

ACCIDENT

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| Aircraft Type and Registration: | DH82A Tiger Moth Tiger Moth, G-ANMY | |
| No & Type of Engines: | 1 De Havilland Gipsy Major 1H piston engine | |
| Year of Manufacture: | 1942 (Serial no: 85466) | |
| Date & Time (UTC): | 5 June 2016 at 1345 hrs | |
| Location: | Brimpton Airfield, Berkshire | |
| Type of Flight: | Private | |
| Persons on Board: | Crew - 1 | Passengers - 1 |
| Injuries: | Crew - None | Passengers - None Others - 1 (Serious) |
| Nature of Damage: | Propeller, wings, airframe, fencing and three parked cars | |
| Commander's Licence: | Light Aircraft Pilot's Licence | |
| Commander's Age: | 67 years | |
| Commander's Flying Experience: | 20,852 hours (of which 115 were on type) Last 90 days - 4 hours Last 28 days - 2 hours | |
| Information Source: | Aircraft Accident Report Form submitted by the pilot and AAIB enquiries | |

Synopsis

Directional control was lost during takeoff and the aircraft collided with parked cars. Its wooden propeller shattered on contact with a safety barrier and a member of the public sitting in one of the parked cars was seriously injured by flying fragments of wood.

History of the flight

The aircraft had been participating in a 'Fly-in' at Brimpton Airfield, Berkshire, and had a pilot and passenger aboard. For departure it was manoeuvred to the grass Runway 07, using wing walkers because of the proximity of other aircraft. The weather conditions were good for flying, with a light north-easterly wind, and the grass strip was dry.

The pilot was using an extra seat cushion for the first time, because he found the view from the rear seat of the Tiger Moth "extremely limited" and wanted to achieve the best possible lookout. While taxiing he positioned the elevator trim fully aft, which is the normal position for ground manoeuvring of the aircraft. He recalled that, having reached the holding point, he completed some of the before takeoff checks but could not recall resetting the elevator trim.

Acceleration during the takeoff appeared normal to the pilot and he applied forward pressure on the control column to lift the aircraft's tail off the ground. It then ran over a prominent hump in the in the runway surface, and became airborne.

Concerned that the aircraft might land again and pitch forward onto its nose, the pilot relaxed the forward pressure on the control column, intending to accelerate the aircraft close to the ground. However, the aircraft pitched up in a manner that the pilot found sudden and surprising. Shortly after becoming airborne, however, the pilot began to have difficulty maintaining directional control and, after attempting to regain control, aborted the takeoff and closed the throttle. Almost simultaneously the aircraft's right wing contacted a safety barrier approximately 15 m from the runway edge, and the aircraft swung to the right, through the barrier, and collided with parked cars. The wooden propeller shattered on impact with the barrier and splinters of wood were scattered up to 35 m. A member of the public, who was sitting in one of the parked cars with the door open, suffered serious injuries when struck by fragments of the propeller.

The pilot turned off the fuel and electrical switches and he and his passenger vacated the aircraft normally. The emergency services were quickly on scene.

When the AAIB inspected the aircraft shortly after the accident the elevator trim was found to be in the fully aft position.



Figure 1

G-ANMY shortly before the accident

The fly-in event

The fly-in is an annual event organised by the airfield to raise money for a local charity. The organisers consulted Civil Aviation Publication (CAP) 403 – *‘Flying Displays and Special Events: A Guide to Safety and Administrative Arrangements’*, and identified *‘Runway departure during take-off or landing and collision with people or static aircraft’* as a hazard. The risk assessment determined that the distance between the crowd line and the active runway was not ideal, so the organisers mitigated this by moving the runway as far from the crowd line as the available space allowed, fencing the crowd line with safety barriers. These actions, they considered, reduced the risk to an acceptable level. In addition the organisers distributed posters to advertise the event around the local community, including a warning that, whilst appropriate safety measures had been taken, *‘active airfields can be hazardous’*.

Pilot's assessment of the cause

The pilot considered that the elevator trim was probably not set for takeoff. This may have caused the pitch-up when he relaxed the forward pressure on the control column as the aircraft became airborne. He considered another factor may have been his use of a cushion, which changed his perspective on takeoff, giving him the impression that the tail was higher than it actually was. The result was that the right wing stalled and directional control was lost.