest.

1.4. Other Damage

There was no other damage.

1.5. Personnel Information

1.5.1. Pilot-in-in command

Nationality		Namibian			
Licence No	CR 0652	Gender	Male	Age	54
Licence valid		Yes	Type Endorsed	Yes	
Ratings		R44, R22			
Medical Expiry Date		28/02/2024			
Restrictions		Valid only with correction for defective near vision			
Previous Accidents		Unknown			

The pilot was a holder of a valid Namibian Helicopter License issued according to the Namibian Civil Aviation Regulation (2001) part 61.01.10 his R44 endorsement was valid until 07/12/2023



Helicopter Flying Experience:

Total Hours	181,9
Total on Type	79,8

1.6. Aircraft Information

1.6.1. Aircraft description

The Robinson R44 Raven II helicopter is a four-seater aircraft. The Robinson R44 family of Helicopters comprises all metal, unpressurised, piston powered single engine.

Airframe:

Type	Robinson R44 Raven II
Serial No.	11517
Manufacture	Robinson Helicopter Company
Year of Manufacture	16 November 2006
Total Airframe Hours (At time of Accident)	975.6 (as per last recorded entry on the log book date 15/08/2017)
Last MPI (Date & Hours)	975.6 (as per last recorded entry on the log book date 15/08/2017) by SA AMO 1266
Hours since Last MPI	unknown
C of A (Issue Date)	None
C of R (Issue Date)	Not registered in Namibia

Engine:

Type	Textron Lycoming
Serial No.	L-35693-48E
Engine total hours	1526.5
Hours since Overhaul	151.*

**The engine that was installed in the helicopter was not the original engine of the imported helicopter (ZS-HLG), the accident engine was taken from a Namibian registered helicopter V5-HJL (R44).*

1.6.2. Weight and Balance

To be discussed in the final report

1.7. Meteorological Information

1.7.1. The weather information report was obtained from Walvis bay Air Traffic Services.

Wind direction	210°	Wind speed	12kts	Visibility	Good
Temperature	22°C	Cloud cover	Clear	Cloud base	N/A
Dew point	10°C				

1.8. Aids to Navigation

The Airstrip where the aircraft took off from is not equipped with any Navigation aids nor was it required by any Regulations.

1.9. Aerodrome Information

1.9.1. The aerodrome utilized for the accident flight is a cross runway aerodrome. The runway designators are 06/24 and 17/35 located at Swakopmund airfield.

1.9.2. The helicopter did not made use of the runway and lifted off from the *Run-up pad.

Aerodrome Location	Swakopmund Airfield	
Aerodrome GPS coordinates	22°39'30"S 014°34'00"E	
Aerodrome Elevation	170 FT	
Runway Designators	06/24	17/35
Runway Dimensions	1600 x 18	963 x 24
Runway used	N/A	N/A
Runway surface	Slurry seal	Sand
Aids to Navigation	None	

**The Run-up pad is the area where aircraft do engine run-ups, usually before take-off.*

1.10. Flight Recorders

- 1.10.1. The aircraft was neither equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR), nor was it required in accordance with the regulations.

1.11. Wreckage and Impact Information

- 1.11.1. The tailboom was found approximately 158m from the main wreckage and the front piece of one of the main rotors was found 55 meters away from the main wreckage. The impact was so severe that the main cabin was compressed. The helicopter was destroyed.

