



*Federal Public Service
Mobility and Transport
Belgian Civil Aviation Authority*

Air Accident Investigation Unit

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CCN
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**FINAL REPORT ON THE ACCIDENT
TO AGUSTA BELL AB 206 A
REGISTERED OO-ACR
IN DESTELDONCK
ON 2 SEPTEMBER 2007**

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FOREWORD

This report is a technical document that reflects the views of the investigation team on the circumstances that led to the accident,

In accordance with Annex 13 of the Convention on International Civil Aviation, it is not the purpose of aircraft accident investigation to apportion blame or liability. The sole objective of the investigation and the Final Report is the determination of the causes, and define recommendations in order to prevent future accidents and incidents.

In particular, Article 13 of the King's Decree of 9 December 1998 stipulates that the safety recommendations made in this report do not constitute any suspicion of guilt or responsibility in the accident.

Unless otherwise indicated, recommendations in this report are addressed to the Regulatory Authorities of the State having responsibility for the matters with which the recommendation is concerned. It is for those Authorities to decide what action is taken.

The investigation was conducted by L. Blendeman.

NOTE: For the purpose of this report, time will be indicated in UTC, unless otherwise specified.

Synopsis

Date and hour of the accident

Sunday, 2 September 2007, around 15.46 UTC.

Aircraft

Type: Agusta Bell AB 206 A
Registration: OO-ACR

Accident Location:

In a field in Desteldonck: N 51°07,879 – E 03°48, 173

Aircraft Owner

Alpha Air Company
Bohemen, 158
9260 Wichelen

Type of flight

Private.

Persons on board

1 Pilot

Abstract.

The helicopter was hired for a party. During the afternoon, a series of first flights happened, without any troubles reported.

At the end of the day, the pilot decided to return to the home base, Wichelen. The engine rotated at idle, while the pilot made a phone call to announce his return.

When the pilot opened the throttle, the helicopter translated slightly to the rear, and the rear end of the right hand skid got stuck in the ground. Caught by a dynamic rollover, the helicopter rolled to its right side and crashed.

1. Factual Information

1.1. Chronology of the events

The helicopter took off on September 2, around 12.00 from Wichelen to Desteldonck. This flight is only 10 min.

The helicopter was hired for a party, for which he was to perform a series of first flights for the participants. In all, the flight time for the first flights was 3,5 hours.

The flights lasted until 15.30. The pilot decided then to go back to his home base. He phoned home, leaving the engine at idle.

according to the pilot, he left the cyclic controls to the neutral, and applied the friction brake.

The fuel gauges indicated a remaining quantity of fuel of 15 USG. The return flight would require a maximum of 8 USG.

When he decided to take-off, around 15.45, the pilot applied full throttle, and collective controls.

The helicopter, at that time, translated to the rear, and the rear end of the RH skid bored into the ground. The LH skid left the ground, and the helicopter was brought into a rotation movement around its RH skid, in a dynamic rollover.

The helicopter rolled to its RH side, and crashed.

1.2. Injuries to persons

Injuries	Pilot	Passenger	Others	Total
Fatal	0	0	0	0
Serious	0	0	0	0
Minor	0	0	0	0
None	1	0	0	1
Total	1	0	0	1

1.3. Damage to aircraft

The helicopter was severely damaged; the rotor blades struck the ground and separated, the main rotor transmission was torn away, and the airframe suffered severe deformation.



1.4. Other damage

The main rotor blade broke upon contact with the ground, and a part flew away, severing an electricity distribution cable, and hit the roof of a hangar nearby.

The field was also polluted by the fuel from the helicopter.

1.5. Personnel information

Pilot.

Sex: male

Age: 50

Nationality: Belgian

Licence: PPL on Bell 206, issued 29.09.2005, valid until 16.09.2007.

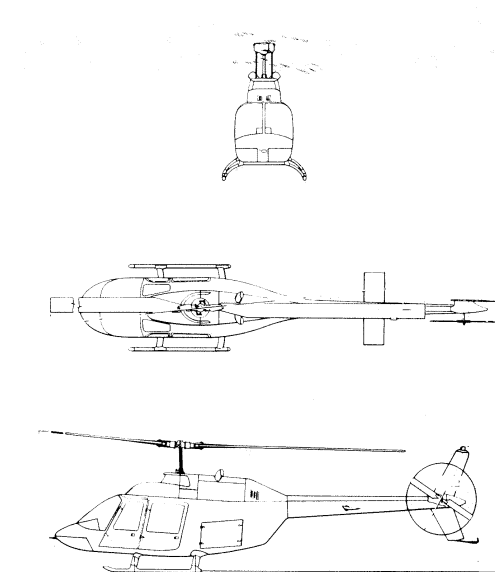
Medical: Class 2, valid until 16.09.2007, without restrictions.

