

ACCIDENT

Aircraft Type and Registration:	Pitts S-1T Special, G-WILD	
No & Type of Engines:	1 Lycoming AEIO-360-A1E piston engine	
Year of Manufacture:	1983 (Serial no: 1017)	
Date & Time (UTC):	31 March 2013 at 1355 hrs	
Location:	White Waltham Airfield, Berkshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Aircraft beyond economic repair	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	29 years	
Commander's Flying Experience:	398 hours (of which 93 were on type) Last 90 days - 3 hours Last 28 days - 3 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries	

Synopsis

On touchdown, the aircraft pitched nose-down, and somersaulted completely onto its back before coming to rest once again erect, but substantially damaged. Photographs showed that the aircraft had touched down amongst ruts slightly to the side of the 30 m width of licensed runway. The ruts had been left by a vehicle deploying and retrieving portable runway lighting, used for night flying operations. The airfield operator made several changes to procedures as a result of the investigation.

History of the flight

Following an aerobatic flight, the aircraft approached the airfield from the south-west and joined the circuit.

The weather was benign, with a light easterly wind, good visibility, and no low cloud. The pilot established the aircraft on a stable final approach to Runway 11 with power at between 85 and 90 mph. In order to keep the centreline of the runway in sight, she elected to fly with sideslip to the right and aimed to touch down to the right of the centreline. Slightly before touchdown, the pilot "kicked off" the sideslip, maintaining a three-point attitude for touchdown, and reduced power to idle.

The tailwheel touched down first, followed very quickly by the main wheels. The aircraft pitched nose-down immediately, prompting the pilot to be concerned

that the brakes were unintentionally being applied; she checked that no pressure was being applied to the brake pedals. The pitching continued, the tail rose up, and the aircraft somersaulted completely, rotating around its lateral axis onto its back before coming to rest once again erect, but substantially damaged. A witness stated that the approach had appeared normal, and that on touchdown, the aircraft “flipped dramatically, as if it had hit a divot”.

The pilot, uninjured, evacuated the aircraft and was attended by staff on the airfield and then emergency services. She stated that three things contributed to her survival: having been flying aerobatics, her harness was fully tight; a thick energy-absorbing foam cushion on the seat protected her back; and although her head had apparently shattered the canopy, a leather flying helmet had prevented injury.

Additional information

Photographs showed that the aircraft had touched down amongst ruts slightly to the side of the 30 m width of licensed runway (the edges of the runway were not marked). The ruts had been left by a vehicle deploying and retrieving portable runway lighting, used for night flying operations.

An experienced Pitts pilot and instructor commented that the somersault was possibly precipitated by the propeller tips striking the ground. Photographs showed witness marks in the grass consistent with propeller blade strikes and there was evidence of ground contact on the blade tips. A collapse of the right main landing gear could have contributed to the propeller strike. However, examination of the wreckage showed that the landing gear strut had distorted towards the end of the somersault sequence. The leg bending in compression along its axis was caused by an impact with considerable

lateral motion. Grass was found lodged between the tyre wall and wheel rim, also indicating that significant side-load had been present. There was no evidence of pre-impact fatigue.

Aerodrome operations matters

At the time of the accident, the air/ground radio at the aerodrome was being manned by staff in the operations room on the ground floor of the flying club buildings, not in the visual control room on an upper floor. The personnel in the operations room were engaged in several tasks apart from responding to radio calls, and were not able to devote their attention entirely to radio communications or keeping a watch out over the aerodrome. Only part of the manoeuvring area was visible from the operations room.

The accident site was not visible from the operations room, and the air/ground radio operator was not aware of the accident until a flying instructor, who had witnessed it, reported it. The emergency was only recognised by the radio operator following the second of two radio calls which the instructor made. Staff in the operations room then alerted the aerodrome’s rescue and fire-fighting personnel.

Safety actions

Following the accident, the aerodrome operator reported that procedures have been amended, and an air/ground radio operator is now put on duty in the visual control room whenever staffing permits. Pilots and instructors at the aerodrome have been reminded to make an urgency (pan) transmission if they observe an incident or accident.

The chief flying instructor and airfield manager will also carry out a risk assessment based on the surface conditions before night flying. If the ground conditions

make it appear that operations will exacerbate the rutting on the manoeuvring area, night flying will not take place. The ground crew will be briefed to vary the route of the truck and trailer whilst installing the night lights and efforts will be made to fill and/or flatten the ruts that are already in place by using a roller when the ground is soft enough for it to be effective.

imparted when the main landing gear contacted the ruts, causing a pitching motion to begin, and that the propeller strike exacerbated the pitching motion, which developed into the somersault.

Conclusion

It is likely that the somersault was caused by forces