

Investigation Report

Identification

Type of Occurrence:	Accident
Date:	14 November 2011
Location:	Gleisweiler
Aircraft:	Airplane
Manufacturer / Model:	Cirrus Design Corp. / SR 22
Injuries to Persons:	Two persons fatally injured
Damage:	Aircraft destroyed
Other Damage:	Minor crop damage
Information Source:	Investigation by BFU
State File Number:	BFU CX015-11

Factual Information

History of the Flight

On 10 November 2011 at about 1818¹ hrs the aircraft had landed at Karlsruhe Baden-Baden Airport (EDSB). It had come from Cologne Airport flying in accordance with Instrument Flight Rules (IFR). On 14 November 2011 at about 1541 hrs the airplane was refuelled with 202 litres AVGAS 100 LL for the continuing flight to Düsseldorf Airport (EDDL). The pilot told the Aviation Supervision Office that he had the intention to conduct the flight in accordance with Visual Flight Rules (VFR). The Aviation Supervision Office alerted the pilot to the poor weather conditions and recommended to conduct an IFR flight. According to witness statements, the pilot dismissed it and at 1559 hrs took off from Karlsruhe Baden-Baden Airport (EDSB)

¹ All times local, unless otherwise stated.

with one passenger on board on a Special VFR flight to Düsseldorf Airport (EDDL). At 1603 hrs radio contact with Langen Information was established on the frequency 123.525 MHz. The pilot received a transponder code and a new radio frequency. At 1607 hrs the pilot made radio contact for the last time.

The radar recordings show that the airplane followed the Rhine Valley north. After a flight time of about 11 minutes the town Landau was reached.

There were witnesses who observed the airplane in a flight altitude of about 100 - 150 m above ground flying from the south-east to the north-west across the town. Witnesses described the weather conditions in the region as foggy all day and that between 1500 and 1700 hrs visibility decreased considerably due to fast developing mist. One witness from the town Geisweiler stated that, in his estimation, the airplane flew extremely low and then disappeared in the fog. Shortly afterwards he heard a crashing sound. The last radar recording of the aircraft occurred at 1613 hrs.

North-west off Geisweiler the airplane collided with trees on a mountainside rising to the north-west. After the impact the airplane caught fire and was destroyed. Both occupants were fatally injured.



Accident site

Photo: BFU

Personnel Information

The 41-year-old pilot held a Private Pilot's License (PPL) since October 2005. He held not only a Qatari PPL but also a British and an American Commercial Pilot's License for single and twin-engine aircraft including instrument rating. His total flying experience was about 1,000 hours; about 200 of which on the type in question (last

update on 18 December 2010). The pilot held an American class 2 medical certificate.

Aircraft Information

The single-engine, fibre composite airplane was a self-supporting, low-wing airplane. The aircraft was initially certified in 2006. Total operating time was about 1,050 hours. The last annual inspection took place on 16 September 2011.

The aircraft was registered in the USA and was owned by Aircraft Guaranty Corp. Trustee.

Manufacturer:	Cirrus Design Corp.
Type:	SR 22
Manufacturer's Serial Number (MSN):	1844
Year of manufacture:	2006
Empty mass:	1,009 kg
Maximum take-off mass	1,542 kg
Engine:	Continental IO-550-N
Propeller:	PHC-J3YF-1RF

About 200 litres of fuel were on board. The airplane was equipped with an Enhanced Ground Proximity Warning System (EGPWS). The avionics equipment of the aircraft was suited for IFR flights.

Meteorological Information

On 14 November 2011 a high pressure system dominated the weather in the south-west of Germany.

At the departure time of the aircraft, the Deutscher Wetterdienst (German meteorological service provider; DWD) published the following weather information for Karlsruhe Baden-Baden Airport (EDSB): Wind from 40° with 6 kt, visibility 7,000 m, and overcast with cloud base at 700 ft, air temperature 5°C, dewpoint 3°C and QNH 1,024 hPa.

On the planned flight route from Karlsruhe to Düsseldorf a partially closed stratus cloud with cloud bases between 1,200 and 1,800 ft AMSL extended from the city of

Basel up the northern edge of the Pfälzer Wald (Palatine Forest). The northern boundary was at about 49°45'. It covered the region of the north-east of the Saarland to the Odenwald. The accident site was south of it at 49°14'.

Visibility beneath the stratus cloud was mostly less than one kilometre with the tendency to improve to about 3 to 6 km. The top of the clouds was in about 2,500 ft with visibilities of 30 to 70 km. Due to an inversion, freezing level was at about 11,000 ft.

