



▲ The aircraft after the emergency landing. (Source: Dutch Aviation Police)

Emergency landing after engine problem, Denney Kitfox Mk IV, PH-DJM

Drimmelen, 17 June 2023

The pilot took off from Breda International Airport (EHSE) for a local flight. Near Drimmelen, the pilot gave less throttle, after which he heard a loud bang. Subsequently, the engine power decreased. The engine vibrated heavily and more loud bangs followed. The engine power was insufficient to maintain altitude and speed, upon which the pilot initiated a descent to maintain speed. The pilot decided to make an emergency landing in a field and made a mayday call on the frequency of Dutch Mil. After the emergency landing was initiated, the aircraft landed in a potato field. Because of the loose soil, the aircraft nosed over during the emergency landing and came to rest inverted. The pilot was uninjured and was able to leave the aircraft on his own.

The aircraft falls within the homebuilt aircraft category and had a valid special certificate of airworthiness at the time of the accident. The pilot had bought the aircraft four years ago and performed the maintenance himself. The pilot had a total flying experience of 149:40 hours as Pilot in Command, of which 48:45 hours on this aircraft type.

Investigation of the engine after the accident revealed that one of the four spark plugs of type BR8ES was broken in the middle. The upper part (with the isolator) was found loose from the cylinder, hanging from the spark plug cable.

The Rotax 582UL is a liquid-cooled two-cylinder two-stroke inline engine, certified in the United States of America in accordance with standard ASTM F2339-17 ("Standard Practice for Design and Manufacture of Reciprocating Spark Ignition Engines for Light-Sport Aircraft"). This type of engine is used in homebuilt and microlight aircraft (MLA). The pilot declared that the BR8ES spark plug is approved by Rotax for this engine.⁸

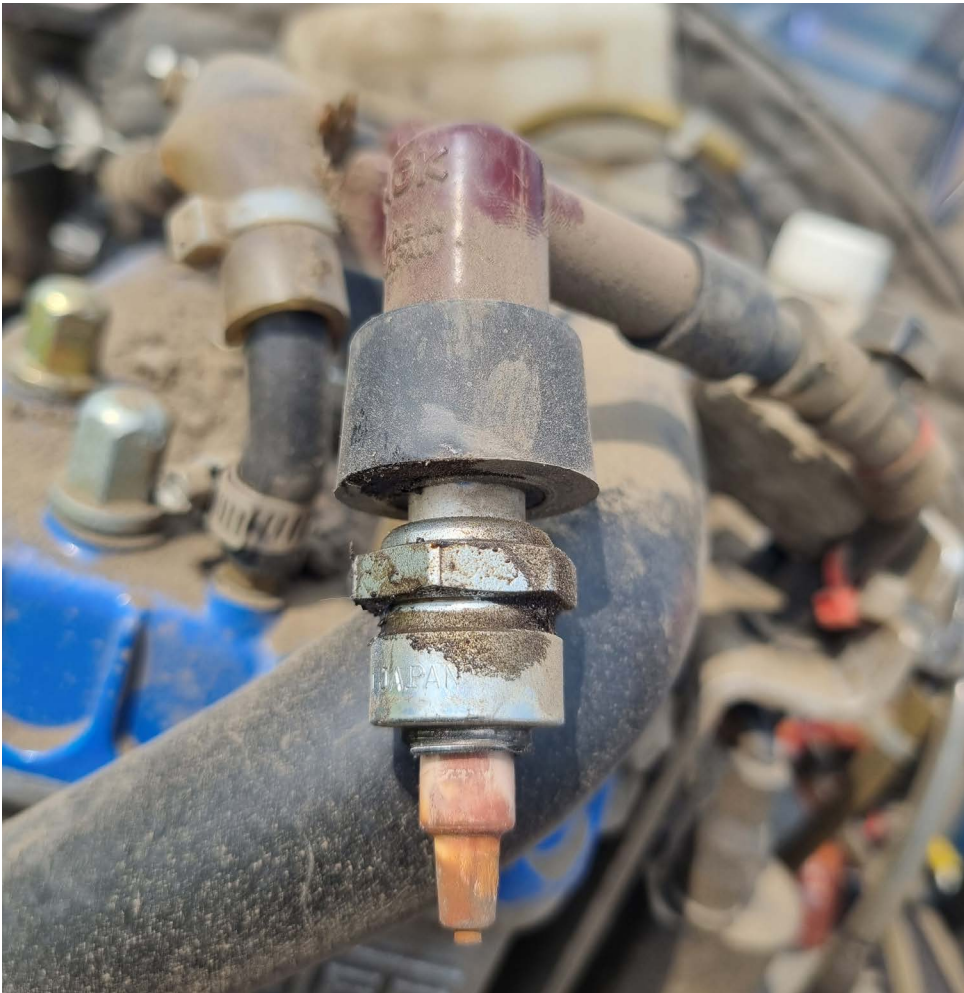
⁸ See also Service Information 17 UL 97-D/E, November 1997, published by Rotax.

The reduction of engine power during flight was caused by the broken and loose spark plug. As a result, no ignition took place in the cylinder and an opening was created in the cylinder head causing the cylinder to lose compression. Because of this, only one of the two cylinders was delivering power. A large part of the engine power was lost. The bangs were probably caused by the piston in the second cylinder that still went up and down and the uncombusted fuel-air mixture that ignited partly in the hot exhaust manifold.

The pilot had replaced the spark plugs on 12 February 2023. According to the pilot, the engine had run 3 hours and 10 minutes with the new spark plugs without any problems, of which 2 hours and 25 minutes flying time, including multiple full power takeoffs. The cause of the failure of the spark plugs was not further investigated.

Classification: Accident

Reference: 2023113



◀ *The failed spark plug.
(Source: Dutch Aviation
Police)*