ACCIDENT

Aircraft Type and Registration:	Titan T-51 Mustang, G-TSIM	
No & Type of Engines:	1 Suzuki V6 Mini Merlin engine	
Year of Manufacture:	2012 (Serial no: LAA 355-14964)	
Date & Time (UTC):	21 May 2020 at 1235 hrs	
Location:	Shobdon Airfield, Leominster, Herefordshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries	Crew - None	Passengers - N/A
Nature of Damage:	Extensive damage especially to the underside of the aircraft	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	73 years	
Commander's Flying Experience:	4,050 hours (of which 73 were on type) Last 90 days - 4 hours Last 28 days - 0 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Whilst turning onto base leg for a V_{NE} run over the runway, the engine lost power. The pilot initially continued towards the runway, but it became clear that he would be unable to make the airfield. He rapidly adjusted his plan and made a forced landing in a field short of the airfield. The aircraft came to rest upright, and the pilot was uninjured. The aircraft was extensively damaged.

History of the flight

The pilot was performing the check flight for a LAA permit renewal. After completing the planned flight, the pilot returned to the airfield for the final item of the check, which was the V_{NE} run. As he turned onto the base leg for Runway 26 at Shobdon Airfield, the engine suddenly lost power and began to wind down. After initially heading straight for the airfield, the pilot made a MAYDAY call and lowered the landing gear. He selected the alternate engine ignition/injection computer but the engine did not pick up.

As the aircraft descended, the pilot realised that he would not reach the airfield. He made a rapid change of plan for an off-field landing, retracting the landing gear and selecting full flap. He saw the only suitable field at 250-300 ft agl and was able to manoeuvre for a landing, levelling the wings just above the ground. After touchdown the aircraft initially skated across the ground before yawing rapidly to the left and sliding sideways until it came

to rest. The pilot described the landing as a “very rough ride”. Figure 1 shows the aircraft in the field after the accident and clearly shows the sideways path of the aircraft.

Figure 1
G-TSIM after the forced landing

Engine examination

The propeller had continued to windmill down to the touchdown, so the pilot considered it unlikely that a mechanical fault was the cause of the engine failure. Examination after the accident showed that the engine contained normal oil and coolant levels, both fuel pumps functioned and both fuel filters were free from debris. The engine fuel injection system is controlled electronically by a programmable unit, and the aircraft is fitted with a dual ignition/injection system switchable via a relay unit to ensure redundancy should one unit fail. Although the pilot switched the units after the loss of power, the engine did not recover. He considered it likely that the engine loss of power was caused by an electrical failure in the ignition/injection system, but the actual fault could not be readily identified.

Survivability

The pilot was not injured, despite being aware during the landing of his head striking the canopy several times. He commented that wearing a helmet in the aircraft almost certainly saved him from what could have been a serious head injury.

Analysis

Post-accident analysis of the engine did not find an obvious cause of the loss of power. The pilot considered it was likely to be an electrical failure within the ignition/injection system, but the fault had yet to be identified.

It is good practice to always be prepared for a loss of power, even when positioning for the landing at the end of the flight. The pilot was able to perform a successful forced landing as he remained calm and was able to change his plan when he assessed that the original attempt to get to the airfield was not going to work.

Although the aircraft was extensively damaged, the pilot was uninjured, probably due to wearing a helmet. The use of helmets can provide the occupants of aircraft with a much greater degree of head protection in the event of an accident. Whilst they may not always be appropriate or necessary for the type of flying conducted, they can offer an additional level of protection.

Conclusion

The pilot managed to perform a successful forced landing after the engine failed on the approach to land. Although time was limited, the pilot continued to assess his options and was able to adjust his plan when the initial one became unviable. Despite extensive damage to the aircraft, the pilot was uninjured despite his head striking the canopy several times during the landing. This was probably because he was wearing a helmet. The cause of the loss of power could not be readily established.