The pilot had a total of 182h 56 min experience on helicopters, from which 87h 26min as pilot-in-command.

On type, the pilot had flown the AB206A for 10 h during the last 6 months, and had successfully past the re-qualification check the day before.

1.6. Aircraft information

The Agusta Bell AB 206 A JetRanger is a two-bladed main rotor, turbine-powered helicopter with a conventional, two-bladed tail rotor. It uses hydraulic boosted flight controls. It allows for a pilot and 4 passengers.



Airframe

Manufacturer: Agusta Bell

Type: AB 206 A

Serial Number: 8177

Registration: OO-ACR

Certificate of Registration: N° 5139, issued on 6/3 /2003

Certificate of Airworthiness: issued on 15/05/2007 in category small rotorcraft (CS-27).

Airworthiness Review Certificate: issued 30 August 2007, valid until 22 February 2008.

Total Flight Hours: 12532 h 54 min

Engine

Manufacturer: Rolls-Royce Allison.

Type: 250-C18.

Serial: CAE-802134B.

Total Flight Hours: 9162 h 54 min.

Maintenance

Maintenance on this helicopter was performed in accordance with manufacturer's recommendations.

The last 100 h / annual inspection was performed by a Part-145 approved company on 28/08/2007.

The performance of maintenance tasks on this helicopter had not be timely performed in the past, causing BCAA to notify the owner of this breach of airworthiness in February 2006 and May 2007. Corrective action was applied by the operator, and the Airworthiness Review Certificate was re-issued on 30 August 2008.

Owner

Alpha Air Company nv

Bohemen 158

9260 Wichelen

1.7. Meteorological information

Observed at Semmerzake EBSZ at 15.25

Wind:

Direction: 250°

Speed: 9 Knots

Visibility: unlimited

Clouds: Few at 3800 ft, Scattered at 4400ft, Broken at 6000 ft

Pressure: 1016 kPa

Temperature: 19 °C

Dew Point: 12 °C

The meteorological conditions have had no impact on the occurrence.

1.8. Aids to Navigation

Not applicable

1.9. Communication

Not Applicable.

1.10. Airport information

The helicopter took off from a temporary helipad. This location had not been communicated to BCAA, and no specific authorization was issued.

1.11. Flight Recorders

Not applicable

1.12. Wreckage and Impact information.

The helicopter is lying on its RH side, at the point of take-off. The terrain is an agriculture field; the surface is flat but rough.

1.13. Medical and Pathological information

The pilot was not injured.

1.14. Fire

There was no fire.

1.15. Survival Aspects

The pilot was wearing a safety belt.

1.16. Test and Research

The wreckage was inspected after the crash.

All damages were found to be caused by the rolling motion of the helicopter around the RH skid acting as a pivot.

The engine was operating normally, and was shut down by the pilot. The main rotor was rotating; a part of a blade flew to a distance of ca 250 when the blade broke when hitting the ground.

2. Analysis.

The helicopter experienced a phenomenon called dynamic rollover, even though the helicopter was not in movement at the time.

During take-off, the pilot needs to ensure that the cyclic controls is in position to ensure the main rotor thrust is vertical. As collective is increased and the helicopter becomes light on the skids, the cyclic has to be compensated for winds, loading and translating tendency.

Due to the preset position of the cyclic (friction), this controls was not in neutral position when the pilot applied full power. The helicopter started to translate to the rear, unnoticed by the pilot. At that time, the rear end of the RH skid pinned to the ground, creating a pivot point.

The helicopter tilted around the pivot point up to a critical angle of roll, around 15 degrees. Passed this point, the rollover is inevitable.

3. Conclusions.

3.1. Findings

- The helicopter had a valid Certificate of Airworthiness, and was technically fit at the time of the occurrence.
- The pilot had a valid PPL license.
- The terrain on which the helicopter was rough.

3.2. Causes.

The helicopter was caught off-balance when lifting-off, and experienced a dynamic roll-over.

4. Safety recommendations.

There are no safety recommendations made specifically for this event.