

ACCIDENT

Aircraft Type and Registration:	Scheibe SF25E motorglider, G-BHSD	
No & Type of Engines:	Limbach SL1700-EAI piston engine	
Year of Manufacture:	1980	
Date & Time (UTC):	13 December 2005 at 1445 hrs	
Location:	Nene Valley Gliding Club, Cambridgeshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Undercarriage collapsed	
Commander's Licence:	National Private Pilot's Licence (UK)	
Commander's Age:	68 years	
Commander's Flying Experience:	466 hours (of which 17.5 were on type) Last 90 days - 17 hours Last 28 days - 5.5 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and examination by the AAIB	

Synopsis

After a normal approach and touchdown, the aircraft appeared to decelerate more rapidly than normal. On leaving the aircraft the pilot found that the monowheel landing gear had collapsed. An inspection of the aircraft revealed that the collapse was due to the failure of a previous poor quality repair to the landing gear swinging arm assembly.

History of flight

Whilst in flight, the pilot had shut down the engine of the motorglider and feathered the propeller in the horizontal position to carry out a 'glide' landing. After completing a normal circuit and approach the aircraft crossed the airfield boundary at approximately 55 kt, the pilot

intending to touch down halfway down the runway to minimise taxiing. He reported that the flare and initial touch down were normal but that the aircraft decelerated rapidly and the 'ride' over the ground appeared to be firm. After leaving the aircraft it was discovered that the monowheel landing gear had collapsed. Inspection of the aircraft revealed that the swinging arm assembly attachment points had broken away from the surrounding structure, which showed clear evidence of previous weld repairs in this area.

Investigation

The aircraft was transported to a maintenance organisation where a full assessment of the damage

to the aircraft was carried out. The failed sections of structure were dispatched to the AAIB for detailed investigation.

The fracture surfaces of both swinging arm attachment fittings showed regions of discolouration and surface corrosion, indicating that a crack had been present for some time prior to the incident. The crack had probably propagated due to a fatigue mechanism, but due to repeated contact between the crack faces no estimation of the rate of progression of this crack, or identification of any initiation sites, could be made.

Several weld repairs to the failed attachment fittings showed evidence of poor fusion, excessive bead build up and incomplete welds. A review of the aircraft's log

book and repair history showed that there have been six occasions since June 1981 when the aircraft needed repairs to its landing gear and surrounding structure, due to damage and cracking, the last of which was in May 2000. However, it was not possible to ascertain details of the extent or exact location of these repairs.

Given the aircraft's repair history and the quality of welding observed on the failed structure, it is probable that this incident was the result of the progression of either undetected or incompletely repaired damage. It was not possible to identify positively when the weld repairs to the failed attachment points had been carried out.