

DUTCH SAFETY BOARD

Occurrence number: 2007028

Classification: Accident

FACTUAL INFORMATION

Date of the occurrence:	02-04-2007	Crew:	1
Place of the occurrence:	Roermond	Pilots experience:	approx. 350 hours on motor-gliders including 17 hours within the last two years
Aircraft registration:	D-KDBV		
Aircraft model:	Scheibe SF25 C Falke		
Aircraft type:	motorglider		
Type of flight:	local flight	Passenger(s):	nil
Phase of flight:	en route	Injuries:	1 fatal
Damage to aircraft:	destroyed	Lighting conditions:	daylight

The flight and the occurrence

The D-KDBV, a two-seater motorglider took off from the airfield Grefrath in Germany (EDLF) at 17.12 (local time).¹ The pilot was the only occupant. From an interview with an airfield employee it was found that the pilot had the intention to conduct a local flight. Before departure the pilot had performed the pre flight checks and he had the aircraft refuelled with 50 litres of fuel. No flight plan for an international flight was filed.



Figure 1: Archive picture D-KDBV

Approximately one hour after departure (approximately 18.10) the pilot of the D-KDBV established radio contact with the airport authority of the airfield Grefrath. He requested to be provided with a QDM (a heading towards the airfield) and when, after taking a bearing, the radio controller had informed the pilot to steer a heading of 055 degrees, no further radio communication was exchanged. The airport employee had made a radio call to the D-KDBV afterwards but the pilot did not answer any more.

Some time after this radio call had been made, citizens of Roermond observed an aircraft flying over the city. The time as mentioned by these citizens varied between 18.10 and 18.30. The aircraft was climbing and descending steeply (on some occasions seeming a vertical climb or -descent) and one or two people stated that loopings were made. The engine noise was increasing and decreasing alternately. Some of these citizens subsequently observed the aircraft with an increasing rate of descend while making a turn and finally crash into a residential area. The aircraft appeared to have crashed onto an undeveloped area between houses in Roermond and was completely destroyed. The pilot had deceased. There was no fire.

Investigation & Analysis

Investigations have been performed by Investigators of the Dutch Safety Board at the accident site. Furthermore information provided by the Aviation Police department has been utilized.

¹ All times in this report are local times, unless indicated otherwise.

The aircraft

The D-KDBV was a single engined aircraft, of the motorglider type, and owned by an aeroclub on the airfield Grefrath. The aircraft had passed its yearly mandatory inspection on 27 October 2006. The aircraft had a valid certificate of airworthiness. Two other flights had been performed with the D-KDBV that day, from 15.15 till 15.40 and from 16.23 till 16.32. With regard to these flights no technical complaints had been reported. From the aircraft operations manual it was found that the maximum fuel quantity of the aircraft was 55 litres which allows for approximately 4.5 hours endurance. The fact that the pilot had refuelled the aircraft before flight with 50 litres of fuel and the statements of witnesses that until the final moment engine noise could be heard, justifies the conclusion that sufficient fuel was on board and that no engine problems existed.

Some time after the accident the aircraft has been examined by a ground engineer of the Aviation Police and investigators of the Dutch Safety Board. As a result of the aircraft being damaged substantially the extend of that investigation remained limited. As far as was possible to determine, the controls of the aircraft had operated normally. The engine and the instruments could not be subjected to an examination anymore because they were destroyed completely.

The pilot

The pilot was a man 76 years of age from Germany. He possessed a valid licence to operate the flight. He had undergone a mandatory check flight on the D-KDBV with an instructor on 26 October 2006 with good results. The pilot had a total flying experience of approximately 350 hours on single engined aircraft and motor gliders.

For the issuance of his medical certificate the pilot had undergone a medical test on 22 November 2006. On the basis of this medical test the medical certificate had been extended until 2 December 2007.

The remains of the pilot have been subjected to an autopsy. The following information, amongst other things, resulted from the report of the pathologist:

- It was established that a cardiac abnormality existed.
- This condition posed a serious threat to disruption of the coronary function and this risk increases in stressful situations.
- The heart condition as identified can result in disturbances in the movements of arms and legs or convulsion as a result of pain.
- The condition also can result in a decrease or loss of consciousness.
- The pilot was still alive at the moment the aircraft hit the ground.