Lachen-Speyerdorf Glider Airfield is located close to the accident site and has an aerodrome elevation of 394 ft AMSL. Therefore, the distance between ground and cloud base was about 800 to 1,400 ft. In the area of the accident site at the eastern hillside of the Pfälzer Wald ceiling zero prevailed.

The Deutscher Wetterdienst had published the following weather for the time of the accident for Speyer Airport (EDRY) which is close to the accident site: wind variable with 2 knots, visibility 6,000 m, overcast with cloud base at 900 ft, temperature 3°C, dew point 2°C, barometric air pressure (QNH) 1,026 hPa.

The air traffic service provider stated that sunset in Kassel was at 1636 hrs.

Aids to Navigation

Due to the equipment of the aircraft a flight in IFR conditions would have been possible using aids to navigation. The flight was conducted in accordance with Visual Flight Rules (VFR) using satellite based avionics.

Communication

The pilot and the Aviation Supervision Office at Karlsruhe Baden-Baden Airport were in radio communication on the aerodrome frequency. The pilot was also in radio contact with Langen Flight Information Service (FIS).

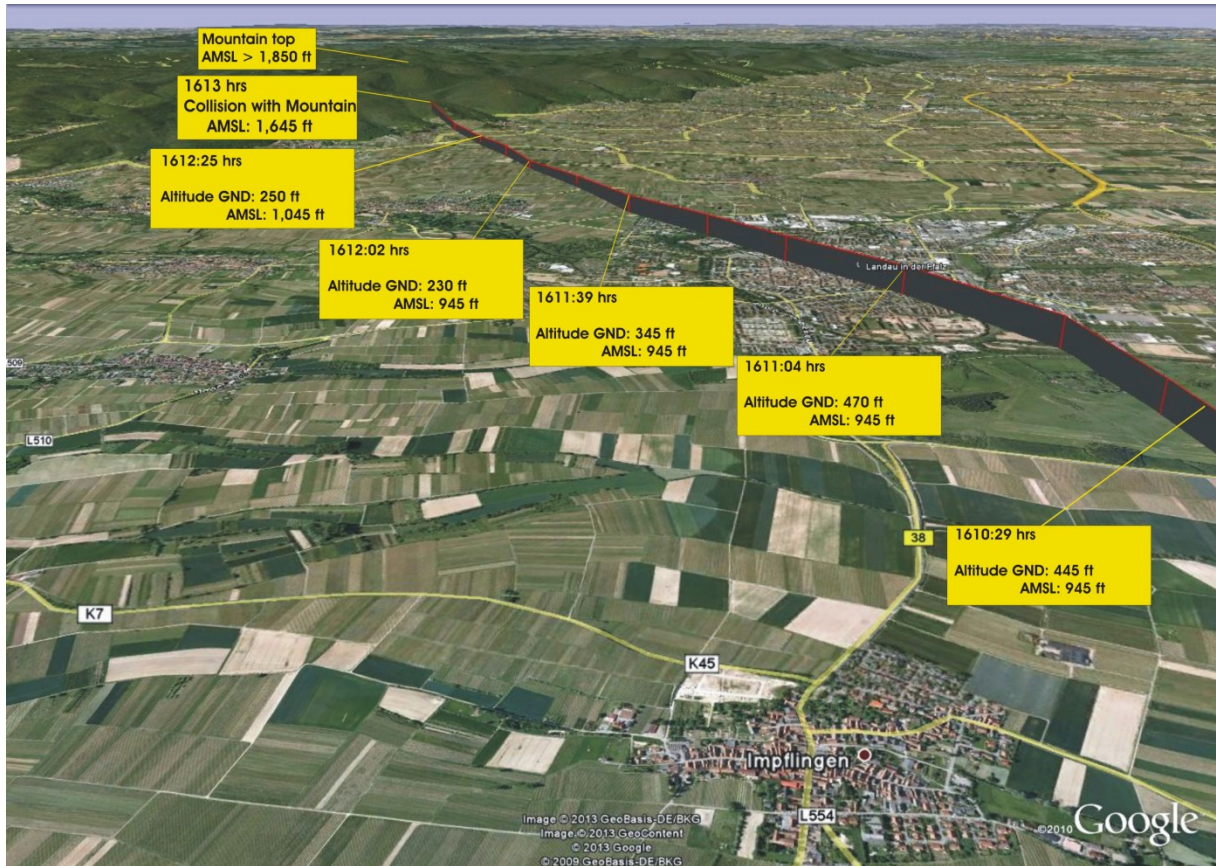
Aerodrome Information

Karlsruhe Baden-Baden Airport has one 3,000-metres-long asphalt runway oriented 03/21. At the time of the accident runway 03 was in use.

Flight Recorder

The GPS on board the aircraft could not be read-out due to the high degree of destruction.

