SUMMARY

The intention of the flight was to carry out a shorter flight with take-off and landing at Varberg/Getterön Airport. Aside from the pilot there was one passenger on board.

Take-off proceeded normally up to the point that the aeroplane had become airborne, when the engine suddenly shut down. The pilot attempted to restart the engine. Shortly after this, however, the left wing hit the ground. Based on the available video evidence and information from witnesses, SHK concludes that the aeroplane lost so much speed that it ended up in a stall, resulting in an increasing vertical speed.

The aeroplane suffered substantial damage to both its fuselage and wings. The pilot suffered serious injuries, while the passenger escaped with minor injuries.

During the technical examinations of the engine, it was possible to establish that one of the metal plates that drive the pump diaphragm in the fuel pump had come loose. The investigation of the riveting of the drive plates showed that the flattened rivet head had not been sufficiently expanded. In view of this, SHK has concluded that the engine failure was caused by one of the drive plates having come loose as a result of faulty assembly.

The engine failure occurred despite the engine having recently been at an overhaul. However, the investigation indicates that the fuel pump in question was not approved for installation in the engine. Consequently, SHK determines that a contributing cause of the accident was that the aforementioned non-approved fuel pump was not replaced by the maintenance organisation in conjunction with the engine overhaul and that this was not detected by either the flying club, the technician who reinstalled the engine following the overhaul or by the Swedish Soaring Federation's airworthiness organisation (SFF CAMO). In summary, SHK determines that the safety barriers, which aim to ensure that only approved, safe and reliable components are installed in aircraft, have not functioned in this case.

It is SHK's opinion that the engine failure resulted in a serious accident because the pilot had limited experience, training and mental preparedness to deal with the situation in accordance with the emergency checklist.

Safety recommendations

The Swedish Soaring Federation is recommended to:

- In cooperation with the Swedish Transport Agency, produce a training plan in order to increase knowledge of the regulations pertaining to life-limited components for sailplanes technicians, airworthiness reviewers and the person responsible for the continuing airworthiness of an aircraft, see chapter 2.5.3. *(RL 2020:04 R1)*
- In cooperation with the Swedish Transport Agency, develop procedures for airworthiness reviews, see chapter 1.6.8 and 2.5.2. *(RL 2020:04 R2)*
- Inform pilots of the importance of repeating the emergency checklist before each flight, see chapter 1.1.2, 1.6.10 and 2.2. *(RL 2020:04 R3)*