Slingsby T61F Venture T MK2 motor glider, G-BUGV

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Aircraft Type and Registration:	Slingsby T61F Venture T MK2 motor glider, G-BUGV
No & Type of Engines:	1 Rollason RS MK 2 piston engine
Year of Manufacture:	1978
Date & Time (UTC):	21 November 1998 at 1035 hrs
Location:	Enstone Airport, Oxon
Type of Flight:	Private (Training)
Persons on Board:	Crew - 2 - Passengers - None
Injuries:	Crew - None - Passengers - N/A
Nature of Damage:	Damage to the aircraft's propeller
Commander's Licence:	Basic Commercial Pilot's Licence with Instrument Rating
Commander's Age:	27 years
Commander's Flying Experience:	604 hours (of which 102 were on type)
	Last 90 days - 124 hours
	Last 28 days - 36 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Before permitting a recently qualified member of the flying club to fly solo in crosswind conditions, the aircraft's commander decided to fly several circuits with him until he was satisfied with his ability to cope with the conditions. As the conditions were conducive to the formation of carburettor icing, with a temperature of +5°C and a dew point of +1.6°C, particular attention was paid to the use of carburettor heat during the run-up and immediately prior to take off. The engine reportedly performed normally and carburettor heat was used during the pre-landing downwind checks and again on base leg, with its selection maintained until after the glide approach and landing, in accordance with the normal operating procedure for this aircraft. However on the third circuit, just after take off when the aircraft was over the upwind threshold of the runway at a height of approximately 300 feet agl, the engine abruptly lost all power. The handling pilot immediately tried to regain power by 'pumping' the throttle but as the commander judged that insufficient time was available he took control and turned the aircraft left into wind with the intention of landing back on the reciprocal runway. However, in the turn the aircraft lost energy and adopted an attitude

estimated to have been some 50° nose down and 30° left wing low. As the aircraft gained speed in the descent he rolled the wings level and was able to flare before touching down on the grass and 'hopping' over a disused runway/taxiway. Unfortunately, the field on the far side was soft and on the second touchdown the aircraft pitched forward, damaging the propeller, before settling back into a normal attitude. There was no other damage to the aircraft and both occupants, who were uninjured, were able to vacate the aircraft normally. The commander later estimated that the time from power loss to touchdown had been only some 7 seconds.

After repairs to the propeller had been carried out, the same pilot flew the aircraft in the circuit in similar conditions. He noted that on checking the engine prior to flight the customary drop in RPM, from 2,000 to 1,800, occurred upon carburettor heat selection but that after some 20 seconds the engine speed would steadily rise to 2,000 RPM. With the heat control re-selected to 'cold', the speed regained further to 2,200 RPM. In a very full report to the AAIB, the commander concluded that when operating this type of motor glider on MOGAS fuel in cold humid conditions, with insufficient use of carburettor heat, carburettor icing can build up quickly and choke the engine with no prior indication. The aircraft is now operated in the circuit with carburettor heat selected at the start of the downwind leg and maintained until landing, with cold air only selected for the take off and climb.

However, on two occasions since this incident the engine has inexplicably stopped whilst the aircraft was on the ground. On one of these occasions it could not be re-started. In common with many motor gliders, this engine is fitted with a single magneto and when replaced with another unit the problem was apparently cured. It was reported, however, that no specific defects were subsequently found when the suspect magneto was sent for examination.