The flight

From an interview with the airport authority employee of the airfield Grefrath it appeared that pilots departing from Grefrath rarely did so with the purpose to conduct a local flight over the Netherlands. This also applied to the pilot of the D-KDBV. As far as could be verified there was no reason for him to operate a flight to Roermond. He furthermore had not filed a flight plan and he had informed the airport authority that he was going to make a local flight. He had not announced to have the intention to proceed to the Netherlands. Since the pilot of the D-KDBV, approximately one hour after departure, requested the airport authority by radio to provide him with the heading to the airfield Grefrath, it may be concluded that the pilot inadvertently ended up over Roermond and was not acquainted with his exact position.

Though there were no clouds and according to the report of the Royal Dutch Meteorological Institute (KNMI) the visibility was more than ten kilometres. According to the airport authority employee a hazy, 'milky' visibility existed. This could have played a role in the pilot's determination of his position. The difference in visibility values can be explained from the fact that the meteorological services determines the visibility value on observer level which is considerably lower than the altitude the flight was operated on. As far as could be verified the pilot did not establish contact with a Dutch air traffic control service; he exclusively had radio contact with the airport authority of Grefrath. No radar plots are available on which the D-KDBV could be observed.

The accident

The final part of the flight has been observed by various witnesses from the ground. Though there are slight differences in their descriptions, they resulted, amongst other things, in the following information:

- The aircraft has been observed over the southern part of Roermond proceeding from east to west.
- The aircraft alternately executed steep climbing and descending manoeuvres and turns with varying engine noise. Some witnesses provided statements regarding aerobatics and loopings.
- The final part of the flight was performed on a very low altitude, just a few meters above the rooftop of the nearby houses, in a left turn of approximately 180 degrees.
- After this turn the aircraft crashed in an undeveloped open terrain.

One witness has made some film shots of the final part of the flight. These show the aircraft making a steep nose dive manoeuvre, during which the engine noise increased considerably, and subsequently making a climbing left turn. During that manoeuvre the engine noise decreased. The variation in engine noise can be explained from the higher speed of the aircraft during its descent causing the rotational speed of propeller to increase. During the climbing manoeuvre the engine noise decreased again which can be explained from the decreasing speed of the aircraft and the consequent decrease of propeller rotation. The aircraft had a banking attitude during the execution of these manoeuvres. At the top the aircraft made a turn, after which the climbing manoeuvre turned into a nose dive again. These manoeuvres were executed with the aircraft flying over the build-up area with, at its lowest position, an altitude of some tens of meters over the buildings.

The location at which the D-KDBV came to rest is an undeveloped open terrain within a residential area. The size of the terrain is estimated to be 200 meters by 100 meters. The terrain is surrounded by buildings at all sides. The aircraft approached from a southerly direction. Before it crashed the D-KDBV touched a tree which broke off. Subsequently the aircraft came to rest at the north side of the terrain against a bank of earth. Debris from the aircraft was dispersed and for the main part had ended up against the fence of a house. This house was damaged slightly as a result of the accident.

From the evidence provided by witnesses and the film shots, it may be concluded that uncontrolled flying manoeuvres were performed. With a view to the fact that the pilot had not been trained in the performance of aerobatic manoeuvres and was known as a pilot who did not take any risks and that the motor glider is not suitable for the execution of aerobatic manoeuvres, the possibility that the pilot



Figure 2: The accident site

performed aerobatic manoeuvres on purpose, overhead the build-up area, is very unlikely. Furthermore it is unlikely that the pilot did try to execute an emergency landing on the open terrain; it appeared from the broken tree that the D-KDBV approached the terrain in a steep angle of descent. Furthermore the location of this tree is, with a view to the direction of flight, at the final part of the terrain. If the pilot would have attempted to make an emergency landing he would have the aircraft approach the terrain under a smaller angle of descent and the pilot would have attempted to land the aircraft at the beginning of the terrain.

Conclusion

With a view to the above the Safety Board concludes that the most probable cause of the accident is that the pilot became indisposed during flight and consequently was unable to control the aircraft properly.