

No: 6/91 **Ref:** EW/G91/4/4 **Category:** 2c

Aircraft Type and Registration: Montgomerie-Benson B8MR, G-BRZM
No & Type of Engines: 1 Rotax 532 piston engine
Year of Manufacture: 1990
Date & Time (UTC): 19 April 1991 at approximately 1830 hrs
Location: Kilkerran, near Ayr, Strathclyde
Type of Flight: Private (training)
Persons on Board: Crew - 1 Passengers - None
Injuries: Crew - Fatal Passengers - N/A
Nature of Damage: Aircraft destroyed
Commander's Licence: Private Pilot's Licence, Group A
Commander's Age: 28 years
Commander's Flying Experience: 123 on fixed-wing aircraft and 15 hours on the B8MR
Information Source: AAIB Field Investigation

The gyroplane was being operated from a level grass airstrip some 800 metres long, orientated north-east/south-west. The pilot was flying supervised training in accordance with an approved training syllabus and had completed 12 hours flying on the type during the preceding month. During the morning of the day of the accident he had practiced take-offs and landings along the runway in a slight crosswind. The wind was from the north gusting up to 20 kt and the instructor had considered the wind conditions to be unsuitable for the pilot to fly complete circuits.

In the evening the wind dropped to about 10 kt, providing suitable conditions for circuit practice. The instructor briefed the pilot to carry out circuits and landings and then positioned himself close to the normal touchdown point to observe his student's progress. Following two successful circuits and normal landings, the student made a third approach, this time to a point approximately half way along the strip. The instructor observed that his speed, height and power setting were correct for landing but, just before the wheels touched the ground, he heard an increase in power and saw the aircraft climb steeply to between 75 and 100 feet. The nose then came down suddenly and the aircraft fell to the ground. The instructor's recollection was that it tumbled forward in a bunting manoeuvre, without significant roll. There were no other eye witnesses to the accident.

Post mortem examination revealed no pre-existing medical condition of the pilot that could have contributed to the accident.

G-BRZM had been sold as a kit by the manufacturer and completed by its owner, receiving its Permit to Fly in November 1990. Examination of the wreckage and the impact marks showed that it had crashed 410 metres from the south-west end of the runway, virtually on the centreline. It was quite clear that the aircraft was in an almost inverted attitude at first impact, which had been on one of the rotor blades. Some small debris had been thrown in the opposite direction to that in which the machine had been flying, there being little other evidence of significant horizontal speed compared to the obvious high rate of descent. The aircraft had come to rest on its right-hand side, detaching the right mainwheel cross-tube and resting on the rotor blade, which had made the first impact and was now bent downwards almost at right-angles to its proper orientation. The other rotor blade was far less badly damaged but had indications of a permanent set in the droop direction, probably due to a reverse loading. The nature of the marks and the damage suggested that there had been some rotation of the rotor albeit not at the speed associated with normal flight. It was noted, however, that the rotor had not contacted the propeller or fin and rudder - a phenomenon commonly observed in accidents involving the Air Command type of gyroplane.

It was clear that the propeller had been turning at a significant rate but probably was not under full power at the time of the ground impact. One of the rotor pitch control rods had been struck and severed by the propeller close to the rotor head but apart from this there were no disconnections of the control linkages nor any other evidence of engineering malfunction which could have contributed to this accident. The impact had been extremely heavy on the right-hand side and crushing of the seat frame indicated that the accident was non-survivable despite the fact that the pilot's seat harness had not failed.