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: 8 April 2017
Location: Eschbach
Aircraft: Powered glider
Manufacturer / Model: Self-made / ASW 24 E
Injuries to Persons: Pilot fatally injured
Damage: Aircraft destroyed
Other Damage: Fire damage at a biogas plant
State File Number: BFU17-0344-CX

Factual Information

History of the Flight

The powered glider took off at 1203 hrs¹ from the asphalt strip 05 of Bremgarten Special Airfield to a private flight in accordance with visual flight rules. The pilot, who

¹All times local, unless otherwise stated.
was also owner of the glider, prepared it for the flight. Witnesses observed that the engine had problems during take-off. They heard spluttering of the engine. The Flugleiter (A person required by German regulation at uncontrolled aerodromes to provide aerodrome information service to pilots) observed a marginal climb during take-off until it turned into the right downwind leg of runway 05. The crew of another aircraft observed the flight path of the glider and stated that it was pulled steeply upward during the right downwind leg and then dropped one wing. Witnesses on the ground also observed the dropping of the wing. They stated that the aircraft descended with a steep nose down attitude. It impacted the terrain of a biogas plant and caught fire. The pilot was fatally injured and the aircraft destroyed.

![Fig. 1: Last part of the flight path and the accident site at the biogas plant](source: BFU)

**Personnel Information**

The 70-year-old pilot held a Light Aircraft Pilot Licence Sailplanes (LAPS(S)) of the European Union, issued in accordance with Part-FCL\(^2\) on 27 April 2015 and without expiry date.

\(^2\) Flight Crew Licensing
The privileges of the licence included radio communications in German, flights in accordance with visual flight rules and the following ratings:

- Sailplane PIC\(^3\), no expiry date
- Winch, no expiry date
- Aero Tow, no expiry date
- Self, no expiry date

According to his pilot log book, he had a total flying experience on gliders and powered gliders of more than 2,000 hours. It was not possible to determine his flying experience on type. On 21 March 2017 he had flown 1:30 hours on type.

His class 2 medical certificate was valid until 1 October 2017 and carried the entry VML\(^4\):

### Aircraft Information

The powered glider had a Spanish registration as experimental with the type designation ASW 24E. It was a single-seat glider in glass-fibre reinforced plastic construction with a wing span of 15 m and retractable landing gear. On the owner’s instigation a retractable engine had been fitted.

<table>
<thead>
<tr>
<th>Manufacturer:</th>
<th>Self-made</th>
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<tbody>
<tr>
<td>Manufacturer’s Serial Number (MSN):</td>
<td>German MSN 24062</td>
</tr>
<tr>
<td></td>
<td>Spanish Experimental No. 15038-2797</td>
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<tr>
<td>Maximum Take-off Mass:</td>
<td>428 kg</td>
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<tr>
<td>Total operating time:</td>
<td>Unknown</td>
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<tr>
<td>Engine:</td>
<td>Aixro XF40</td>
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</tbody>
</table>

In 2008 the owner purchased the glider as accident aircraft from a German aero club. In 2016 the owner successfully obtained a Spanish registration as ASW 24E after extensive repairs and alterations. According to the Spanish aviation authority, at the time of the accident the aircraft neither had a temporary nor a final airworthiness certificate. On 16 December 2015 the Spanish authority issued the serial number for the experimental, after the construction process had been completed. On 31 August 2016 the Spanish registration was issued with the aim to give the owner the option to obtain a preliminary certificate of airworthiness so that test flights could

\(^3\) Pilot in Command

\(^4\) Correction for defective distant, intermediate and near vision
be conducted. The Spanish aviation authority stated that neither an application for a preliminary airworthiness certificate was filed nor were test flights conducted. The Spanish aviation authority was of the opinion that the owner had neither continued the process of test flights nor documented them and therefore they did not issue a final airworthiness certificate. The pilot privately owned the glider and operated it in Germany with the Spanish registration but without entry permission. Due to missing documentation total operating hours could not be determined.

According to witnesses’ statements, about 2 years ago the engine was removed and the rotary engine Aixro XF 40, which was not certified for aviation, fitted. The engine manufacturer stated that the engine mounting used was not one of their products but self-made. About 3 weeks prior to the accident a second fuel tank was fitted and the pilot then conducted test flights. All alterations of the experimental were made without consulting the original manufacturer of the glider.

Loading and centre of gravity could not be calculated because neither plans nor documentation for the alterations existed.

Meteorological Information

According to the Flugleiter at Bremgarten Special Airfield visibility was more than 10 km, the cloud amount was low and cloud base higher than 5,000 ft AMSL. The wind came from a northern direction with about 3 kt. Ground temperature was 18°C. QNH was 1,024 hPa.

Radio Communications

The pilot and the Flugleiter at Bremgarten Special Airfield were in radio contact on the airfield frequency. There was no conflicting traffic. Radio communications were not recorded.

Aerodrome Information

Bremgarten Special Airfield (EDGT) has an aerodrome elevation of 695 ft AMSL. It has an asphalt runway, which is 1,650 m long, and a parallel grass strip, which is 600 m long, with the orientation 050°/230°. At the time of take-off, runway 05 was in service.

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5 Above Mean Sea Level
Wreckage and Impact Information

The accident site was located about 1.3 km south of Bremgarten Special Airfield at the south-east edge of the industrial area Eschbach on the premises of a biogas plant.

At the eastern edge of the premises at a stack of wood, initial ground contact traces and the separated winglet of the left wing were found. Behind it an approximately 22 m long white ground trace ran toward the stack of wood. It could be correlated with the ground contact of the left wing. The main wreckage had burnt and was lying at a chipped wood heap (about 4 m high).

The engine mounting including engine had been torn out of the fuselage and was lying about 26 m west of the fuselage at a hopper. The final position of the engine mounting mechanism showed that the engine had been extended during the accident. Between nose area and up to about 2 m prior to the vertical tail the fuselage was burnt. The left wing was lying next to the fuselage and had burnt out by about 80%. The right wing was only slightly burnt and lying in the chipped wood heap. The elevator had been torn off and was found about 22 m west of the fuselage.
Medical and Pathological Information

On 12 April 2017 the Institut für Rechtsmedizin Freiburg (institute for forensic medicine) performed the post mortem examination of the fatally injured pilot. The examination did not determine any indications of acute medical episodes. Due to the severity of the injuries an examination for cardiac occurrence was not possible.

Fire

At the accident site the aircraft caught fire. The chipped wood at the biogas plant also caught fire.

Investigator in charge: Stahlkopf
Field Investigation: Pilz
Hipp

Braunschweig, 10.10.2019
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 - 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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