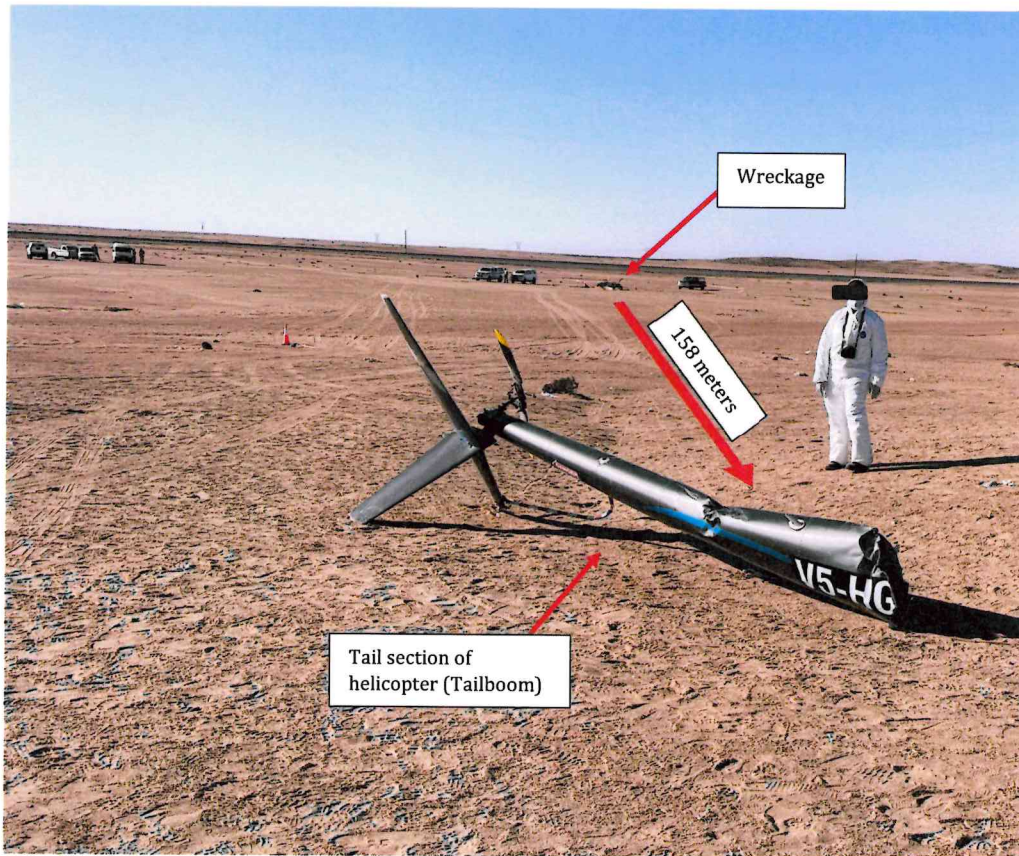


Figure 4: Picture showing how far the tailboom landed away from the main wreckage.



Figure 5: Closer view of helicopter.

1.12. Medical and Pathological information

1.12.1. This information will be made available in the final report.

1.13. Fire

1.13.1. There was no evidence of fire in flight or after the impact.

1.14. Survival Aspects

1.14.1. The accident was not survivable because the impact forces exceeded the human body tolerance. More details will be discussed in the final report.

1.15. Tests and Research

1.15.1. The full report will be discussed in the final report.

1.16. Organizational and Management Information

1.16.1. To be discussed in the final report.

1.17. Additional Information

1.17.1. To be discussed in the final report

1.18. Useful or Effective Investigation Techniques.

1.18.1. To be discussed in the final report.

2. Analysis

- 2.1. To be discussed in the final report

3. Conclusions

3.1. Findings

Although the investigation is on-going, the following provisional findings were made:

The pilot

- 3.1.1. The pilot had a valid Commercial Helicopter Pilot Licence (CPL). According to the logbook the pilot had flown a total of 181.9 hours, of which 79.8 hours were on the aircraft type at the time of accident.
- 3.1.2. The pilot had a class 1 aviation medical certificate that was issued on 10 February 2023 with an expiry date of 28 February 2024.
- 3.1.3. The pilot was fatally injured during the accident.

The aircraft

- 3.1.4. The Helicopter did not have any valid Certificate of Airworthiness (CoA) for South Africa or Namibia.
- 3.1.5. The Helicopter arrived in Namibia in February 2022, and the Aviation Maintenance Organization (AMO) applied for the registration, V5-HGG, to be reserved only in June 2023. The regulator, the Namibia Civil Aviation Authority (NCAA), did reserve the registration. Despite the reservation, the owner of the helicopter did not proceed with actual registration process.
- 3.1.6. During the accident the helicopter was still registered in South Africa under the South African registration ZS-HLG.
- 3.1.7. The helicopter also did not have a Test Flight Permit to perform the test flights.
- 3.1.8. Instead of using its original engine, the helicopter was equipped with an engine that previously belonged to a Namibian registered helicopter with the registration number V5-HJL (R44).


3.2. On- going investigation

- 3.2.1. The DAAII investigation is on-going and will include all other aspects of this accident which may or may not have safety implications.

4. Safety Recommendations

4.1. None

Compiled by:


Ben C. A. Engelbrecht
Investigator-in-charge
DAAII

Date: 08 August 2023


Hafeni Mweshixwa
Co-Investigator
DAAII

Date: 08 August 2023

Released by:


Hon John Mutorwa, MP
MINISTER: MINISTRY OF WORKS AND TRANSPORT

Date: 16 August 2023

