

ACCIDENT

Aircraft Type and Registration:	DH82A Tiger Moth, G-ANDE	
No & Type of Engines:	1 De Havilland Gipsy Major 1C piston engine	
Year of Manufacture:	1943	
Date & Time (UTC):	14 September 2007 at 1710 hrs	
Location:	Homefield Farm Private Airstrip, 5 nm East of Redhill	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - 1 (Serious)
Nature of Damage:	Severe damage to wings, moderate damage to fuselage and undercarriage	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	30 years	
Commander's Flying Experience:	3,927 hours (of which 295 were on type) Last 90 days - 195 hours Last 28 days - 36 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquires by the AAIB	

Synopsis

While cruising at approximately 1,000 ft agl, with the passenger in the front seat flying the aircraft, the engine failed. The commander took control and flew a forced landing into a grass farm strip obstructed by scattered hay bales. Just before the aircraft landed the passenger unstrapped, stood up and jumped over the right side of the aircraft. After landing the commander ground looped the aircraft in order to stop it before the field boundary and a large tree. The aircraft however, hit a hay bale and came to a halt.

Background information

The aircraft was used by the operator to fly passengers on trial flying lessons from airfields in southern England. On the day of the accident the aircraft had finished operating out of Andrewsfield Airfield, Essex and was being positioned to Redhill Airfield, Surrey.

The passenger, in the front cockpit, held a FAA Private Pilot's Licence but was not qualified on type. He was employed by the aircraft's operator as a member of the ground crew. He flew regularly in the front seat on positioning flights and was given the opportunity to practise manoeuvres including practice forced landings.

About four weeks before the accident, on another positioning flight with a different pilot, the passenger had closed the throttle without warning and asked the pilot what action he would take if he had a passenger on board. The pilot carried out a practice forced landing and go-around but did not comment to the passenger about his actions although he thought it was “a strange thing to do.”

History of the flight

The aircraft took off from Andrewsfield for the flight to Redhill with full fuel tanks at 1620 hrs. Soon after takeoff the pilot gave control to the passenger. South of Sevenoaks, Kent, the pilot briefed the passenger about executing a forced landing and then allowed him to practise one. After going around from the practice forced landing, the passenger maintained control and set course for Redhill. Approximately 5 nm east of Redhill, at about 1,000 ft agl, the passenger said “engine failure” and the engine rpm reduced. According to the pilot, the passenger called the failure “extremely calmly” leading him to believe that this was a simulated rather than real emergency. The pilot said this was not the time to do this due to their proximity to Redhill but the passenger repeated “engine failure.” Realising it was a genuine failure the pilot took control and advanced the throttle from cruise to full power. Although the propeller was rotating, the engine did not respond so the pilot prepared for a forced landing.

The pilot briefly tried to ascertain the reason for the failure by checking the position of the rear cockpit engine ignition switches and the remaining fuel quantity but could not find an obvious reason for the failure. Fortunately he noticed a farm strip close by with two marked grass runways orientated 17/35 and 14/32. The runways appeared clear but the rest of the field was scattered with hay bales. The pilot transmitted a

MAYDAY call to Redhill ATC and attempted to position the aircraft for an approach to Runway 35 knowing that the forecast winds were light. However he had insufficient height to land on Runway 35 and instead landed across the runways, heading approximately 040°, to avoid the hay bales. After flaring the aircraft and just prior to touchdown, the passenger, without warning, unstrapped, stepped onto the right wing and jumped from the aircraft. The pilot stated that the aircraft was one or two feet above the ground and at about 35 kt. After the aircraft touched down, the pilot realised he was not able to stop before the field boundary and a large tree. To avoid these obstacles he deliberately ground-looped the aircraft to the left and in doing so, the aircraft’s lower left wing hit a hay bale and stopped.

He turned off the ignition switches in the rear cockpit, vacated the aircraft and ran to assist the passenger. The passenger was approximately 50 m behind the aircraft and in considerable pain having broken his right leg. Emergency services arrived on the scene approximately 15 mins after the accident.

At the time of the accident the wind was from 280°/6 kt, the temperature was +20°C and the dew point was +14°C.

Pilot’s comments

The pilot stated that the passenger had previously closed the throttle without warning on another flight with him about three weeks before accident. On this occasion he did comment to the passenger about his actions but “did not make a big deal of it.” The pilot commented that he did not check the position of the front cockpit ignition switches, which are visible from the rear cockpit, during the forced landing or after he had landed. However he had asked the front seat occupant to check the position of the front cockpit ignition switches which were

confirmed as being ON. He added that he had flown G-ANDE 80 times in the past year and the engine always performed “perfectly”. The engine operated smoothly throughout the accident flight before it stopped.

Passenger’s comments

The passenger admitted that he had previously closed the throttle without warning on two occasions. He stated that he had overheard some of the operator’s pilots saying they did not get many chances to practise emergencies and believed this would give them the opportunity to practise unplanned forced landing procedures. He also reported that he did not close the throttle or turn off the ignition switches on the accident flight.

The passenger commented that the engine failure produced a sharp reduction in power, as if the throttle had been closed. He added that as the aircraft was about to land he “became panicky” as hay bales were passing close to the aircraft. He was concerned that if the aircraft hit a hay bale, the engine would be pushed into his cockpit causing him serious injury. It was for this reason that he decided to jump from the aircraft.

Engineering investigation

The operator’s engineers carried out an initial investigation into the cause of the engine failure. They confirmed that the fuel vent and fuel filter were clear, there was no fuel contamination and the engine had good compression on all four cylinders. The engine subsequently started on the second swing of the propeller and ran smoothly. The engine was subsequently stripped for a more detailed examination but nothing was found that might have caused the failure.

Follow up action

As a result of this accident, the company’s Operations Manual now states:

‘commanders are not to tolerate unusual actions by subordinate crew members: for example the initiation of simulated engine failures. Such indiscretions are to be reported to a standardisation pilot.’