Investigation Report

The Investigation Report was written in accordance with para 18 Law Relating to the Investigation into Accidents and Incidents Associated with the Operation of Civil Aircraft stating facts only.

Identification

Type of Occurrence: Accident
Date: 26 September 2018
Location: Alkersleben
Aircraft: Ultralight aircraft
Manufacturer / Model: Costruzioni Aeronautiche Tecnam S.r.l. / P 92 Echo
Injuries to Persons: Two persons fatally injured
Damage: Aircraft destroyed
Other Damage: Crop damage
State File Number: BFU18-1440-3X

Factual Information

History of the Flight

At the day of the accident, the pilot of an ultralight aircraft P 92 Echo and a friend met at Arnstadt-Alkersleben Airfield to conduct a flight to the Wasserkuppe. According to witnesses the pilot had prepared and refuelled the ultralight the day before.
The Flugleiter (A person required by German regulation at uncontrolled aerodromes to provide aerodrome information service to pilots) stated that the pilot had contacted him at 1115 hrs¹ via radio and was advised to use runway 27 for take-off. At 1122 hrs the pilot reported at taxi-holding position of runway 27 that he was ready for take-off. Take-off run and lift-off had been uneventful and the Flugleiter did not observe the rest of the departure. He had recorded the take-off of the P 92 Echo into the main flight book and after about 30 seconds had seen the ultralight about 700 m south of the airfield in 80-100 m above ground at the downwind leg. In his estimation the ultralight had flown with slow speed. The pilot had reported via radio: “Ich habe Probleme (I have problems). Ich komm nochmal zurück zum Platz (I am returning to the field).” The transmit button of the ultralight had been pushed to the maximum but the pilot did not say anything more. Then the ultralight entered the fourth turn (final approach turn) coming seamless from the third turn (base leg turn) of the south traffic circuit. During the last turn the bank angle increased steadily to 60-70° whereas the nose was inclined by about 20-25°. Final approach direction was overshot. In 30-40 m above ground the pitch decreased somewhat before the ultralight disappeared behind a row of trees. Shortly after the impact a fire occurred.

Personnel Information

The 69-year-old pilot held a pilot's license for aerial sports equipment issued on 20 April 2004. His class LAPL medical certificate was valid until 12 January 2019. His total flying experience could not be accurately determined. The aircraft log book of the ultralight was partially burned, but it could be determined that since 10 September 2012 the pilot had flown about 470 hours and conducted 520 take-off and landings. In the last 30 days he had flown about 23 hours.

Aircraft Information

The aircraft Tecnam P 92 Echo is a two-seater high-wing ultralight in metal construction with a landing gear in nose wheel configuration. The aircraft is powered by a piston engine with integrated reduction gearing with a two-blade fixed-pitch propeller.

¹All times local, unless otherwise stated.
Interim Report BFU18-1440-3X

Manufacturer: Costruzioni Aeronautiche Tecnam S.r.l.
Type: P 92 Echo
Manufacturer’s Serial Number: 596
Year of Manufacture: 2001
MTOM: 450 kg
Operating Time: About 2,976 hours
Engine: Rotax 912 ULS
Ballistic Recovery System: BRS 5UL

The ultralight was registered in Germany.
The last annual inspection was conducted on 30 October 2017 at 2,868 operating hours. Afterwards about 108 hours were flown with the ultralight.
In May 2012 the engine was replaced; up until then it had a total operating time of 596 hours. There was a discrepancy between the total operating time of 2,976 hours the owner had recorded and the installed service hour meter showing 3,589 hours.

According to the weight and equipment list of 12 April 2014, the empty weight of the ultralight was 292.5 kg and the maximum permissible payload 157.5 kg. The tank had a capacity of 2 x 35 l fuel which correlates with 50.4 kg. According to witnesses, pilot and passenger had a mass of about 170 kg.

Meteorological Information

According to the Flugleiter of Arnstadt-Alkersleben Airfield visual meteorological conditions prevailed, visibility was more than 30 km, and the wind came from 220° with 6-8 kt. In 5,000 ft cloud cover was 4 oktas and the temperature 12°C.

According to the aviation routine weather report (METAR) of Erfurt-Weimar Airport (EDDE), located 18 km north-north-west of Arnstadt-Alkersleben Airfield, of 1120 hrs the following weather conditions prevailed:
Wind: 210°, 4 kt
Clouds and visibility: CAVOK (visibility 10 km or more, no clouds below 5,000 ft above ground or below the maximum sector minimum altitude, no cumulonimbus (CB) and no significant weather phenomena at the airport or in the vicinity)
Temperature: 12°C
Dewpoint: 1°C
Air Pressure: 1,035 hPa

Radio Communications
The ultralight pilot was in radio contact with the Flugleiter at Arnstadt-Alkersleben Airfield. Radio communications were not recorded.

Aerodrome Information
Arnstadt-Alkersleben Airfield has one paved runway with a length of 870 m and a width of 23 m oriented 091°/271°. The airport reference point is 1,145 ft AMSL. The taxiways, the apron, the building for the Flugleiter, and the hangars are located north of the runway.

Flight Recorders
In the ultralight a tablet computer with the flight navigation system Flymap for the system software Android was used. The BFU read out the tablet computer. In the flight navigations program data for a flight to the Wasserkuppe was found.

The recorded data starts at 1122 hrs and ends at 1124 hrs. The following parameters were recorded: geographical latitude and longitude, altitude, course, ground speed, and time. The recording interval of the software was 3 seconds.

The data shows that the ultralight took off and 20 seconds after the recording had started flew into the downwind leg with a left-hand turn. After 42 seconds in almost the same altitude a change in direction from 104° to 308° within 9-12 seconds was recorded. The ultralight lost altitude in the process. The recorded ground speed varied between 28 and 24 kt.
Wreckage and Impact Information

The accident site was located approximately 325 m south-east of runway threshold 27 of Arnstadt-Alkersleben Airfield on a field.

The first traces of ground contact originated from the ultralight’s engine and propeller. The wreckage was found 5.80 m north-west of the impact point, which had a diameter of about 2 m, where parts of the propeller, Plexiglas, and metal parts were found. The left door and parts of the nose wheel cowling were laying 1.5 m north-west of the impact point. The left flap was found 9.70 m north and the left main landing gear 11.60 m north-west of it.

The fuselage had burnt out from the bulkhead firewall to the end of the fuselage. The elevator showed signs of heat development. The vertical tail was almost undamaged.
At the aft part of the fuselage the control rod for the elevator and the control cables for rudder and trim were present. The rudder control was connected and could partially be moved.

The left outer wing had been compressed in the outer section. The wing surface had burnt the metal at the wing root and tank area had partially melted. The right wing had been damaged by fire and burnt at the outer section.

According to the first responder at the site, the recovery system had probably been triggered by fire. When he approached the wreckage he had heard a loud bang.

The engine could be turned at the propeller hub. The spark plugs showed an inconspicuous combustion pattern. There was fuel in the float chambers of the carburettor and the fuel pipes to the engine.

Fire

Shortly after impact a fire occurred.

Survival Aspects

The ultralight was equipped with a BRS 5UL. It had not been triggered during the flight.

Investigator in charge: Knoll
Field Investigation: Gutenmorgen
This investigation is 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 - FlUUG) 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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