The read-out of the radar data showed that after the aircraft had taken off from runway 03 at Karlsruhe Baden-Baden Airport it climbed to 1,200 ft AMSL and entered French airspace with a northern heading.



Flight path reconstruction

Google Earth™ / BFU

After about 3 minutes of flight time the aircraft descended to 900 ft AMSL and re-entered German airspace at 1605 hrs. The northern heading continued and after about 6 minutes of flight time the transponder code changed from 4000 to 3702. The flight continued in 945 ft AMSL up until north-west of Landau; at about 1612 hrs the aircraft climbed to 1,045 ft AMSL. In the next 35 seconds it climbed from 1,100 ft AMSL to 1,600 ft AMSL.

Around the accident site the ground level rises to about 1,850 ft AMSL and further to the north-west the hills reach about 2,000 ft AMSL.

Wreckage and Impact Information

The accident site was located about 500 m north-west of Geisweiler on a forested mountain side in the district of Teufelsberg. The airplane had contact with the crown area of the approximately 20-metres-high tree population before impacting the

ground. Fracture pieces of the tail section got caught in the trees' crown area and the landing gear was torn out of the fuselage. Pieces of the sheeting of the fuselage and the wings were torn off during the impact and had scattered over an area with a radius of about 20 m. The main wreckage was destroyed by fire. Thereby, the structure, devices, instruments and systems were severely damaged. Due to the high degree of destruction a technical examination of the aircraft was only possible to a limited extent. Technical deficiencies were not determined. Components of the electronic equipment were seized for further investigations.

1.13 Medical and Pathological Information

The Institute of Pathology at the Universitätsmedizin Mainz (University Medical Center) conducted the post-mortem examination. The determined injuries of both pilots were caused by the accident. The toxicological findings for both persons did not show any influence by narcotics, mind-altering drugs or psychotropic drugs or drugs of any other kind. There were no indications of adverse effects caused by alcohol or carbon monoxide.

Fire

The impact with the ground resulted in a crash fire. The fire could spread because fire fighters and rescue personnel could not reach the accident site right away. The tanks burst on impact and larger amounts of fuel burned at the accident site.

Survival Aspects

The accident was non-survivable for both occupants.

Analysis

The pilot was sufficiently licensed and due to his large flying experience on the type qualified to conduct the flight.

The aircraft was duly certificated. The last airworthiness inspection was conducted on 16 September 2011. Load and centre of gravity were within the prescribed limits. A sufficient amount of fuel was on board.

The flight was conducted at marginal weather conditions under VFR even though the qualification of the pilot and the equipment of the aircraft would have allowed an IFR flight.

The weather conditions on the flight from Karlsruhe Baden-Baden to Düsseldorf were characterised by partially closed stratus clouds with cloud bases between 1,200 ft AMSL and 1,800 ft AMSL. Visibility beneath the stratus cloud was mostly less than one kilometre with the tendency to improve to about 3 to 6 km. The top of the stratus clouds was in about 2,500 ft with visibilities of 30 to 70 km.

Prior to the flight, it was realisable to the pilot that in the course of the flight the minimum requirements for VFR flights would no longer be met. Due to the available weather information it was also discernible for him that a flight above the overcast, which had a very limited vertical extent, would be possible. Because of the time, the flight preparation for an IFR flight was forgone, the indications from the Aviation Supervision Office were ignored and take-off took place under Special VFR.

For the planed flight route a flight time of about one hour would have to be expected and, therefore, the aircraft would have reached the destination airport about 30 minutes after sunset.

During the flight, from 1603:49 to 1607:00 hrs, the pilot was in contact with Langen Information on frequency 123.525 MHz. The air traffic service provider prepared a transcript which includes the identification of the aircraft, the assignment of the transponder code and frequency; it does not contain any information to the pilot regarding the conduct of the flight. The information the pilot gave does not indicate any problems on board.

Conclusions

The accident was due to the flight being conducted at marginal visual meteorological conditions in low altitude and collision with obstacles in mountainous terrain.

Investigator in charge: Stahlkopf

Assistance: Lampert, Himmler, Maier

Braunschweig 1 July 2013

This investigation was conducted in accordance with the regulation (EU) No. 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and the Federal German Law relating to the investigation of accidents and incidents associated with the operation of civil aircraft (*Flugunfall-Untersuchungs-Gesetz - FIUUG*) of 26 August 1998.

The sole objective of the investigation is to prevent future accidents and incidents. The investigation does not seek to ascertain blame or apportion legal liability for any claims that may arise.

This document is a translation of the German Investigation Report. Although every effort was made for the translation to be accurate, in the event of any discrepancies the original German document is the authentic version.

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